TROUT CULTURE: AN ENVIRONMENTAL HISTORY OF FISHING IN THE
ROCKY MOUNTAIN WEST, 1860 TO 1975

By

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Fly fishing, like other aspects of the romanticized American West, has taken on a larger-than-life appearance. It seems wonderfully simple, however, the imagery of fly fishing suggests more than just a sport but rather a religious experience, a transformative western adventure and, mainly, a nostalgic and simplified view of the past.

“Trout Culture” unravels the history of this creation of place, starting from the 1860s with early trout introductions and state regulations of the territorial period and ending with the modern environmental movement and the wild trout era of the 1960s and 1970s, when anglers and managers started to dismantle the western hatchery system. Placed in this time period, the iconography of regional fly fishing and the nostalgia for majestic trout streams emerges not as a timeless feature of the West, but rather as the product of anglers, fisheries managers, tourists, guides, local businesses, and regional boosters and their century-long profound manipulation of the Rocky Mountain environment.

This study moves beyond purely local and regional stories to explain how local, national, and even transnational forces constructed and reconstructed Rocky Mountain trout fisheries over time. To understand the Rocky Mountain trout culture as a story of shifting meanings and practices, this dissertation shows the crucial importance of focusing on appropriate scales of
power and influence in order to add new strength to the field of western history, helping to undermine the provincial aspects of past scholarship. Local and regional people and places, as this study demonstrates, often importantly mediated national and international conservation practices, creating a new way of viewing western conservation that advances recent interpretations by showing how locals shaped state power and conservation.

The contemporary struggles of conservationists and fisheries managers to save dozens of native fish species throughout the Rocky Mountains demands a need to reexamine this trout culture and its environmental consequences. With large profits and a dependent regional economy, the tourism and recreation industry provides little incentive to reevaluate the region’s problematic association with nonnative trout, even with current scientific and ethical concerns about declines in native species and preserving biodiversity.
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Dedication

For Tioga J. Blackdog, best fishing partner ever.
INTRODUCTION

Fly fishing, like other aspects of the romanticized American West, has taken on a larger-than-life appearance. And no one sells western mythology more than westerners. Sculptures and artwork of fish and fishermen (but not women) line streets and city parks. A mélangé of advertisements and exaggerated images dots the Rocky Mountain landscape and the imaginations of tourists and visitors. Billboards outside of Idaho Falls, Bozeman, and countless other towns advertise waders, drift boats, and fly shops. Multiple microbrew labels feature fishing-related themes, perhaps taking a little too seriously Norman Maclean’s maxim about fishing and beer: “you will have to realize that in Montana drinking beer does not count as drinking.”¹ The poster from the Robert Redford adaption of A River Runs through It shows a Brad Pitt stand-in casting beautifully in the middle of a river.² The iconography proclaims the West to be where the trout are. Big trout.

Ever wonder what all the commotion over fly fishing is about? Basically, bug puppets. Author and fly fisher David James Duncan describes those little concoctions of feathers, string, fur, and hook that fly fishers use to lure trout as bug puppets.³ The puppet imitates an aquatic or terrestrial insect, or in fishing parlance, trout food. The fly fisher—the puppeteer—mimics insect movements in the water, attempting to trick trout into eating the bug puppet. It seems wonderfully simple, however, the imagery of fly fishing suggests more than just a sport but

³ David James Duncan, writer and narrator, Trout Grass, DVD, directed by Ed George (Vashon, WA: Volcano Motion Pictures, 2007).
rather a religious experience, a transformative western adventure and, mainly, a nostalgic and simplified view of the past.

“Trout Culture” unravels the history of this creation of place, starting from the 1860s with early trout introductions and state regulations of the territorial period and ending with the modern environmental movement and the wild trout era of the 1960s and 1970s, when anglers and managers started to dismantle the western hatchery system. Placed in this historical context, the iconography of regional fly fishing and the nostalgia for majestic trout streams emerges not as a timeless feature of the West, but rather as the product of anglers, fisheries managers,

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tourists, guides, local businesses, and regional boosters and their century-long profound manipulation of the Rocky Mountain environment.

The contemporary struggles of conservationists and fisheries managers to save dozens of native fish species throughout the Rocky Mountains demands a need to reexamine this trout culture and its environmental consequences. Nonnative trout have wreaked havoc on native ecosystems and the International Union for Conservation of Nature ranks both brown trout and rainbow trout among “100 of the World’s Worst Invasive Alien Species.” Combined with habitat destruction, the introduction of nonnative fish caused native fish declines throughout the world during the twentieth century. These trends also appear in the West, where many native fish populations have bleak prospects. Once one of the most abundant North American fish, cutthroat trout occupy little of their former range that historically extended throughout the western part of the continent. Of the fourteen subspecies, two subspecies are extinct (yellowfin cutthroat trout and Alvord cutthroat trout); one subspecies is endangered (Paiute cutthroat trout); five more subspecies are considered threatened (westslope cutthroat trout, greenback cutthroat trout, Rio Grande cutthroat trout, Lahontan cutthroat trout, and Humboldt cutthroat trout); and three other subspecies are considered to have vulnerable populations (Yellowstone cutthroat trout, Colorado River cutthroat trout, and coastal cutthroat trout). Bull trout populations in Idaho

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and Montana have experienced similar declines, with threatened and vulnerable populations. And fluvial arctic grayling, once abundant in Michigan and Montana, now only occupy one section of one river in the contiguous United States: the upper Big Hole River in southwest Montana. These at-risk species, unfortunately, represent only a portion of the Salmonidae family. Dozens more fish native to the Rocky Mountain West are extinct, endangered, threatened, or vulnerable.

Yet anglers, tourists, outfitters, local businesses, tourism boards, and fisheries managers still celebrate the West’s nonnative trout while the boosterism suggests a pristine experience with nature in the Rockies. This blind spot goes beyond individual fishing preferences. During the twentieth century, westerners and tourists developed a multi-million dollar industry based on the opportunities to catch nonnative rainbow, brown, and brook trout in the Rocky Mountains. With large profits and a dependent regional economy, the tourism and recreation industry provides little incentive to reevaluate the region’s problematic association with nonnative trout. With the current scientific and ethical concerns about declines in native species and preserving biodiversity, at some point in the near future, western anglers, guides, regional boosters, and fisheries managers need to come to terms with the history of their trout culture.

As the first comprehensive environmental history of trout fishing in the Rocky Mountain West, this dissertation exposes western mythology to trace the historical development of a regional trout culture within a broader and more complicated context. It seeks to fill critical

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8 Jelks, et al., 397. For more information, see Behnke, 293-299.
historiographical gaps in the story of western conservation. This study moves beyond purely local and regional stories to explain how local, national, and even transnational forces constructed and reconstructed Rocky Mountain trout fisheries over time. To understand the Rocky Mountain trout culture as a story of shifting meanings and practices, this dissertation shows the crucial importance of focusing on appropriate scales of power and influence in order to add new strength to the field of western history, helping to undermine the provincial aspects of past scholarship both in western and environmental history. Local and regional people and places, as this study demonstrates, often importantly mediated national and international conservation practices, creating a new way of viewing western conservation that advances recent interpretations by conservation scholars. Despite all the beers, billboards, and bug puppets, critically analyzing the history of the Rocky Mountains’ trout culture will strengthen our understanding of western and environmental history. This work proceeds from these integrated arguments about the growth of trout culture.

First, this dissertation positions the local and regional history of trout within a much larger context of historical practices not endemic to the West but nonetheless important in producing the social and environmental changes that created a Rocky Mountain trout culture. The history of fly fishing and rivers, then, illustrate the spatial arrangements that shift over time.

At once cosmopolitan and provincial, the history of fly fishing reveals a story that must be told from multiple scales in order to fully understand transformed nature in the Rockies. Fly fishing may seem western but it dates back centuries, even millennia, with diverse origins in Europe, Japan, and elsewhere. Yet despite its international lineage, fly fishing by its very nature engenders a uniquely local character. A fly fisher’s choice of bug puppets depends largely on local conditions; seasons and weather, water conditions, the time of day, and various other
factors, all help determine insect hatches and corresponding flies. The Rocky Mountain region also holds distinct fly fishing traditions, which developed in the early to mid-twentieth century. Western fly tiers often weaved hackles and fly bodies or incorporated readily available deer and elk hair into flies; the hair provided useful buoyancy in swift, mountain waters and became a hallmark of Rocky Mountain fly patterns. Many western flies imitate stoneflies, abundant insects in regional rivers. Many westerners fish differently, often using weighted nymph patterns and large streamers beneath the water’s surface, a method considered by many easterners (and dry fly snobs, for that matter) as just short of poaching. Local and regional places, therefore, played a significant role in shaping national and international processes over time. If fly fishing shows the simultaneous local and non-local aspects of place, the remade character of fisheries and rivers symbolize history and how place changes over time.

As noted Canadian conservationist and angler Roderick Haig-Brown once observed, a river never sleeps. A river constantly flows, never suspended in time, Haig-Brown explained: “A river is never quite silent; it can never, of its very nature, be quite still; it is never quite the same from one day to the next.” Space shifts with time, just like a river. In *The Organic Machine*, Richard White outlined the changing ways in which social power produced space along the Columbia River, allowing some groups access while restricting others. White additionally remarked on the changing nature of rivers, commemorated by the riverbeds themselves: “They are, in this sense, historical: products of their own past history.”

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have incorporated spatial analyses into their historical studies have illustrated that the forces
creating space shift and evolve over time, just like a river.

Second, this dissertation uses a spatial framework in order to situate these changing
historical developments in the Rocky Mountains within various local, national, and international
the discipline of history: “We may not, as Edward W. Soja accuses us of doing, write as if
history took place on the head of a pin, but we do usually regard space as a simple container for
the political, social, or cultural.”13 Therefore, he argued for the use of multiple scales, from
global to local (however socially created they are), to explain environmental change. As a
discipline rooted in the rise of the modern nation-state, too often, White maintained, have
historians focused solely on the national scale. He observed that under this framework, even the
local and regional become subsumed under the national, as historians have often portrayed local
and regional histories as substitutes for a larger national experience. White’s solution, however,
did not jettison national history altogether in favor of the increasingly popular global scale
which, like other scales, has been socially constructed. Instead he suggested historians should
employ the appropriate scales for each topic.14 In his article “Water Systems” (2010), Terje
Tvedt added to this approach, insisting that recent work on scale has privileged social relations
while devaluing “the role of the physical terrain.” Tvedt reminded environmental historians of its
importance within scale: “Terrain in space must also be understood as a physical reality…it is
impossible to understand the political and diplomatic relations within larger river basins without
taking into consideration the physical character of the particular river basin…”15 This

14 White, 976-986.
15 Terje Tvedt, “Water Systems’. Environmental History and the Deconstruction of Nature,” Environment and
dissertation approaches the Rocky Mountain West from fitting scales and concentrates on the spatial arrangements of rivers and fisheries, focusing on the five mountain states (since state entities manage fish and rivers) of Montana, Idaho, Utah, Wyoming, and Colorado known for their trout and fly fishing opportunities. The use of various scales, from the local and watershed levels to the national conservation policy level and transnational angling culture scale, shows the sometimes local and sometimes imperial attributes of western conservation.

Western waters were not the only places in the world transformed into trout fishing destinations. The introduction of nonnative species and new fishing regulations remain wedded to larger processes of imperialism and the transnational exchange of conservation ideas, particularly between North America, Europe, and European colonies. Within the last twenty years, historians have studied imperialism and nature, settler societies, and the transatlantic character of the conservation movement. Along with broader changes to environmental history, this scholarship helped American historians reenvision the conservation movement. Thus far, few of the recent discussions of imperialism and nature have dwelled on fisheries, or even the American West, for that matter. A focus on angling offers new ways to think about transnational conservation. Angling—fishing with a hook and line—represented one of the most simple and widespread ways to catch fish across time and place.\(^\text{16}\) As both a sport and subsistence method, it could never be controlled in the elite ways that historians have recently critiqued in their scholarship on the conservation movement, providing an alternative view with fish conservation.

In the late nineteenth century, the Rocky Mountains saw the rise of state conservation, influenced by transnational conservation practices like fish culture, but local conditions there varied from other colonies. Studies of European conservation regimes imposed on colonies, as

well as resistance to laws and regulations, showed a vastly different picture of the conservation movement. Ramachandra Guha’s studies of Chipko and peasant movements in India against state conservation put forth, according to Paul S. Sutter, “a decidedly darker history of state conservation.” Guha’s ideas helped produce scholarship that was more critical of government regulations and involvement, as well as the impacts on local subsistence land use. The edited collection *Imperialism and the Natural World* (1990) additionally examined imperial resource use and conservation policies meant to benefit the metropole. In the American West, locals shaped the conservation agenda through their resistance and their support and local conservation practices. Accordingly, Rocky Mountain fishing offers a different approach to studying imperialism and the environment by expanding on this previous work. Part of the scholarship on imperialism and nature has analyzed how elite British sport hunters shaped laws and game preservation in the colonies, but again ignored fish and fishing.

The inclusion of the so-called “gentle art” of angling may not conjure up the “conquest and domination” of hunting scholarship, but fishing still played an important role in how conservation reworked relationships with nature. The works on sport hunting and empire uncovered the rationale for changes to state conservation and the establishment of game reserves, but failed to mention sport fishing and the introductions of trout and salmon throughout the world, especially in the British Empire. Harriet Ritvo’s chapter “The Thrill of the Chase” in *The Animal Estate* (1987) outlined the exploitation of animals and argued big game hunting symbolized the “conquest and domination” of colonial lands and people. In *The Empire of Nature* (1988), John M. MacKenzie meticulously surveyed British hunting at home and in the

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colonies, indigenous African hunting, and the development of game laws and parks, focusing mostly on Africa and India.\textsuperscript{20} This dissertation places sport fishing and trout introductions within the framework of sport and imperialism, illustrating the cracks in imperial conservation at local and regional levels. An elite and transnational sport, angling simultaneously existed as a common fishing technique. As a widely-used fishing method, angling could never be put forth as strictly a sport and continued to be used for inexpensive subsistence fishing long after the rise of state conservation in the American West.

As in other places, settlers in the Rocky Mountain West brought with them more than just trout and other animals. Settlers transported ideas of nature, imperial ambition, and conservation techniques, as well as new regulations backed by powerful national governments. Much of the literature on imperialism and conservation has concentrated on the Anglo world and settler societies. The edited volume \textit{Ecology and Empire} (1998) appraised imperialism and ecological change, looking at various nations (mostly Anglo settlements) and transnational influences.\textsuperscript{21} Similarly, Thomas Dunlap’s \textit{Nature and the English Diaspora} (1999) addressed the biological and social impacts of settlement in the United States, Canada, Australia, and New Zealand.\textsuperscript{22} This scholarship, as well as David Arnold’s \textit{The Problem of Nature} (1996), broke away from its roots in Alfred Crosby’s \textit{Ecological Imperialism} (1986).\textsuperscript{23} The authors stressed human agency rather than the biological determinism inherent in Crosby’s approach. They argued that the imperial transformations of nature dealt not only with the introduction of nonnative species but

\begin{itemize}
\item\textsuperscript{21} Tom Griffiths and Libby Robin, eds., \textit{Ecology and Empire: Environmental History of Settler Societies} (Seattle: University of Washington Press, 1998).
\item\textsuperscript{22} Thomas R. Dunlap, \textit{Nature and the English Diaspora: Environment and History in the United States, Canada, Australia, and New Zealand} (New York: Cambridge University Press, 1999), 19.
\end{itemize}
also with changing conceptions of environmental use, science, and state conservation. This
dissertation incorporates these approaches on imperialism and nature by documenting the set of
conservation practices and culture that accompanied nonnative trout to the Rocky Mountains.

Other historians have focused less on imperialism and more on the transnational
exchange of conservation ideas and techniques. While American historians earlier portrayed the
conservation movement as an indigenous American phenomenon, recent scholars have shown
the influences of European science and ideas. Dunlap’s *Nature and the English Diaspora* traced
the social exchange of conservation ideas. In *Ground Work* (2007), Char Miller used Daniel
Rodger’s *Atlantic Crossings* (1998) as a starting point for transatlantic crossing of social ideas.
Miller spent considerable time on the German influences on modern forest management,
specifically looking at forester Bernhard Fernow.\(^\text{24}\) Similarly, Darin Kinsey investigated the
French roots of fish culture in “Seeding the Water” (2006).\(^\text{25}\) These works revealed the far-
reaching influence of the conservation movement. Rocky Mountain hatcheries benefited from
these exchanges, particularly those between the eastern United States, France, Germany, and
Great Britain. Rocky Mountain angler-conservationists exchanged ideas and debated the
meaning of sport and conservation among their American and British peers within a vibrant print
culture. These transnational processes helped refashion the Rocky Mountains into a sport fishing
paradise that celebrated trout.

Journalist Timothy Egan has been widely quoted as defining the Pacific Northwest as
“wherever the salmon can get to.”\(^\text{26}\) Identifying a region based on “wherever the trout can get

Press, 1998), Char Miller, *Ground Work: Conservation in American Culture* (Durham, NC: Forest History Society,
2007), 11-33.

\(^{25}\) Darin Kinsey, “‘seeding the water as the earth’: The Epicenter and Peripheries of a Western Aquacultural
Revolution,” *Environmental History* 11, no. 3 (July 2006): 527-566.

\(^{26}\) For a criticism of this conception of the Pacific Northwest, see John M. Findlay, “A Fishy Proposition: Regional
Identity in the Pacific Northwest,” in *Many Wests: Place, Culture, and Regional Identity*, ed. David M. Wrobel and
to,” by contrast, becomes problematic. With the exception of Antarctica, trout species have been introduced and subsequently naturalized on every continent for sport fishing purposes during the nineteenth and twentieth centuries. The long history of fly fishing confuses matters even more. Angling (fishing with a hook and line) has existed for thousands of years and as a form of angling, fly fishing has a definitive written record dating back to 200 AD, when the Roman Claudius Aelianus first described Macedonian fly fishing in *De Natura Animalium*. If trout live almost everywhere and fly fishing has an expansive history, why do they seem so western? This dissertation explores both cultural and environmental aspects of trout and fly fishing in a regional setting.

Third, by shifting the geographical framework in a way that addresses multiple scales of environmental change, this dissertation moves western history beyond the provincialism of many place histories and the determinism of strictly bioregional approaches in environmental history. By doing so, it allows historians to circumvent the dichotomy of process versus place that has dominated western historiography.

Over the course of the twentieth century western history has, for the most part, focused on the study of process (frontier) or the study of place (region). Frederick Jackson Turner’s

Michael C. Steiner (Lawrence: University Press of Kansas, 1997), 37-70. In this chapter, Findlay explores the shifting regional identity of the Pacific Northwest, arguing that the construction of place has largely been created by outside forces. Findlay, 37-39.


“frontier thesis” first popularized western history by arguing that America’s frontier experience shaped its national character and institutions like democracy, individualism, and innovation. Turner defined the frontier as a dividing line between savagery and civilization that moved westward across the continent. Even though it quickly garnered criticism from various sources, the Turnerian approach dominated the field for decades. New Western historians during the 1980s and 1990s reinvigorated the study of western history through a multicultural approach that added complexity to a simplified and mythologized western past. To do so, they produced various criticisms of Turner’s frontier thesis and attempted to write new narratives. New Western historians redefined the frontier not as a dividing line, but as an area of cultural exchange. Many New Western historians, however, shifted to studies of region.

In the attempt to remake western history, New Western approaches to place and region varied. Some authors pointed out characteristics of the West. They distinguished the region through its environmental factors like aridity, the influence of the federal government, urbanization, capitalism, or the high percentage of ethnic groups living there. Other western historians sought to connect process and place. The New Western preoccupation with place has

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30 The most significant and well-known work in this New Western scholarship is Patricia Nelson Limerick, The Legacy of Conquest: The Unbroken Past of the American West (New York: W. W. Norton, 1987).
31 Redefinitions of the frontier varied, but most New Western historians saw the frontier not as a dividing line, but as an area of cultural mixing. For example, Howard Lamar and Leonard Thompson called for a comparative approach to frontiers, defining a frontier as “a territory or zone of interpenetration between two previously distinct societies.” Howard Lamar and Leonard Thompson, eds., The Frontier in History: North America and Southern Africa Compared (New Haven: Yale University Press, 1981), 7.
32 See, for example, Donald Worster, “New West, True West: Interpreting the Region’s History,” Western Historical Quarterly 18, no. 2 (Apr. 1987): 141-156.
33 The edited volume Under an Open Sky (1992) also fell within the New Western tradition. The editors William Cronon, George Miles, and Jay Gitlin called for more comparative studies of frontiers. They also wanted to connect frontier history to regional history and put forth a frontier-to-region plot, following Turner’s frontier-to-section narrative when he later looked for the importance of American regions in the 1920s. See William Cronon, George Miles, and Jay Gitlin, eds., Under an Open Sky: Rethinking the Western Past (New York: W. W. Norton, 1992). Borderlands historians criticized this approach for excluding Mexico and focusing on the American story. See Samuel Truett and Elliott Young, eds., Continental Crossroads: Remapping U.S.-Mexico Borderlands History
been somewhat problematic for the field, but not an approach taken by all historians. In his influential textbook “It’s Your Misfortune and None of My Own,” (1991) Richard White jettisoned Frederick Jackson Turner and his frontier thesis, but also avoided characterizing the West by certain distinctive regional features. As an alternative, White saw the West as created by the people living there and by its shifting relationships to the East, South, Europe, the United States, and Mexico. In doing so, White attempted to avoid both the exceptionalism and provincialism that regional studies might engender. As a whole, New Western historians came to a sort of consensus that the West was marked by its diversity in terms of people and the environment, a logical conclusion given that New Western historians set out to bring down Turner’s metanarrative. The field, therefore, became even more fragmented in the wake of New Western history. However, debates over defining region and place continued, with the rise of bioregionalism shaping these new works in the 1990s.

As an environmental ethic, bioregionalism mirrored concerns with local places in an era of increasing globalization. Scholars turned their attention to the importance of place and a sense of place that would provide a rallying point for addressing ecological issues and establishing political communities. Influenced by these ethics as well as by the larger spatial turn, many environmental and western historians became increasingly concerned with space and place, and sometimes region. Some, notably Dan Flores, called for a bioregional approach to western history, which defined regions by their natural boundaries such as unique regional geological

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35 This consensus is illustrated by Wrobel and Steiner, eds., Many Wests.
features or flora and fauna. The approach met criticisms for ignoring political and social aspects, but some historians have continued to use this method to define subregions in the West. While bioregionalism within historical scholarship has conveniently set seemingly natural parameters for regions, it remains too deterministic of “region,” obscuring the social aspects of place that so concerned New Western historians. This dissertation rejects a bioregional approach, arguing that both environmental conditions and culture constructed the Rocky Mountain West’s trout fisheries by the mid-twentieth century. The history of this place-making reveals that many westerners and non-westerners alike saw—and promoted—the region for its trout and fly fishing opportunities. The regional branding and iconography, however, cannot solely explain this reputation because people keep coming back to fish. Environmental realities and cultural imagination defined the Rocky Mountain trout culture, making a fishing tradition both specific to place and shaped by non-local factors.

Fourth, and finally, by examining how local places and people shaped national and transnational developments in fisheries conservation, a clearer picture of western conservation emerges, one that does not match the recent historiographic thrust of conservation history that has centered on its elite character.

The inclusion of fisheries and angling augments the new scholarship of the conservation movement, which has radically shifted within the last fifteen years. Environmental historians

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have redefined the movement not as the preservation of nature in a static state but rather as the transformation of the environment and land use under state conservation regimes. With the notable exception of Richard Judd’s *Common Lands, Common People* (1997), recent historiography of the conservation movement has focused on the consequences of establishing new laws based upon elite ideals of nature in opposition to community-centered conservation. Conversely, Judd argues the grassroots influence of common New Englanders played a central role in shaping the conservation movement. Even with the shift to scientific management and expertise, Judd asserted that locals still influenced these conservation practices. Besides Judd’s book, few of these works have dwelled on fisheries and fish conservation. More closely following Richard Judd’s interpretation, this examination of western fisheries reveals a broader support for the state conservation agenda than solely from elite anglers, at least in the industrialized West.

Environmental history’s problematic roots in the modern environmental movement shaped earlier scholarship by failing to analyze the consequences of conservation. As such, environmental historians previously glorified conservation of natural resources and wildlife. Within this framework, many scholars produced hagiographical works on John Muir or Gifford Pinchot, debated the preservation versus conservation aspects of the movement, or disputed the movement’s beginnings. John Reiger’s *American Sportsmen and the Origins of Conservation*

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(1975) filled in earlier historiographical gaps by demonstrating the conservation movement started earlier than the Progressive Era with sportsmen concerned about declining wildlife populations.\textsuperscript{43} In spite of the book’s contribution, it largely remained a paean to sportsmen. In the wake of the 1990s wilderness debates, environmental historians reenvisioned the consequences of the conservation movement and included concerns over race, class, and gender.\textsuperscript{44}

The new conservation history scrutinized the consequences of establishing new laws based upon elite ideals of nature, but emphasized hunting while generally and noticeably leaving fishing out of the narrative. These scholars overturned earlier historiography, revealing how class, race, and gender forged ideas of nature and corresponding state control over the environment. For instance, in \textit{The Hunter’s Game} (1997) Louis Warren analyzed the conservation agenda of elites who promoted hunting for “sport” only. By using a discourse of the “public good,” elite conservationists forestalled criticisms from marginalized locals, altering


\textsuperscript{44} Much of the wilderness debates centered on William Cronon’s influential essay, “The Trouble with Wilderness.” Influenced by the cultural turn and its assertion about the situated nature of knowledge, Cronon argued that wilderness was a social construction and outlined the shifting ideas of wilderness from colonial times to the present. Cronon discussed the elites who promoted the preservation of nature for recreational purposes. Influenced by antimodernism, elite males sought to restore their masculinity by spending time in nature. They divorced civilization from wilderness, humans from the natural, and recreation from subsistence use, ironically creating wilderness that mirrored civilization. Accordingly, wilderness could only provide an illusion of escape and, as such Cronon maintained, it remained a dubious focus for the environmental movement. William Cronon, “The Trouble with Wilderness; or Getting Back to the Wrong Nature,” in \textit{Uncommon Ground: Toward Reinventing Nature}, ed. William Cronon (New York: W. W. Norton, 1995), 69-90. Among Cronon’s numerous critics was Samuel P. Hays, a wilderness advocate in the 1960s and 1970s and a historian of the conservation and environmental movements. Hays argued that designated wilderness areas were meant to safeguard the environment from development not preserve an original state of nature. Samuel P. Hays, “Comment: The Trouble with Bill Cronon’s Wilderness,” \textit{Environmental History} 1, no. 1 (Jan, 1996): 30. Although Cronon admirably attempted to broaden environmental concerns, his strict definition of wilderness as a mere social construction undermines the current existence and preservation of these places. Other scholars illustrated the more tangible consequences of creating preserved space and national parks. In \textit{Dispossessing the Wilderness}, Mark David Spence examined the dispossession of American Indians who traditionally occupied or used these areas. By looking at dispossession, Spence called into question the legitimacy of the romantic American ideal of wilderness as pristine, empty nature. Mark David Spence, \textit{Dispossessing the Wilderness: Indian Removal and the Making of the National Parks} (New York: Oxford University Press, 1999), 5. More recently, Mark Dowie’s \textit{Conservation Refugees} (2009) chronicled how western scientific management ignored local use and community conservation, dispossessing large numbers of people around the world in the name of conservation. Dowie, \textit{Conservation Refugees: The Hundred-Year Conflict between Global Conservation and Native Peoples} (Cambridge: MIT Press, 2009).
lifeways of rural residents, immigrants, and Native Americans. Similarly, in *Crimes against Nature* (1999), Karl Jacoby narrated rural experiences with the conservation movement and ways they resisted new regulations in the Adirondacks, Yellowstone, and the Grand Canyon. These authors maintained that middle-class and elite sportsmen largely dictated the character of state conservation, marginalizing the lifeways and subsistence of rural residents, immigrants, and Native Americans.

Many of these recent interpretations have portrayed community conservation as distinct from state conservation. Karl Jacoby argued that historians have perpetuated the elite version of conservation, which he calls “degradation discourse.” He criticized foundational environmental history works like Donald Worster’s *Dust Bowl* (1979) and William Cronon’s *Changes in the Land* (1983) for neglecting lower classes. Like these earlier works, Louis Warren also left out lower-class conservation ideas. Jacoby moved beyond these preconceptions to uncover rural conservation sentiments. He described a rural vision of nature that relied on a moral ecology that favored subsistence use, rather than strictly market or recreational use. Community mores also sought to check exploitation. In this view, locals held conservation ethics that eventually became eclipsed by state conservation. In her work on Canadian wildlife conservation, *States of Nature* (2006), Tina Loo came to a similar conclusion:

> The very kinds of people who were targeted by state management regimes as responsible for the decline in wildlife – rural people who hunted for their own tables and for money to supplement their incomes or who made their livings in the bush – did as much if not more to further the general cause of environmentalism

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46 Jacoby, 49.

47 Jacoby, 3.
and in many cases to conserve particular species and habitats as those who were employed by the state.\textsuperscript{48}

These new approaches spoke to the growth of state power in defining conservation and altering lives of rural people. Benjamin Johnson’s article “Conservation, Subsistence, and Class at the Birth of Superior National Forest” (1999) refined these interpretations, arguing that local elites were agents in state conservation and the ones who benefited.\textsuperscript{49} Besides Judd’s work on conservation in New England, most of the new conservation history has ignored the ways in which non-elite locals molded state conservation. This dissertation shows both the common and elite roots of fish conservation.

Middle-class and elite anglers may have propped up their sport as more protective of fish populations and attempted to control the development of state conservation regulations based upon these notions, but this did not necessarily translate into a class-based conservation program. State conservation of Rocky Mountain waters also meant passing laws that dealt with market use and industrial pollution, which encountered less resistance from local residents. The broad support for hatchery work, the gradual development of state conservation involving fisheries, and the incorporation of community-based conservation issues into state regulations reveal a more complex picture of the conservation movement in the Rocky Mountain West. Likewise, the introductions of new trout species garnered widespread support for state agencies and their fish cultural work and was only made possible with the help from a broad constituency of private citizens. By the mid-twentieth century, these conservation practices remade the region into a premiere trout destination.


The ignored history of trout illustrates the complex and unintended set of circumstances and legacies for trout and other native fish arising from state conservation. The simultaneous local and non-local practices eventually created good trout fishing and the resulting romanticization of the region. This invention, however, held very real consequences for Rocky Mountain rivers and fish. On one hand, anglers and fish managers often overlooked native fish, causing declines for western native trout and other species. On the other hand, local and regional conservationists historically used the cultural and economic importance of trout fishing as a key rallying point for environmental protection. The following chapters chronicle the neglected environmental history of Rocky Mountain trout fishing to explain its costs for native ecosystems as well as production of a conservation ethic that has profound effects on current environmental issues.

Chapter One explores the headwaters of Rocky Mountain fishing by setting up an important transnational context and showing the nineteenth-century development of a transnational angling fraternity, particularly between the United States and Great Britain. These middle- and upper-class anglers, like fly pattern expert Mary Orvis Marbury and Colorado conservation writer Lewis B. France, defined a new sporting ethic within the growing conservation movement. They used print culture to promote and spread new ideas, connecting the Rocky Mountains to a broader exchange. As industrialization and imperialism transformed the world, the same anglers benefited, both in their newfound social status and in the tackle revolution it produced. But their focus on angling—that easy and often-used fishing method—as a sporting technique meant they could never quite control angling or conservation, as illustrated by territorial conditions in the Rockies.
Chapter Two moves to a more regional level, showing the importance of local conditions in shaping national and transnational factors. It dissects the rise of state-led fisheries conservation in the Rocky Mountains, as private fish culturalists and enthusiasts along with state and federal agencies promoted trout propagation. The expansion of the western hatchery system and its accompanying fishing regulations slowly evolved, failing to produce immediate, dramatic consequences, as recent interpretations of state conservation have argued. The introductions of nonnative trout also laid the groundwork for the later development of a regional trout culture.

Chapter Three investigates this emergence of a Rocky Mountain trout culture from the 1920s to the 1950s, its democratic character, and its environmental transformations. The creation of western fly fishing traditions, from Franz Pott and Ted Trueblood to countless other western guides, fly tiers, and anglers, marked the growth of the western tourism and recreation industry. Westerners, tourists, and fish managers created this trout culture from larger transnational influences, remaking non-local trout and practices into something distinctly regional. This Rocky Mountain trout culture relied on an entrenched hatchery system that privileged nonnative fish.

Chapter Four argues that the development of a regional trout culture caused neglect and mistreatment of native coarse fish (non-trout fish species) by anglers and fisheries managers alike. Starting with the roots of these prejudices in Euroamerican fishing culture, the treatment of coarse fish (known as “trash fish” by the mid-twentieth century) became worse with the development of a Rocky Mountain trout culture. By the mid-twentieth century, fish managers frequently dynamited, netted, and dumped fish toxicants in numerous western waters, attempting to improve trout populations.

Chapter Five shows how westerners have contested ideas of place, by exploring the manipulation of waterways within the western agricultural economy and its interesting and
unintended consequences for the Rocky Mountain trout culture. While dams on coastal rivers with anadromous fish runs proved deadly, bottom-release dams on inland rivers ironically created amazing trout fishing in the mid-twentieth century. The prominent artificialness prompted environmentalist and fly fishing genius Gary LaFontaine to call Montana’s Bighorn River a “Disneyland for fly anglers.” These tailwater fisheries additionally produced more crowding and user conflicts, exemplified by a dispute over the ownership of the Bighorn riverbed between white anglers and the state of Montana on one side and the Crow Tribe and the US government on the other side. The conflicts produced by tailwater fisheries confirm the controversial nature of romanticized trout fishing and the need to address this history.

Chapter Six examines how conservation practices continued to evolve within this Rocky Mountain trout culture, in the context of growing environmentalism. During the wild trout era of the 1960s and 1970s, western anglers started the dismantling of the western hatchery system after discovering hatchery fish actually caused declines in wild fish populations. They instead focused more on protecting habitat and environmental health for the naturalized populations of nonnative and native trout. The Rocky Mountain trout culture has continued in this form to the present, with a now uneasy priority given to nonnative trout, the culmination of over a century of environmental and social transformations.

This dissertation reviews the history of Rocky Mountain fish and fishing with hopes that anglers, conservationists and environmentalists, and fisheries managers address this entrenched trout culture in their continued work to save rivers and fish. As a fly fishing and conservation sage, Roderick Haig-Brown believed the sport’s charms included knowing a river: “[A river] has its own life and its own beauty, and the creatures it nourishes are alive and beautiful also.
Perhaps fishing is, for me, only an excuse to be near rivers. If so, I’m glad I thought of it.”

Likewise, protecting western waters and fish means knowing the past as much as the rivers we love.

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50 Haig-Brown, 352.
CHAPTER ONE
EXPLORING THE HEADWATERS, 1860-1900

In one of fly fishing’s most curious and inventive episodes, after running out of flies while fishing, nineteenth-century Scotsman John Wilson improvised a makeshift fly pattern by reportedly tying buttercup petals and grass on a hook. An eccentric professor at Edinburgh, Wilson (pseudonym Christopher North), wrote, taught philosophy, and fished.1 His delightfully odd flower-petal combination apparently caught fish and Wilson later replaced the buttercups and grass with more durable yellow silk and feathers, naming the popular fly pattern the “Professor.”2 In an era marked by its transatlantic exchanges, Wilson’s whimsical fly—in the non-buttercup version—became a popular late nineteenth century pattern on Rocky Mountain waters, perhaps even used to imitate stoneflies, abundant western aquatic insects.3 Such fascinating interchanges made through sporting books and periodicals illustrated how national and international processes helped give form to Rocky Mountain fishing.

This chapter explores the headwaters—the source—of sporting ideals and conservation solutions that shaped the foundation of Rocky Mountain trout fisheries. During the nineteenth century’s latter half, anglers frequently shared fly patterns, fishing methods, and conservation ideals across the Atlantic through lively print culture exchanges. In response to the growing conservation movement, this transnational angling fellowship redefined angling (fishing with a hook and line). They upheld angling as sport, looking down upon the market and subsistence fishing associated with lower classes, rural residents, immigrants, and other races. The inclusion

2 Mary Orvis Marbury, Favorite Flies and Their Histories (1892; repr., Guilford, CT: Lyons Press, 2001), 350.  
3 For the Professor as a stone fly imitation, see Paul Schullery, Cowboy Trout: Western Fly Fishing As If It Matters (Helena: Montana Historical Society Press, 2006), 135.
of middle- and upper-class white women within angling helped to garner respectability for the sport while simultaneously producing disdain for market and subsistence fishers. Leisure-class attempts to redefine angling as a strictly sporting method had lasting consequences, even if they only partially succeeded. Angling itself had diverse roots and varied meanings; fishing with a hook and line embodied a simple and effective method to catch fish throughout history. The widespread use and unsophisticated gear requirements meant that angling could never entirely become an elite sporting activity, suggesting that fish conservation based on elite sporting ideals was never fully realized. As such, leisure-class anglers also tried to assert claims of superiority through their gear.

Middle- and upper-class white anglers in the transnational angling community sought to set themselves apart through their use of new tackle, brandishing new rods, reels, fly lines, and colorful flies created by global trade and industrialization. From 1860 to 1900, a tackle revolution improved fly fishing gear. After the advent of New Imperialism, Euroamerican anglers had an excess of bird feathers, bamboo, and more exotic materials from across the globe to fashion into fishing gear. No wonder, then, that a fly fisherman—the creative John Wilson—reportedly was the first to describe the British Empire’s vastness as “on which the sun never sets.” The angling tackle and practices that arose from these developments shaped fish conservation and environmental change in the Rocky Mountains, from its diverse character to the nonnative trout introductions.

**Angling for Conservation**

During the second half of the nineteenth century, the conservation movement gained force as many Americans began to confront environmental problems stemming from

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industrialization and the rise of the market economy. They no longer celebrated unrestrained
growth and resource use, instead promoting conservation through print culture and political
action. Conservation took on a variety of forms from 1860 to 1920, from sporting and garden
clubs to youth organizations. The movement also had a strong transatlantic character, relying on
European expertise in forestry, fish culture, and other professional fields as conservation
increasingly came under control of states and the federal government. Anglers played a central
role in this growing movement, noticing fish declines and water pollution while on the water.
Middle- and upper-class anglers on both sides of the Atlantic exchanged ideas and solutions
through sporting books and periodicals, attempting to protect both water and fish from
environmental ruin. Angler-conservationists promoted a sporting ethic that sought to limit their
own catches, while using gender to discredit other market and subsistence fishing methods used
by lower classes, immigrants, and non-white races. The conservation movement had roots in
Romanticism and the experiences of growing numbers of outdoor recreationists in the nineteenth
century.

A literary and artistic movement, Romanticism influenced both the growing nature cult
and the conservation movement of the second half of the nineteenth century. As a movement
against the rationality and coldness of industrial capitalism and other Enlightenment
manifestations, Romanticism artistically celebrated emotions and beauty, especially in nature,
shaping western views of nature and growing conservation ethics. Influenced by this new
reverence for nature, a growing middle class in Europe and the United States increasingly headed
outdoors to spend their leisure time and money on recreational activities. They fished, camped,

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hiked, and enjoyed other experiences that allowed them to escape the industrialization and
urbanization of the modern world.

Part of a back to nature movement, nineteenth-century anglers fished to catch dinner,
become healthy, spend time in nature, challenge their physical and mental capabilities, and a
variety of other reasons. A growth in sporting culture print mirrored the actual growth of sport.
One American fishing author laid out the diverse benefits as he promoted fly fishing among men,
women, and children:

Fly-fishing possesses its peculiar advantages. As a means of exercise, it reaches
just the degree to brace the muscles, exercise the temper, enliven the spirits, and
produce the alternations between hope and despair characterized as sport. It
encourages fine address and graceful attitudes, produces earnestness and even
enthusiasm, and while the practice in minutiae is not so close as to pin the mind to
the earth, every sound of bird or sight of flower is enjoyed by the devotee, and as
he casts his eyes aloft and around, the earth appears a paradise, and anglers the
only appreciative recipients of its blessings.\(^6\)

Fly fishing, then, could improve connections to nature as well as mental and physical health.
Leisure class anglers placed high priority on their time in nature, a romantic vision that went well
beyond attempts to catch fish.

Influenced by Romanticism, the growing leagues of nineteenth-century leisure class
anglers often held sentimental views of nature, expressing them in sporting books and
periodicals. Even some of the celebrated Romantic artists enjoyed angling, like the painter J. M.
W. Turner and the poet William Wordsworth.\(^7\) Their non-artistic angling peers became
participants in a sort of experiential romanticism, relishing nature’s beauty while wetting a
fishing line.\(^8\) One sportsman liked that fly fishing took place “amongst the most picturesque

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\(^{8}\) Peter J. Schmitt argued that Romanticism was primarily an intellectual movement: “Romanticism was a literary
cult, committed to a picturesque landscape ministering to men’s minds rather than to their bodies.” Schmitt, 4-5. For
the differences and similarities between Romanticism and sportsmen’s views of nature, see John F. Reiger,
panorama designed by nature.” Likewise, British chemist and inventor Sir Humphry Davy believed fishing brought appreciation of nature’s beauty to its practitioners, as well as pleasure, patience, and knowledge of the surrounding environment. Other anglers echoed Davy’s praise of nature and survey of natural history. “One of the great charms of angling,” wrote one sportsman, “is, that of all sports, it affords the best opportunities of enjoying the wonders and beauties of Nature; while, at the same time, it develops a love of nature, and creates a taste for the study of various celestial and terrestrial phenomena.” Since angling meant more than just catching fish, it brought people closer to nature, developing an environmental stewardship among many anglers and prompting their contributions to the growing nineteenth-century conservation movement.

During the mid-nineteenth century, the conservation movement started to coalesce. George Perkins Marsh’s bestselling *Man and Nature* (1864) provided a key text for those Americans seeking to remake interactions with nature. Marsh’s work as the Vermont fish commissioner trying to save the state’s declining fisheries as well as his time abroad as an American diplomat (he spoke twenty languages fluently) provided him with the material to write a voluminous book on human destruction of the environment. Marsh examined forestry, floods, soil erosion, fisheries, and other topics, showing how humans transformed nature and using the environmental ruin of Europe and its ancient empires as an example to Americans. More than

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just a catalog of environmental decline, Marsh maintained his faith in humans and science and offered various solutions, including the artificial propagation of fish, a key factor in creating Rocky Mountain trout fisheries. After the book’s wide publication, the conservation movement gained ground in the United States.

The American conservation movement grew tremendously during the second half of the nineteenth century. Within the political and social exchanges across the Atlantic Ocean, the movement took on a transnational character, from European immigrants working in government agencies to the European training received by American conservationists like federal forester Gifford Pinchot.\(^\text{13}\) Conservation partisans in the United States came from varied strands. The popularity of sportsmen’s clubs following the Civil War promoted wildlife conservation. Celebrated sport hunters Theodore Roosevelt, George Bird Grinnell, and other fellow elite sportsmen formed the Boone and Crockett Club in 1887, the first organization to address national conservation issues.\(^\text{14}\) American middle- and upper-class women also played a role in the growing movement, forming garden clubs and other societies while invoking notions of womanhood and morality. Attempting to save the birds that once adorned their fashionable hats, Victorian women formed Audubon clubs to put an end to the bird trade.\(^\text{15}\) The movement had become well established, but splintered in goals by the progressive era (c. 1900 to 1917). The famed split pitted conservation against preservation. Federal forester and friend of Teddy Roosevelt, Gifford Pinchot exemplified the conservation side; Pinchot promoted the efficient use of nature for the public good. Conversely, John Muir embodied the preservationist side that


\(^{14}\) Reiger, 4.

sought to set aside nature for its own sake, not just for natural resources. Anglers contributed to
the conservation movement throughout its development from 1860 to 1920.

If their societal status provided leisure-class anglers with an element of escape, their time
on the water also brought them closer to the environmental degradation that followed the rise of
the market economy and industrialization from which they benefitted. Their first-hand
experiences on the water prompted many anglers to support the late nineteenth-century
conservation movement. With the rise in conservation sentiment during the nineteenth century,
European and American incorporated ideas of self-control and limited catches to promote their
sport, using print culture to disseminate ideas across the Atlantic and throughout colonial
holdings. Despite their best intentions, these leisure-class anglers who hoped to control the
fishing practices of others often did so through the lens of race, class, gender, and national
identity. Historians have largely portrayed a dichotomy between masculinity and femininity
within the conservation movement, but sport and angling culture shows a different view. To

16 A large historiography exists on gender and the conservation movement, focusing largely on the separate ways
men and women manipulated gender roles to campaign for environmental protection. Teddy Roosevelt’s campaign
for a “strenuous life” and his role in the progressive conservation movement invokes a familiar top-down story
within the American historical saga. Women and gender historians have expanded this narrative to illustrate both
women’s involvement in the conservation movement and the role of gender in shaping conservation campaigns.
Within the tradition of social reform clubs, women promoted environmental consciousness within the public sphere
using gender, like the women discussed in Jennifer Price’s Flight Maps (1999) who rejected bird hat fashion and
formed Audubon societies. See also Cameron Binkley, “‘No Better Heritage than Living Trees’: Women’s Clubs
and Early Conservation in Humboldt County,” Western Historical Quarterly 33, no. 2 (Summer 2002): 179-203,
Glenda Riley, Women and Nature: Saving the “Wild” West (Lincoln: University of Nebraska Press, 1999), and
1 (Spring 1984): 57-85. Class and race also helped shape these notions of conserving the environment. Other
scholars have earlier observed that middle-class sportsmen looked down upon market and pot hunting as more
harmful to wildlife than sport hunting. Schmitt, 9 and Reiger, ch. 2. Much of the new conservation history such as
Karl Jacoby’s Crimes against Nature elaborated on these roots to redefine the historiography by dwelling the
consequences of elite sporting regulations on lower classes and other races. Karl Jacoby, Crimes against Nature:
Squatters, Poachers, Thieves, and the Hidden History of American Conservation (Berkeley: University of California
Press, 2001). More recently, two scholars have illustrated how gender helped delegitimize the wildlife use of non-
white and lower class people. In “Our Lady Sportsmen” (2005), Andrea L. Smalley argued the presence of women
sport hunters within periodicals shaped conservation policy: “By including women in the pages of their periodicals,
sportsmen-writers and editors defined recreational hunting in a way that disassociated it from subsistence hunting,
marketing hunting, and unproductive indolence,” Andrea L. Smalley, “‘Our Lady Sportsmen’: Gender, Class, and
Conservation in Sport Hunting Magazines, 1873-1920,” Journal of the Gilded Age and Progressive Era 4, no. 4
gain more legitimacy, some middle-class anglers relied on Victorian ideals of gender—oddly enough, both masculinity and femininity—to criticize immigrant, market, and indigenous fishermen for contributing to fish and game declines.

Nineteenth-century America experienced dramatic social and economic upheavals, changing the way Americans perceived both citizenship and the role of the nation-state.17 Westward expansion and Reconstruction brought both Native Americans and freedpeople into the nation, but their societal standing and citizenship status, as well as for the increasing numbers of immigrants, became defined as second class.18 In the midst of these changes, in addition to the cyclical economic panics and depressions to labor agitations, the middle class sought to maintain their sometimes seemingly fragile economic and social status by defining citizenship through the shifting concept of whiteness to contend with immigration and industrialization.19 As the American leisure class tried to strengthen these claims to whiteness and superiority, they renewed connections to their British angling peers to create a western angling community.


17 For Gilded Age transformations, see Alan Trachtenberg, The Incorporation of America: Culture and Society in the Gilded Age (New York: Hill and Wang, 1982) and Nell Irvin Painter, Standing at Armageddon: The United States, 1877-1919 (New York: W. W. Norton, 1989).
18 For more on nation building and the connections between westward expansion and Reconstruction, see Elliott West’s concept of “Greater Reconstruction” in The Last Indian War: The Nez Perce Story (New York: Oxford University Press, 2009).
White, middle-class women held a paradoxical position in this changing society, simultaneously playing a role in new definitions of the American national identity while being kept from official political participation. These concepts of citizenship—shaded by race, class, and gender—filtered into sporting culture and state control of natural resources.

Gender helped define angling as a white, leisure class endeavor. Within the social and economic transformations of the late nineteenth century, middle-class men became concerned with challenges to their authority. Economic downturns, fewer career opportunities, labor unrest, increasing immigration, women’s movements for equality, and a new disease called “neurasthenia” all threatened undermine white, middle-class male power. A sort of nervous, mental disorder, neurasthenia plagued middle-class professionals working in the modern world. Many turned to the outdoors and exercise to strengthen their bodies and manhood.\(^{20}\) Within this worldview, some saw angling as a way to confirm their masculinity. One British sporting writer believed outdoor recreation provided a solution to the “mental exhaustion” of businessmen.\(^{21}\) One American counterpart, angler-conservationist and politician Robert Barnwell Roosevelt (Teddy’s eccentric uncle), considered the health benefits of angling and being outdoors, connecting physical strength to national strength: “Our ancestors had in a thinly settled country as much physical labor as their bodies needed, but their descendants are suffering for the want of outdoor [sic] exercise.”\(^{22}\) Masculinity characterized angling among some of its practitioners, but mirroring the paradoxes within gender roles themselves, femininity could also be used to define sport as a leisure class activity apart from other races and lower classes who fished for food or market.

\(^{20}\) Bederman, 12-17.
\(^{21}\) Manley, 93.
\(^{22}\) R. Barnwell Roosevelt and Seth Green, *Fish Hatching and Fish Catching* (Rochester, NY: Union and Advertiser Co.’s Book and Job Print, 1879), 124-125.
Angling represented a respectable sport for Victorian women, as long as they maintained proper gender boundaries (hence the vast number of early photographs of women in dresses, skirts, and other seemingly inappropriate fishing garb). Women anglers also contributed to sporting periodicals, wrote books, and ran fly tying businesses, giving them authority within the sport. These endeavors not only gave women a way to exercise agency, but also provided legitimacy to the sport itself. Mary Orvis Marbury’s famed treatise on American fly patterns, *Favorite Flies and Their Histories* (1892), marked this time when white, leisure class women helped define sport through race and class. As such, part of women’s acceptance into the angling world rested on an element of consumerism and class.23 Even Marbury saw her readership (and customers of her father’s business) as a leisure class: “The object of this treatise is to aid those who fish and observe for pleasure,—who seek fresh vigor and strength in a pursuit which occupies mind and body in the open air, and yields excitement without worriment.”24 Marbury and other women’s angling expertise offered them a way to exercise power within prevailing gender norms. Their presence within the sport furnished anglers a credibility within the conservation movement.

Throughout the nineteenth century, anglers proclaimed sporting ethics that imposed voluntary restrictions. Due to anglers’ varied motivations and the awareness of rivers and fish populations, catching large numbers of fish was not necessarily important for the sport. Humphry Davy, for instance, advised fellow anglers to release smaller fishes under two pounds—“…and if every fish that took the May-fly were to be killed, there would be an end to the sport in the river, for none would remain for next year.”25 Maintaining fish populations for posterity often showed up in nineteenth-century sporting literature (although these sentiments can also be traced back

23 McMurray, 99-102.
24 Marbury, 3.
25 Davy, 25.
centuries in Europe). One influential American angler insisted sport was not about taking fish, but with the pleasure derived from it, “…not with the value or numbers of the victims, but with the difficulty of the capture, and the degree of skill, science, courage, or endurance, called forth in the act of taking.”

Colorado gold rush lawyer and sporting writer Lewis B. France echoed British and eastern American views that anglers should temper their fish catches, stating “The true sportsman does not go down stream and afield for the mere love of killing something.”

Robert Barnwell Roosevelt wrote extensively on fishing and conservation in eastern North America during the 1860s and 1870s, arguing it was important to save fish “from total destruction.” Roosevelt and other sportsmen played an instrumental role in the 1871 creation of the US Fish Commission, the first US government agency to address conservation issues. A protégé of George Perkins Marsh, Spencer F. Baird served as the agency’s first commissioner. Angler-conservationists not only deliberated over sport within print culture, but also advocated for conservation.

In the late nineteenth century, anglers debated the meaning of conservation within sporting periodicals such as Forest and Stream. Through sporting ethics, they willingly restrained their catches. Rocky Mountain anglers contributed to these discussions. “Millard” from Ariosa, Wyoming, defined the sport by its conservation principle, stating “The essence of good angling is not to catch too many.” Similarly, if anglers kept an improvident catch, other sportsmen could censure them for waste. “Shoshone” bragged in an 1887 article about his fishing party’s extravagant catches in Nevada. The group of upper-class men from Salt Lake City

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27 Lewis B. France, With Rod and Line in Colorado Waters (Denver: Chain, Hardy, 1884), 37.

28 Roosevelt and Green, 9-10.

29 Reiger, 80.


31 Millard [pseud.], Forest and Stream 39, no. 21 (Nov. 24, 1892): 450.
reportedly caught 100 trout before lunch and kept fishing through the afternoon. By the day’s end, the party’s most productive member alone caught well over that number and the group’s luck may have been precipitated by a golden stonefly (large yellow insects) hatch, which usually tapers off by mid-afternoon: “The best results for the day were obtained by Mr. Beo. B. Brastow, of Salt Lake, who, with a Leonard split bamboo rod and three-fly leader, landed 133 fine trout. His favorite flies were the grizzly-king, brown-hackle, and royal-coachman. The yellow-bodied gray-hackle did good work in the morning, but seemed worthless after 2 o’clock.” A fellow angler quickly wrote in, criticizing the wastefulness by asking, “What could these five sportsmen do with 150 to 200 lbs of trout out in the wilds of Nevada, having a larder already well stocked with game, in the month of August? Comment seems unnecessary.” Anglers argued in print culture over conservation within the sport and monitored each other, regardless of locale.

Print culture could also be employed on a more local level, reinforcing community values of moderate catches rather than elite sporting ideals. The local paper in the mining (now ghost) town of Ruby City, Idaho, called attention to the trout “fishing mania” sweeping the town in July 1868. The editor also used the opportunity to reprehend three men for taking too many: “…we couldn’t get a bite, for the reason that Jack McQuaid, Bill Gabriel and Dave Jackson bought up all the fishing tackle in town and went out there with a pack train yesterday and they wont [sic] leave a fish. Let us have a fish law passed next Legislature providing against such indiscriminate fish slaughter.” Like leisure-class anglers, locals also used print to gain support for conservation and check on community fish use.

With a stimulating print culture, anglers from the Rocky Mountains to the Catskills to England’s River Test shared and refined their sport. This transnational angling community

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32 Shoshone [pseud.], “Rod and Gun in Nevada,” *Forest and Stream* 29, no. 8 (Sept. 15, 1887): 143.
33 Letter to Editor from Coahama [pseud.], *Forest and Stream* 29, no. 11 (Oct. 6, 1887): 209.
34 Owyhee Avalanche, July 18, 1868.
connected sport to conservation issues, upholding a romanticized view of nature while tempering their own catches. Many of these leisure-class anglers also frequently blamed market and subsistence fishermen for dwindling fish populations. One of the most influential nineteenth-century American sporting writers, “Uncle Thad” Norris, wrote in *The American Angler’s Book* (1864) about the decline of brook trout in eastern waters caused by both industrial pollution and fisherman. He complained bitterly about market and subsistence fishermen using weirs and traps and other “unfair modes practiced by the natives and pot-fishers in exterminating them.” Such views sought to marginalize non-“sporting” fishing practices, imprinting late-nineteenth century notions of class, gender, race, and national identity onto conservation.

By redefining angling as a superior fishing technique and incorporating conservation ethics into the sport, anglers influenced growing state-led conservation, codifying new regulations aimed at conserving the environment (addressed more thoroughly in the next chapter). Yet angler-conservationists often encountered hook and line fishing among the lower classes, immigrants, and non-white races they blamed for fish declines. Many conservation regulations may have reflected leisure-class ideas of sport, but the widespread use of angling meant that it was less marginalizing than other aspects of the conservation agenda in the Rocky Mountains and elsewhere.

**Angling’s Varied Meanings and Practitioners**

In his history of the Columbia River, *The Organic Machine* (1995), Richard White explored how energy and work connected humans and nature along the Columbia. White argued race, class, and gender divided space, excluding Chinese, Indians, and other groups from the river or relegating them to indoor cannery work. Conversely, upper-class white tourists like

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Rudyard Kipling enjoyed spending leisure time in nature: “Out of doors, class as well as race divided the river. Kipling, in retreating to a rod and reel, took his salmon on the Willamette. In selecting how and where he fished, he gave away his class. How and where men caught fish reflected a class struggle.” As such, Kipling used angling as a restorative activity that would reconnect him with nature, a relationship he saw as alienated by machines and the modern world. Yet angling—fishing with a hook and line—did not necessarily always reveal class or class struggles. Kipling’s fancy rod and reel, as imagined by historian Paul Schullery, certainly marked his elite status. When Rudyard Kipling, the quintessential imperial apologist—and late-nineteenth century fly fishing tourist—fished the American Far West during the late nineteenth century, Schullery noted that Kipling “brought the world” with him:

His rod was probably made of “Calcutta” bamboo from India, split and glued into an excellent casting instrument by one of many British or American rod makers. His line was almost certainly silk from India or Persia, plaited to perfection in some European or American tackle factory. His leaders would have been silkworm gut from Italy, Sicily, Portugal, or (most likely) Spain. His flies could have contained feathers and furs from six continents, tied on Irish, English, or Norwegian hooks, in patterns representing several centuries of British fly-pattern theorizing.

The Calcutta bamboo rod, the silk fly line, the exotic feathers in his flies all marked Kipling as part of a transnational angling community that enjoyed sport and leisure. For others, however, fishing with a hook and line meant something altogether different, reflecting angling’s different roots and traditions. Class, then, sometimes manifested itself in not how or necessarily where people fished, but the significance they attached to the gear and activity, whether for sport,

37 White, 33-34.
subsistence, or a combination of meanings, as the diversity of anglers illustrates.\(^{39}\)

Historically, angling represented a commonly used fishing method, practices that were not limited to Euroamerican elites. It has been a simple way to catch fish for millennia. Archeologists in East Timor recently uncovered the world’s oldest fish hook, dating back to 42,000 BP.\(^{40}\) The limited amount of gear needed and the fact that many anglers could easily make their own lines, hooks, and rods, meant that it was broadly practiced. Even after the advent of industrialization and world trade that created demand for split bamboo rods, silk lines, and colorful feathers, some elite sportsmen still conveniently fashioned a pole out of nearby trees or willows when they arrived at their fishing spot.\(^{41}\) With angling’s non-elite origins, elite attempts to redefine hook and line fishing into a sport could never be complete because of its simplicity in gear (pole, line, hook) and effectiveness in catching fish. Even fly fishing developed among Europe’s lower classes and those who fished for a living.\(^{42}\) European fly fishing continued to have common practitioners up into the nineteenth century when British angler Sir Humphry Davy observed peasants fly fishing in Austria, Germany, Switzerland, and the western Balkan peninsula. As an ardent upper-class angler, Davy attempted to distance himself from peasants catching fish the same way, qualifying his observation by noting the peasants fly fished “though

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\(^{39}\) Paul Schullery has importantly argued that fishing cannot be separated into clear categories of sport, subsistence, or even science. Schullery uses the examples of the Washburn Expedition to Yellowstone in 1870, a party comprised of Montana territorial officials accompanied by a military detachment. The party fished their way through the region using a variety of artificial flies and baits. Some members brought along expensive eastern fly fishing tackle, while others made their own fishing poles from nearby willows and trees. Many in the expedition considered themselves sportsmen, but they did not hesitate to throw jabs at eastern sporting traditions. The sporting party also relied on the Yellowstone cutthroat trout and mountain whitefish they caught for food, especially towards the end of the trip. In addition, their descriptions of the area and its fish became part of the eastern scientific body of knowledge on Yellowstone. Thus, angling held multiple meanings: “Fishing was, for this or that subset of the party, a means of acquiring food, of testing one’s angling skill, of engaging in friendly competition with other sportmen, and of studying the natural world.” Schullery, *Cowboy Trout*, 57-96; 86.


\(^{41}\) See Schullery, *Cowboy Trout*, 57-86.

\(^{42}\) Andrew Herd, *The Fly* (Ellesmere, UK: Medlar Press, 2003), 33-34.
always with rude tackle.”43 Despite Davy’s attempts to slight lower class fly fishing, his observation illustrated the almost universal use of fly fishing in Europe.

Similarly, use of a hook and line was not restricted to Anglo or European peoples, or their colonists elsewhere. In Japan, peasants used the Tenkara tradition of fly fishing for centuries, and it was promoted among the warrior class during the Tokugawa period as a peacetime activity.44 Other cultures also fished with similar tackle. Long before the nineteenth-century fishing tackle revolution allowed Kipling to find refuge in nature on the Willamette River with his rod and reel, Chinese fishermen used the same gear. Ancient Chinese men occasionally fished with silk lines and bamboo poles.45 Later, they became responsible for developing fishing reels, centuries before European counterparts.46 The tackle may have been similar, but the meanings diverged. Kipling’s role justifying imperialism clouded his views toward other races and fishing cultures, setting up British traditions, including angling, as superior. Kipling’s contemporaries, too, strove to distinguish their sport—and, by extension, themselves—from non-white hook and line fishing.

In an era of rampant nationalism and imperialism among European nations and the United States, some British anglers took the opportunity to define their sport as more progressed. In A Handbook of Angling (1853, 3rd ed.), sporting writer Edward Fitzgibbon maintained that British citizens and colonists had perfected outdoor sports like angling, while fishing with a hook and line among other cultures lagged behind: “At first the modes of practicing it were exceedingly rude, and they still remain so amongst uncivilized nations.”47 Another compatriot acknowledged the widespread use of hook and line fishing throughout the world, but again

43 Davy, 299.
44 Herd, The Fly, 35.
46 Herd, The Fly, 67. One twelfth century Chinese painting depicts a fisherman using a rod and reel from a boat. Ibid.
47 Ephemera, 1.
differentiated between so-called “civilized” and “uncivilized” angling. To him, barbless hooks like the Inuit bone hooks displayed at the London Fisheries Exhibition of 1883 represented an inferior society: “Probably centuries of use and observation lay between the first hook and the hook which by an advance of thought was furnished with a barb.” To this British angler, barbed hook illustrated the supremacy of British men. Ironically, twentieth-century fly fishers incorporated barbless hooks into the conservation oriented catch-and-release fishing. Despite the efforts of some European anglers to uphold hook and line fishing as paramount to indigenous versions of the same activity, sometimes cultural syncretism produced new fly fishing techniques.

Native Americans occasionally employed fishing poles, lines, and various lures and baits. Their methods influenced American fly fishing. White anglers embraced the use of deer hair and hairwing flies, which stemmed from indigenous fishing techniques on eastern waters. Rocky Mountain fly fishers built on these roots, incorporating deer and elk hair into the western fly tying tradition that developed in the early twentieth century. The absorption of indigenous flies into mainstream American fly fishing illustrates the complicated development of sport, one not solely shaped by Euroamerican traditions, but rather one influenced by indigenous cultures

49 One of the earliest, and perhaps the most well-known, descriptions of Native American fishing—using artificial flies—comes from naturalist William Bartram. Bartram chronicled this bass fishing technique during his southern travels in 1774: “They are taken with hook and line, but without any bait…having a rod ten or twelve feet in length, to one end of which is tied a strong line, about twenty inches in length, to which is fastened three large hooks, back to back. These are fixed very securely, and covered with the white hair of a deer’s tail, shreds of red garter, and some particoloured feathers, all which form a tuft, or tassel, nearly as large as one’s first, and entirely cover and conceal the hooks; this is called a bob.” Quoted in Schullery, American Fly Fishing, 20. While cultural syncretism and the influence of colonists’ fishing techniques remains unclear in this particular example, using hook and line represented just one of the many indigenous fishing methods. Interestingly, Joe Brooks once related a story about fishing in Tierra del Fuego in Argentina and his host gave him a sort of bucktail fly made out of guanaco fur (an undomesticated relative of the llama) dating back to the mid-nineteenth century and tied by an Ona Indian. Joe Brooks, Trout Fishing (New York: Outdoor Life, 1972), 239.
and adapted due to local conditions and needs. This range of fishing traditions and the endgame of actually catching a fish ensured that angling could never be completely defined as sport.

Unlike baseball, tennis, golf, and many other games, angling evolved as a way to gather food. As angler-conservationists tried to remake the activity in the midst of the conservation movement, they could not quite control its use in the Rocky Mountains and elsewhere.

Sometimes, angling’s diverse practitioners had interesting meetings. At the turn of the century, American dry fly prophet Theodore Gordon had benefited from the modern tackle revolution and decades of exchanges between American and British anglers that refined the sport of fly fishing and placed it within a modern conservation tradition. Yet angling still could not be classified as an exclusive Euroamerican, middle- to upper-class fishing technique. Gordon related a story of a chance encounter along an upstate New York stream with a little African American girl: “[she] had been trying to open the trout season with a stick and a string. I did not wish to poach upon her pool, but as a matter of form, dropped my fly at the edge of the stone and not three feet from the small maiden’s toes. It was seized at once by a half-pound native [brook] trout, which had been lurking under her pedestal, and I am not sure who was more surprised, the child or myself.”

In Gordon’s eagerness to catch the trout, he encroached upon her spot, knowingly violating an unwritten code of sporting conduct, perhaps thinking the girl’s stick and string proved no match for his dry fly skills. Gordon’s story shows that despite all the sporting literature, hook and line fishing represented a simple and efficient way to catch trout, simultaneously existing as an elite sport and a rural pastime that put food on the table. The same diverse composition of people fished the Rocky Mountains in the nineteenth century.

By the end of the territorial period in 1889, western Montana had a mix of anglers. In

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1890, Missoula had a population of less than thirty-five hundred, but still boasted several stores that sold fishing tackle or trout flies, catering to the popularity of area fishing. Locals of all classes fished the adjacent Clark Fork and Bitterroot rivers. Lawyers, businessmen, politicians, and other leisure-class anglers fished in town, but also had more opportunities to go elsewhere, occasionally taking the train out of town on Sundays or spending a weekend or two in the Flathead region to fish. These local sportsmen formed the Missoula Rod and Gun Club in 1886, as a fraternal organization involved in conservation issues. Officers and enlisted soldiers out of Fort Missoula also frequently fished, and perhaps even some of the African American buffalo soldiers in the 25th Infantry Regiment stationed there in the 1890s. Sometimes, the soldiers went on family excursions; in August 1887 one newspaper reported that several of the fort’s officers “with a large party of ladies from the Fort, are encamped at the foot of Flathead Lake enjoying boating, fishing, bathing and shooting.” Missoula and Flathead area anglers came from diverse class and race backgrounds.

Salish, Pend Oreille, Kootenai, and other area natives fished on and off the Flathead Reservation at least into the 1890s. Furthermore, family fishing trips were not limited to whites. One tribal elder recalled that his grandmother was born in Missoula near the university in 1897 while her parents were camped along the Clark Fork fishing for bull trout. Salish and other native women also fished Flathead Lake and area rivers for food. In a rare documented instance, a woman from a Métis family found a dead body while fishing the Jocko River north of

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52 For example, see *Weekly Missoulian*, August 27, 1890.
53 *Weekly Missoulian*, October 21, 1887.
54 See Tamarack’s description in Marbury, 447-454.
55 *Weekly Missoulian*, August 19, 1887.
One of the best examples of the varied meanings and uses of fishing comes from sportsman and Flathead Reservation agent Major Peter Ronan. Ronan frequently took fishing excursions with fellow sportsmen, like a 1890 fishing and hunting trip with territorial politician and newspaper publisher Martin Maginnis. Like many other leisure-class anglers seeking to legitimize their sport and social standing, Ronan connected sport to civilization while deeming the subsistence fishing of area natives as uncivilized. As reservation agent, Ronan complained that the Kootenai tribe spent too much time hunting and fishing instead of taking up farming and attempting to assimilate into white society: “The Kootenais are a very improvident tribe, and spend most of their time gambling and wandering about. They live chiefly by hunting and fishing.” As Ronan placed significance on sport, he disregarded the same activity (catching and eating fish) among the Kootenai as a waste of time, not a civilized sport.

Amateur Indian enthusiast Frank Bird Linderman led an interesting life that also intersected with a variety of fishing traditions in the Flathead and Missoula areas. Known for collecting stories, traditions, and artifacts from Montana natives, Linderman advocated for the Rocky Boy Reservation’s creation for refugee Cree and Chippewa coming from the Riel Rebellion in Canada. He also had a career as a minor politician, perhaps known best for losing the state Republican primary to Jeannette Rankin, who then became the nation’s first woman representative. During his diverse life, Linderman encountered both sporting and subsistence angling among Montana natives and whites. Moving to the state as a teenager, Linderman started out as a trapper in the nearby Flathead Lake region, occasionally guiding leisure-class Missoula

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59 Weekly Missoulian, August 27, 1890.
and Helena sportsmen in the 1880s, including Missoula judge Frank Woody, one-time territorial
governor and banker Samuel T. Hauser, and other prominent Montana businessmen on sporting
excursions to the area.\textsuperscript{62} While in the Flathead, Linderman also learned about the fishing
traditions of the Salish and other local tribes. Part of his artifact collection includes a Salish line
and hook, made from palomino-colored horsehair wrapped around a manufactured metal hook.\textsuperscript{63}
This horsehair gear remarkably mirrored European and early American angling tackle before the late
nineteenth-century tackle revolution. Linderman even fancied himself as a sportsman,
frequently taking hunting and fishing trips with friend and cowboy artist Charles M. Russell in
the early twentieth century.\textsuperscript{64} As in other places throughout the world, the Flathead and Missoula
area possessed a variety of anglers during the late nineteenth and early twentieth centuries.

Angling has existed for thousands of years with surprisingly varied roots and practitioners, as Gordon’s encounter with the anonymous African American child and the popularity of fishing near Missoula illustrates. In the nineteenth century, however, middle- and upper-class anglers—and especially fly fishers like Gordon himself—positioned hook and line fishing within the nascent conservation movement. As these angler-conservationists attempted to assert their power, they came across other practitioners of hook and line fishing, illustrating how elite sport could only have limited control over others. Many of these leisure-class anglers sought to distinguish themselves from lower classes and other races through new fishing gear that came from the nineteenth-century tackle revolution.

**Modern Tackle and Techniques**

\textsuperscript{63} Artifact—“Flathead fish line with horse hair line and metal hook, circa 1885-1938,” Series IX, L35, MSS 007: Frank B. Linderman Memorial Collection, Archives and Special Collections, Maureen and Mike Mansfield Library, University of Montana-Missoula.
With angling as a widely practiced activity, many middle- and upper-class anglers sought to distinguish themselves through their fishing tackle and new consumer goods made possible through industrialization and world trade. Venturing west during the Colorado gold rush as a young lawyer, Lewis B. France spent decades fly fishing regional waters. During the 1880s onward, he promoted Rocky Mountain fish and fishing in sporting periodicals and books while simultaneously enjoying his fancy Hiram Leonard split-bamboo rod, innovative Orvis reel, and his role in re-creating eastern civilization along the Rocky Mountain front. If France’s expensive gear failed to signify his class position, he advertised it not so subtly with the pen name “Bourgeois.” Part of a leisure class, he upheld fly fishing as a “noble fellowship” that revolved around civilized sport. In defining sport and promoting conservation, France joined the transnational angling community connected to their distant peers through print culture. These anglers often used their new gear from the era’s tackle revolution (and also advertised in sporting books and periodicals) to separate themselves from the lower classes, immigrants, and other races they blamed for fish declines. In the mid-nineteenth century, “Uncle Thad” Norris observed the popularity of brook trout fishing among all classes in the East:

> No fish affords as much sport to the angler as the Brook Trout; whether he is fished for by the country urchin, who ties his knotted horsehair-line to his alder-pole, and ‘snakes out’ the speckled fellows by the caving-bank of the meadow brook, and from under the overhanging branches of the wooded stream; or by the scientific angler, who delivers his flies attached to his nine-foot leader—straight out and lightly—from his well-balanced rod, and kills his fish artistically.

The nineteenth-century tackle revolution, only enjoyed by those who could afford it, allowed a consumer leisure class to characterize their angling as vastly different from so-called country

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66 France, 13.

67 Norris, 194-195.
urchins and lower classes.

Industrialization remade humans’ relationships with the environment. Railroads and steam power increasingly interconnected the world in the nineteenth century. The transportation revolution shipped goods, people, and natural resources much faster than previous eras of human history that relied solely on animal power. In the Rocky Mountains, railroads linked minerals, timber, animals, and other resources to distant markets, all of which promoted western industry. Railroads also contributed to leisure, allowing western anglers to connect to their peers in the eastern United States and Europe while shuttling tourists west to find nature in the Rockies.

Industrialization and mechanization allowed gear makers to create precise rods, new reels and better hooks, while imperialism and global trade brought a dizzying array of exotic materials into use for rods, lines, and flies. In turn, the new gear changed the way people fished, providing for longer casts, new fishing techniques, and the rise of modern dry fly fishing. Nineteenth-century fly fishing, then, represented much more than a recreational activity in nature, it symbolized the ever changing ways the modern world shaped everyday life. In industrialized nations such as Britain and the United States, a growing middle class benefited from more leisure time and disposable incomes. For middle-class sporting types, that meant buying new fly fishing gear, which changed dramatically starting at midcentury due to industrialization and global trade. Victorian-era fly fishers drew pleasure from the unequal colonial trade, making birds,
animals, silkworms, and plants from far-off places into instruments to catch fish.

Flies (those bug puppets so important for catching trout) illustrated one aspect of fly fishing’s modern transformation because of the rise of industrial capitalism. Yet the term “bug puppet” fails to capture the complexity of fishing with flies. Flies are classed generally in two categories: imitators and attractors. Imitators resemble bugs, attractors do not, yet fish still take both. Why? Like all great philosophical quandaries—fly fishing or otherwise—this question continues to be debated. Popular in the nineteenth-century Atlantic world, fancy flies fall under the attractor category; they do not look like a natural insect, or much of anything really. If an imitator fly is an insect doppelganger, a fancy fly is a bug puppet on acid.

The Jock Scott, a well-known British fly pattern for Atlantic salmon, exemplifies the garishness that characterized mid- to late-nineteenth century fancy flies. The Jock Scott could hardly pass for an insect of any kind, flashing a mixture of silk, tinsel, and brightly-colored feathers from wild and domesticated birds native to five continents. On top of local materials, the pattern’s exotic feathers included those from toucan, red macaw, and blue macaw from South America; jungle cock and crow from India; black turkey, native to North America; bustard, which one expert believed the Indian and African species were superior to those from Europe; and Gallina, or guinea fowl, of which the best varieties reportedly came from the Philippines, Africa, and Madagascar. In addition to acquiring the tropical feathers, the multiplicity of other materials incorporated into the pattern required a large amount of artistry and skill from the fly


71 See Schullery, American Fly Fishing, 82.

72 By definition, fancy flies were not necessarily gaudy and colorful, but became more so in the mid-nineteenth century, Schullery, American Fly Fishing, 77.

tier. Once tied, the results proved to be an ostentatious show of empire on a hook. The Jock Scott’s popularity, however, lay mostly in the fact that it caught fish, not because it illustrated the empire’s strength.

Other effective nineteenth-century fancy fly patterns also boasted colorful components from the realm’s far reaches. One well-known London tackle maker listed over two pages of fly-tying materials that tiers needed in order to create various fly patterns. The items included both local and international birds and animals. More ordinary dressings came from the feathers of birds like chicken; mallard; pheasant; blue jay; as well as wool; pig hair; and rabbit fur. Yet the tackle maker specified that colorful feathers “of a most gaudy hue” made the best wings on salmon patterns. He identified bright, exotic feathers that came not only from the same ingredients as in the Jock Scott, but also from ostrich; scarlet Ibis; bird-of-paradise; parrot; and cock-of-the-rock. He also added other unusual furs, like black bear and sable, to the list. The sheer variety of materials available to Victorian fly tiers revealed the spatial inequalities produced by capitalism and new imperialism; like others in industrialized nations, anglers benefited from the exploitation of diverse environments. While these processes wrought change on a global level, they also contributed to national and regional changes, including modifications to fly tying.

While British and European fly fishers influenced American sport, by the mid-nineteenth century, American anglers had also developed their own sporting traditions and fly patterns. Mary Orvis Marbury’s seminal Favorite Flies and Their Histories (1892) first extensively documented these American fly tying practices. The daughter of Charles Orvis, the renowned

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tackle maker, Marbury relied on correspondence with anglers across the nation to record
commonly-used fancy flies from European patterns to newer, unique American bass flies that
used many of the same exotic feathers as the former.\(^{75}\) She recorded popular patterns used by
American anglers, providing readers with their histories, recipes, and tips for fishing. Colorful
illustrations of each fly highlighted the book, which contained dozens of plates that used
chromolithography, a relatively new method of mass producing color illustrations. Marbury
meant for the vivid prints and detailed descriptions to create conformity among fly patterns, at a
time when American locales became linked through transportation improvements and an
industrialized market economy.\(^{76}\) Within this more tightly-knit society, Marbury’s standardized
local varieties of flies provided practical information to American fly fishers. As a middle-class
white woman, her expertise in the sport—and those fancy flies she documented—provided
leisure-class anglers with a way to contrast their activity to the disdained subsistence and market
fishing of lower classes and different races. The fancy fly patterns themselves, like the Jock
Scott, depended on world trade and a bourgeois penchant for flair.

The dictates of fashion shaped the increasing globalization of trade and access to exotic
feathers for fly tying materials. For centuries, and especially during the late nineteenth century,
birds adorned fashionable women’s hats.\(^{77}\) The styles provided seventeenth-century British tiers
with ready access to flamingo, parakeet, and macaw feathers.\(^{78}\) With bird hats back in vogue
during the 1880s, middle-class Victorian women on both sides of the Atlantic could display their

\(^{75}\) Marbury, 5.
\(^{76}\) Alan Trachtenberg has called this Gilded Age transformation the “incorporation of America,” defining the post-
Civil War development of a truly national economy and society. Trachtenberg, 3. While Trachtenberg’s structural
approach presents an overly deterministic view of culture, it remains a useful concept to explain the era’s social and
economic changes.
\(^{77}\) Price, 58-59.
\(^{78}\) Herd, The Fly, 114.
status and femininity in the fashionable, yet outrageous, hats. Their male counterparts could simultaneously test their masculinity fly fishing for trout or salmon, while using an equally gaudy fancy fly pattern made from the same bird feathers native to far-off lands. To complicate matters, fly fishing formed a respectable pursuit for Victorian ladies, producing countless theoretical permutations on feathers, flies, hats, and gender roles for present-day imaginations. The passing strange uses for bird parts likewise pointed to the commodification of nature inherent in a global exchange. However, the popularity of fancy flies and bird hats ultimately waned by the century’s end. Notions of womanhood and morality led Victorian women to form Audubon clubs and rally to save the birds that sat on hats. The downfall of fancy flies, however, followed a different route. The rise of industrial capitalism also brought new raw materials for fly lines and rods, eventually leading to the dry fly revolution and the sport’s modern development, while making fancy flies passé. Rocky Mountain fly fishers like Lewis B. France joined in these advances to the sport.

Small changes to late-nineteenth-century tackle produced large transformations in fishing techniques. Tackle like tapered, dressed silk lines, better rod materials manufactured with industrial methods, and the development of reels ushered in modern dry fly fishing. Improved gear allowed anglers longer, more precise casting and with the widespread incorporation of false casts, fly fishers could cast dry flies upstream into the wind. Dry fly fishing represented an exciting method of floating flies on the water’s surface, letting anglers watch more of the action. While present-day fly fishers rarely use bamboo rods or silk lines, they directly inherited these techniques, upholding dry fly fishing to almost mythic proportions. Growing up in a religious Montana family, fly fishing’s bard Norman Maclean, once imagined that Christ’s disciples were

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79 Price, 57-58.
81 Herd, The Fly, 276-277, Schullery, American Fly Fishing, ch. 7.
fly fishermen, and “that John, the favorite, was a dry-fly fisherman.” This much-cherished dry fly tradition arose out of the tackle revolution caused by nineteenth-century industrialization and global capitalism.

The utilization of silk and silkworm gut in tapered fly lines and leaders marked a new era in casting. For centuries earlier, European and American anglers used horsehair braided and knotted together, similar to the Salish hook and line owned by Frank Bird Linderman. Easily obtainable from local sources, anglers often made their own lines from stallion tail hair (preferred over mares because urine weakened the strength of mare tail hair). Despite its handy acquisition, horsehair lines required multiple knots and the lines tended to fray, both of which hampered casting long distances. The growth of the European silk industry and fashionable middle-class silk clothing—like the stylish bird hats—brought fly fishers better line material. By the eighteenth and nineteenth centuries, European and American anglers slowly started incorporating silk into lines and silkworm gut into leaders, sometimes employing both silk and horsehair in the same line. Before the post-Civil War development of a large and sophisticated American tackle industry, one American guidebook suggested a mixed line of hair and silk, imported from London. Shortly thereafter, another American angler noted the increasing popularity of silk lines, which could be “imported from China, Spain, and Italy.” Coated with oil, dressed silk lines floated remarkably better than horsehair. Tapered and plaited by modern machines and strung onto modern rods, silk lines permitted nineteenth-century anglers to cast

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85 Herbert, 254.
distances unimaginable to their horsehair-flinging ancestors. Silk lines and the other trappings of the tackle revolution also granted leisure-class anglers a sense of superiority over the sport’s diverse practitioners. Like modern silk lines, tackle makers fashioned modern fly rods from exotic woods available through world trade.

In the mid- to late nineteenth century, trout rods became increasingly shorter and lighter, built with new materials such as greenheart and bamboo. Anglers could cast further with these new rods and refined tackle, changing the sport itself and how people fished. American anglers frequently fished with split bamboo rods. A type of grass, rod makers used bamboo species from Calcutta and later Tonkin. Alternatively, British anglers preferred greenheart rods, imported from imperial holdings in British Guiana, over split bamboo into the twentieth century. In addition to dynamic new materials, industrialization transformed the fabrication of rods. Split bamboo rod makers created amazing fishing instruments through better machinery and planing techniques that allowed them to remove rough bamboo nodes, split the cane into six strips, then glue it back together. Indeed, the era’s best rod makers, like the famed Hiram Leonard, applied advances in machinery and newer industrial techniques to their craft. While Leonard catered to an upscale clientele like Lewis “Bourgeois” France, other manufacturers mass produced split bamboo, making it more accessible to American anglers. With these new rods, fly fishers casted further and more accurately than before. Additionally, tackle makers took other cues from the machine age to refine hooks and create better reels.

Inventions abounded in an era of steel skyscrapers and railways, and growing industry in

87 Herd, The Fly, 241-247. Lines made from silkworm gut also had drawbacks, after fishing, they had to be strung, dried, and carefully dressed with oil again to ensure their longevity, Herd, The Fly, 245. The lines tended to rot or grow fungus easily and only after DuPont’s 1938 patent of nylon did anglers start using less time-consuming lines and leaders, Ernest Schwiebert, Trout (New York: E. P. Dutton, 1978), 1:762-763; Schullery, “Silkworm Gut,” 8.
88 Schullery, American Fly Fishing, 62.
91 Schullery, American Fly Fishing, 65.
the United States, England, and Germany. Typewriters, telephones, lathes, sewing machines all
promised to make life easier, so much so that one contemporary observer remarked that
mechanization was unbridled “like one of our mighty rivers.” In this era of rampant
industrialization, tackle makers produced better hooks and modern reels. They made stronger
hooks by using better finishing methods. One modern rediscovery, the eyed hook, made dry fly
fishing much easier. Previously, fly tiers tied silkworm gut directly onto the hook, then
constructed the fly, a cumbersome, not-so-durable method. One late-nineteenth-century dry fly
guru attributed successful dry fly fishing to eyed hooks: “Flies dressed on eyed-hooks float better
and with less drying than those constructed on the old system.” As with hooks, the modern
fishing reel came directly out of industrialization. Reels, like other mechanized inventions,
benefited from better machining and gears. Charles Orvis’s 1874 patent marked modern reel
technology as Orvis and his British and American counterparts designed reels that have changed
little since then. In this world of mechanized leisure, Richard White has observed that
Americans held an Emersonian outlook, embracing nature and machines at the same time:
“Emerson reconciled nature with the busy, manipulative world of American
capitalism…Emerson could simultaneously rejoice in the ability of the machine to subjugate and
control nature and in the spiritual truth and inspiration nature provided.” Holding an
Emersonian perspective, anglers embraced the machine-age inventions that transformed fishing.
Combined with other modern gear developments, eyed hooks and reels ushered in dry fly

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92 Quoted in Trachtenberg, 41.
94 Frederic M. Halford, Floating Flies and How to Dress Them: A Treatise on the Most Modern Methods of
Dressing Artificial Flies for Trout and Grayling with Fully Illustrated Directions and Containing Ninety Hand-
Coloured Engravings of the Most Killing Patterns Together with a Few Hints to Dry-Fly Fishermen (London:
Sampson Low, Marston, Searle, and Rivington, 1886), 2.
95 Schullery, American Fly Fishing, 69-70.
96 Herd, The Fly, 249-254.
97 White, 35.
fishing, the celebrated fishing method of Norman Maclean and favored disciples.

The rise of dry fly fishing ironically spelled the decline of showy fancy fly patterns and the need for exotic feathers. Fly fishers usually tied dry flies as imitators (insect doppelgangers) meant to mimic adult insects floating on the top of the water. Thus, the need declined for outrageous color schemes and exotic materials. Starting in the mid-nineteenth century, anglers on southern English chalk streams fished the modern dry fly, institutionalized with Frederick Halford’s 1886 publication of *Floating Flies and How to Dress Them.* Halford’s practical, no-nonsense approach provided readers with the basic knowledge to tie and fish dry flies. The patterns described and illustrated in the book lacked all resemblance to their fancy fly cousins. Smaller flies with olive, gray, and toned down colors dominated the plates and Halford explicitly stated dry fly fishing equaled the imitation of natural insects: “To define dry-fly fishing, I should describe it as presenting to the rising fish the best possible imitation of the insect on which he is feeding in its natural position.” The insistence on imitation meant fly tiers needed fewer exotic bird feathers. While Halford did mention some rare bird feathers, he privileged native birds and dyeing techniques. While the dry fly revolution came a bit later in the United States, it also quickly outdated colorful fancy flies.

Industrialization and new trade goods helped give rise to dry fly fishing. In America, the introduction of nonnative trout also prompted the dry fly’s use. As more selective feeders, the naturalization of European brown trout in many American waters required fly fishers to refine their techniques. In the Catskills, Theodore Gordon developed local dry fly patterns as he fished for both native brook trout and nonnative brown trout. Often deemed the father of

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99 Halford, 117.
100 Halford, 7-29.
American dry fly fishing, Gordon helped popularize the technique in eastern waters during the 1880s and 1890s. Contributing to both American and English sporting periodicals on fishing techniques and conservation, Gordon later addressed decline of exotic birds. He called for bird preservation, arguing that fly tiers only needed access to a handful of feathers “in spite of the many tropical birds mentioned in all of the old books on salmon fly dressing.” He believed that local and domesticated birds provided more use to fly tiers, especially to those creating dry flies. Gordon’s own fly patterns reflected this view. Dressed with a stripped peacock body, wood duck wings, and a dun-colored hackle, his Quill Gordon pattern imitated an adult mayfly of similar color. Somber by comparison, dry fly patterns quelled the need for flashy feathers while new lines, hooks, rods, and other tackle made it all possible.

Nineteenth-century European and American anglers embraced the new fishing tackle that arose out of industrialization and world trade. These improvements also allowed leisure-class anglers to set themselves apart from lower classes and other races, defining their sport and their gear as superior.

**Conclusion**

By the end of the nineteenth century, imperialism and industrial capitalism transformed the ways in which many people fished. These forces connected the Rocky Mountains with the rest of the world while aiding a tackle revolution that incorporated both new manufacturing techniques and colonial natural resources. Class inequalities manifested themselves in reshaping fly fishing gear—only affordable to some—while simultaneously allowing a leisure class in western nations to escape from the modern world into nature. Part of a transnational community, nineteenth-century anglers placed new meanings on their fishing methods and modern tackle, adding to a long history of angling. These anglers promoted conservation in periodicals,

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102 Gordon, 356.
newspapers, and books, contributing to the conservation movement from 1860 to 1900. Race, class, and national identity often veiled their legitimate concerns for fish life and the environment. Using gender and new gear from the tackle revolution, leisure-class anglers attempted to set their sport apart from lower classes, immigrants, and non-white races that relied on fish for food or cash. These sporting ideals provided the headwaters of conservation regulations and environmental changes in the Rocky Mountain West.

As the next chapter shows, anglers found conservation solutions in the growing power of governments, writing fisheries regulations based on their sporting ethics. Yet, on the local level, leisure-class anglers never entirely controlled or defined conservation, especially with the diverseness of angling. Shifting the scale to the local and regional levels demonstrates that the story of state conservation’s growth had a more democratic acceptance of some elements of the fish conservation agenda, notably the rise of the hatchery system and the regulations that reflected concerns of an earlier community-centered conservation ethic. In addition, the change wrought by state conservation took place slowly, helping to explain the democratic character of Rocky Mountain trout conservation by the mid-twentieth century.
CHAPTER TWO
TROUT EMPIRE

In 1885, a young Owen Wister traveled to a ranch on the Wyoming frontier to restore his health. From an elite eastern family, the recent Harvard graduate who befriended Theodore Roosevelt at the university, had not yet become a famous writer. After suffering an illness that resembled that pesky neurasthenia, Wister set off west to recover. He spent weeks hunting and fishing, wrangling, and drawing in the western experience. The expanse of country surrounding Medicine Bow and the characters he encountered there provided the material he later used to write *The Virginian* (1902). The novel helped to create the cowboy as the American archetype of freedom and rugged individualism.¹ Since then, the West has loomed large in American popular culture, allowing the nation to define itself through (white) progress, self-reliance, and freedom while obscuring the region’s complicated and contested development.

Despite Wister’s role in romanticizing western history, he witnessed the region amidst large economic, environmental, and social changes. During the nineteenth and early twentieth centuries, the Rocky Mountain West became swept up in a global rearrangement of people and power—and, incidentally, trout. Industrialization, improved transportation and communication networks, and the rise of global capitalism connected distant places to centers of power in western Europe and the eastern United States.² In part fueled by the need to bring far-off natural resources into production, new imperialism of the nineteenth century brought the growing strength of European nation-states to remote environments, while steam transportation carried

² For the connections between western natural resources and urban centers within a new capitalist geography, see William Cronon, *Nature’s Metropolis: Chicago and the Great West* (New York: W. W. Norton, 1991).
waves of European immigrants and tourists, along with trout and other various plants and animals, to colonized lands mostly in Africa and Asia. In the United States, the railroad shipped people, goods, and creatures to and from the Rocky Mountains.

During that first Wyoming trip, Wister accompanied his host, cattleman Major Frank Wolcott, to pick up cans of live bass and trout at the Medicine Bow rail station that they planned to plant in nearby streams. Wister described the unsuccessful journey home in his diary: “we started off across the plains at two o’clock. At three we discovered we had lost our way – but found it inside of thirty minutes. On the way home the sun killed the trout, but the bass survived…” Their attempt to stock streams failed even with willing labor and the railroad’s ability to annihilate space and transport live fish long distances. Yet, Wister’s story illustrates the early contours of a trout culture that involved not only the physical transformation of fish life, but also the composition of new meanings written onto these places. As part of an eastern elite also concerned with the ills of civilization and their own masculinity, Wister envisioned the West as a vanishing rugged frontier while using it as an outdoor playground. The latter simplified western history as equally as Wister’s cowboy hero. While fish never made an appearance in The Virginian, trout represented part of the late nineteenth-century story in which westward expansion and industrialization transformed nature and leisure in the Rockies.

Unlike the anti-democratic themes present within The Virginian, western fisheries show that the rise of state conservation was more democratic than most recent interpretations have

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3 Transcript of Owen Wister’s July-August 1885 Diary, p. 8, Box 1, Folder 1, Collection #290: Owen Wister Papers, American Heritage Center, University of Wyoming, Laramie [hereafter AHC].

argued.\textsuperscript{5} In Wister’s master work, the Virginian himself, the unnamed hero, emerged as a natural leader, an aristocratic cowboy in which Wister projected his class fears while attempting to naturalize class inequalities. The Virginian could wrangle cattle and lead men, just as the social status of Harvard-educated elites like Wister supposedly made them superior to lower classes.\textsuperscript{6} Conversely, the emergence of state-led conservation and the introductions of nonnative trout did not strictly come from an aristocratic class in the Rocky Mountains. Members of all classes resisted and violated fish laws and members of all classes supported the state conservation agenda. Like the real Johnson County War, in which the powerful Wyoming Stock Growers Association and their hired guns could never fully control local ranchers and their economy, western fisheries revealed a more complicated story of conservation and fish use that went far beyond the power and control of this aristocracy.

Industrialization and mining, the railroad connections to regional and national markets, and the immigrant character of many western communities put new demands on locally decided conservation sentiment. State-led conservation and community-centered conservation, however, were not necessarily incompatible. State-regulated fisheries conservation incorporated some local conservation concerns, such as overfishing and market use of resources. Many westerners also endorsed the use of hatcheries to maintain fish populations and helped state and federal fish culturalists introduce nonnative trout to the region. Above all, state fish conservation developed


gradually in the Rocky Mountain West; new laws and regulations therefore did not produce immediate, drastic changes to the lifeways of American Indians, settlers, and immigrants. In the long run, these characteristics garnered even more support for state conservation. An examination of fish conservation fills in certain historiographical gaps by adding to existing studies that have focused largely on hunting, the elite elements of conservation, or the lack of local control in defining state conservation.

In shrinking to local, territorial and state, and regional scales, a clearer picture arises of westward expansion and the creation of state conservation from the 1860s to the 1910s. During the territorial period, the first regulations that restricted fishing to hook and line reflected the complex history of angling with its common roots and sporting ideals, which could never be strictly top down. These primarily unenforced codes were meant to temper the market and subsistence fishing of settlers and natives, who shared similar fishing techniques in addition to angling. When not enforcing US Indian policies, military men also fished frequently, leading many officer-sportsmen to promote the region’s sporting opportunities and advocate for fish culture. The transformation of Rocky Mountain fisheries began as the western hatchery system and its accompanying regulations developed out of a transnational fish culture movement.  

Numerous private, state, and federal fish culturalists and enthusiasts introduced nonnative brook, rainbow, and brown trout, necessary ingredients in the later formation of a regional trout culture. Over time, this work led to lasting environmental effects, as Rocky Mountain waters developed into amazing nonnative trout fisheries. This chapter follows their attempts to physically and

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7 In *Making Salmon*, Joseph Taylor argued that hatcheries allowed the federal government, state agencies, and individual anglers to ignore habitat destruction associated with growing industrialization and resource extraction industries. Joseph E. Taylor III, *Making Salmon: An Environmental History of the Northwest Fisheries Crisis* (Seattle: University of Washington Press, 1999), ch. 3. Regulations, however, accompanied hatchery work as fish culturalists encountered environmental degradation firsthand through their work and often called for stricter water pollution laws and timber cutting regulations.
culturally rewrite the western landscape, starting with the first conservation laws passed in the territorial period.

Hook and Line Laws

The earliest fish conservation regulations in the Rocky Mountains show how local conditions shaped transnational sport and conservation. Territorial legislatures passed the first regulations that limited fishing, especially for trout and other game fishes, to use of a “rod and line” or “hook and line.” These hook and line laws, which limited catches to one fish at a time, reflected the sporting ideals and political influence of a transnational angling community. Angling, however, always had varied users and meanings; hook and line laws then sometimes simply mirrored community values in some locales. With the growth of a transnational angling fellowship, similar conservation regimes sprouted up throughout American territories and states (the government entity responsible for fish and game regulations) and the British realm.

Anglers wished to control fisheries through hook and line laws based upon sporting ideals. Some of the earliest manifestations came from eastern states. Ardent fly fisherman and silver-tongued politician Daniel Webster passed an 1822 Massachusetts law that prohibited fishing for brook trout with all but hook and line. As the sole bill introduced in his term as a state legislator, the sporting statute represented Webster’s angling ethics, a sentiment shared by anglers throughout the world. In Britain, where fish conservation came more from private landowners than the state, hook and line regulations existed only as informal ordinances. With the increasing popularity of nineteenth-century sport fishing, landowners found more money in charging elite anglers and middle-class sporting clubs than in renewing fishing leases for commercial fishermen using nets, weirs, and other gear. Middle-class angling clubs often rented

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waters, unable to afford individual leases on prime trout and salmon waters.\(^9\) Often these clubs fixed rules as to the gear and methods, some of which became highly specific and restrictive over time. Some clubs, for instance, now only allow members to fish upstream with a dry fly.\(^10\)

Angling regulations controlled alternatively by the state or by more private interests also manifested themselves in British colonies, brought by British settlers.

In the British Empire, conservation varied by colony. In New Zealand, where local acclimatization societies principally controlled fish and game matters, regulations also bore the sporting ethics of the settlers who comprised these societies. In addition to importing new flora and fauna, acclimatization societies enacted hook and line laws, regarding other methods and devices as “unsportsmanlike.”\(^11\) In India, settlers used state power to set forth a fish conservation agenda but, like elsewhere, it reflected sporting ethics. Colonial officials often considered themselves sportsmen and criticized traditional indigenous uses of wildlife as unsporting and destructive. One official called for more state regulation over freshwater fisheries, lamenting both the resistance of other colonial officials and the techniques used by local fishers: “Every device that can be imagined is now called into action…the rivers are denuded of fish, so far as human agency can contrive it.”\(^12\) Prejudices such as these became incorporated into later conservation codes. Another colonial official wrote both sporting books and fisheries regulations


in India. One of the first laws, the Bengal Act II of 1889 allowed angling, but limited public access to fisheries, laying the foundation for later laws. Subsequent laws that included the entirety of India outlawed dynamite and poison, legalizing nets.\textsuperscript{13} Angling laws within fish conservation showed the prejudices and inequalities inherent in imperialism. However, the use of hook and line fishing was not limited to nineteenth-century imperialists in the British and American empires. Widespread angling for sport and subsistence meant that conservation hook-and-line laws could only try to temper larger fish catches, not outlaw fishing altogether. In the Rocky Mountains, the point remained moot, as the laws went mostly unenforced during the territorial era.

As American expansion progressed and people started settling the inland West, driven by gold strikes in the Rocky Mountains, territorial assemblies laid the foundation for the later development of a trout culture. Early on, territorial legislatures enacted laws that restricted fishing methods to the use of a hook and line. Soon after one hundred thousand miners overran Colorado gold fields, the newly-created Colorado territory outlawed fishing by “seine, net, basket, or trap” in 1861 and clarified the law in 1872 to prohibit fishing for cutthroat trout with all but hook and line.\textsuperscript{14} Aimed at native fishing techniques, this first law attempted to limit the indigenous fishing with government regulations. Not so coincidentally, the “Bourgeois” writer


Lewis B. France served as a clerk to the House Judicial Committee in that first legislature. Neighboring territories followed Colorado’s lead in territorial fish conservation, using similar language. Wyoming Territory enacted a hook and line law in 1869. Utah’s 1876 territorial legislature restricted fishing to “hook and line not exceeding three hooks to a line.” Attempting to control fish destruction, territorial legislators turned to these early manifestations of fishing regulations. The laws indicated that western residents transformed non-local conservation and sporting ideals to meet territorial conditions.

Early Montana settler Granville Stuart illustrates the role of locals in territorial era conservation. At Montana’s first territorial capital of Bannack, no more than a muddy, ramshackle mining camp that sprung up near the rich gold deposits along Grasshopper Creek, the first legislature outlawed the use of nets, seines, and poisonous substances. The law also stated that “a rod or pole, line and hook, shall be the only lawful way trout can be caught in any of the streams of the territory.” Stuart represented Deer Lodge County in that first legislature. However, his role in passing the regulation remains unclear. Brothers Granville and James Stuart occasionally fished, among their various other pursuits as early Montana settlers. The Stuarts laid claim to one of the first gold strikes in southwestern Montana (then part of Washington Territory). Common during the territorial period, Granville Stuart wore a variety of hats, in this

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16 Photocopy of the Laws of Wyoming, 1869-Chapter 12, “An Act for the Protection of Game and Fish in the Territory of Wyoming,” Box 16, Folder 9, Collection #10483: Neal L. Blair Papers, AHC.
case holding territorial offices, mining, mining the miners, trading, running cattle, playing
vigilante, and writing pioneer history.\textsuperscript{19}

As their joint diary reveals, the Stuarts also liked to fish. Granville recorded that they
observed the Fourth of July, 1863, by feasting on trout: “James and Clabber, our Indian horse
herder, caught twenty-five large trout and we celebrated the national day by having a fine dinner
with trout as the principal dish.”\textsuperscript{20} A couple days later, Granville himself fished with
grasshoppers as bait, catching thirty-five trout.\textsuperscript{21} The diary says nothing about the type of gear,
but the brothers and their horse herder certainly used a baited hook and line. The cultural mixing
through fishing, marriage (both Stuart brothers married and later left native women; Granville
had a long-lasting marriage and eleven children with a Shoshone woman and James had
numerous relationships and children with native and métis women), and other territorial
activities confirmed that race was less important before statehood.\textsuperscript{22} During the fur trade and
territorial eras, race mattered less, as marriages between white men and native women helped
with trade and good relations with neighboring tribes.\textsuperscript{23} These exchanges mirrored the
interchanges of fishing and conservation among diverse groups.

As territorial elites, Stuart and others brokered sporting values on a local level.\textsuperscript{24} Briefly
living in Helena in the early 1880s, he worked for longtime friend, banker, sportsman, and later
territorial governor Samuel T. Hauser. While there, Stuart served as president of the Helena Rod

\textsuperscript{19} See Clyde A. Milner II and Carol A. O’Connor, \textit{As Big as the West: The Pioneer Life of Granville Stuart} (New
York: Oxford University Press, 2009). Granville Stuart’s published diary and reminiscences mention nothing about
fish conservation, but rather read as pioneer history writ large.
\textsuperscript{20} \textit{Forty Years on the Frontier As Seen in the Journals and Reminiscences of Granville Stuart, Gold-Miner, Trader,
\textsuperscript{21} Stuart, 249.
\textsuperscript{22} Milner and O’Connor, 65-68.
\textsuperscript{23} Elliott West has noted that interracial marriage declined towards the end of the territorial period. Unlike the fur
trade, new western industries like mining and ranching had little reason to cultivate friendly relationships with
natives, West observed that “Interethnic marriage, then, changed almost immediately from a proud social asset to the
badge of a pariah.” West, 185-191; 187.
\textsuperscript{24} For more on the role of local elites in conservation, see Benjamin Heber Johnson, “Conservation, Subsistence, and
and Gun Club and became concerned with the decline of bison and the widespread hide trade.\textsuperscript{25} During that same time period, Stuart also introduced a failed bill that would have established the state’s first fish hatchery.\textsuperscript{26} Stuart’s involvement in conservation shows sporting values may have informed territorial conservation, but it was a complicated situation of fish use and conservation, especially since the early hook and line laws went largely unenforced. Consequently, fish conservation in the inland West emerged as local people and conditions transformed elite sporting ideals in the rise of state conservation.

While expressing sporting ideals within the conservation movement, hook and line laws also reflected community values in some locales. One US Fish Commission scientist noted that at Panguitch Lake, Utah, Mormon settlers had self-imposed hook and line regulations, prohibiting other methods “by common consent.”\textsuperscript{27} The widespread roots of angling ensured that the fishing method could have simultaneous meanings. The value of Bonneville cutthroat as food prompted settlers to regulate their own subsistence and market use, in this case, only allowing settlers to take one fish at a time. The community-centered angling rules reveals an interesting sharing of conservation ideals among classes, one that has mainly been ignored in the new conservation history. To the scientist who reported the common hook and line law, however, the regulations on methods proved inadequate: “This, however, is no hardship, since large captures are easily made with the hook, I myself having taken from thirty to forty pounds weight in a single hour’s fishing.”\textsuperscript{28}

\textsuperscript{25} Milner and O’Connor, 153; 173. For more on Hauser and his business dealings, see William G. Robbins, \textit{Colony and Empire: The Capitalist Transformation of the American West} (Lawrence: University Press of Kansas, 1994), ch. 6.
\textsuperscript{26} Pat Munday, \textit{Montana’s Last Best River: The Big Hole and its People} (Guilford, CT: Lyons Press, 2001), 100.
\textsuperscript{28} Yarrow, 366.
fish populations, territorial hook and line laws represented an attempt to control market fishing and what was seen as more destructive fishing methods of the lower classes and indigenous fishers. However, they were weak laws and may not have been as transformative and controlling as recent historical interpretations of the conservation movement have defined in the rise of state conservation.

Other Fishing Methods

Fishers did not always have the luck of the US Fish Commission investigator who took thirty to forty pounds of fish in one hour. Indeed, one adage reflects the sometimes difficult sport: “That’s why they call it ‘going fishing’ instead of ‘going catching.’”29 For lower class and indigenous people, the catching was seemingly more important than the fishing and they employed a variety of—and remarkably similar—fishing methods, from hook and line to net and dynamite. As conservationists redefined angling in the nineteenth century, they classified other traditional and not-so-traditional fishing techniques as illegal poaching. Based upon sporting ideals that championed angling, lawmakers defined fishing methods in an attempt to effectively control the catching.

From the 1860s to the 1910s, dynamite represented a popular and effective fishing method, especially for miners and railroad workers who had ready access to explosives. One Colorado angler complained that explosives had “nearly depopulated the waters” by 1889.30 Another elite sportsman worried about its use in Wyoming: “Not satisfied with destroying the game, the greedy settlers are ruining the fishing in Snake River.”31 And at the turn of the twentieth century, Utah officials still listed dynamite as one of the major factors that impeded

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their fish cultural work. Native Americans also sometimes used explosives. One unspecified band raised the ire of eastern sportsmen by spending a summer in the 1880s along Lake Pend Oreille dynamiting fish for regional city markets. The popularity of dynamite as a fishing method helps to explain the hook and line laws coming out of territorial legislatures. Middle- and upper-class sportsmen also sought to limit the variety of other fishing modes of lower class settlers and Native Americans.

Besides dynamite, settlers occasionally used nets, seines, and weirs to capture fish. One early Yellowstone tourist complained that locals used spears and nets to catch trout from Henry’s Lake, perhaps exaggerating—as fishermen do—that six hundred to seven hundred pounds of fish were taken nightly by spearing. In another case, locals near Leadville, Colorado, used pitchforks (a modern take on a trident?) to catch spawning yellowfin cutthroat trout running into the streams from Twin Lakes. Indigenous and Euroamerican fishers shared many common fishing techniques like dynamite, nets, weirs, and hook and line, since the catching always had more value than the fishing.

Before and after the territorial era, western tribes often supplemented their hunting and gathering with fishing. Within the diverse cultures of the Rocky Mountains, indigenous fishing varied greatly from place to place, but all came under the influence of state conservation and sporting ideals. The amount of indigenous fishing depended on location and access to fish. The Crows of central Montana rarely fished, but occasionally added fish to their buffalo diet or ate

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32 John Sharp, *Fourth Biennial Report of the State Fish and Game Commissioner, To the Governor and the Fifth Session of the State Legislature of Utah, For the Years 1901 and 1902* (Salt Lake City: Star Printing Company, 1903), 29-30.
34 This somewhat parallels events in Scotland, where Andrew Herd notes the rise in popularity of sport fishing for salmon drove those who fished for a living off waters and that prior to 1850 “the vast majority of salmon were trapped, netted, or speared.” Herd, 215.

Comparatively, Idaho tribes who lived along anadromous salmon and steelhead runs developed more of a fishing culture and obviously ate and traded more fish. The Lemhi Shoshone-Bannock practiced diverse methods from spears and gorges (straight hooks that would gorge a fish, used with or without bait) to traps, weirs, and baskets, as well as baited bone and wood hooks. They also traded dried fish with regional neighbors like the Crow, Flathead, Wind River Shoshone-Bannock, Northern Paiute, and occasionally the Nez Perce.\footnote{Deward E. Walker, Jr., *Lemhi Shoshone-Bannock Reliance on Anadromous and Other Fish Resources*, Idaho Bureau of Land Management Technical Bulletin No. 94-4 (Boise: Bureau of Land Management, April 1994), 218-232.}\footnote{Clifford Duncan, “The Northern Utes of Utah,” in *A History of Utah’s American Indians*, ed. Forrest S. Cuch (Salt Lake City: Utah State Division of Indian Affairs and the Utah State Division of History, 2000), 174.}\footnote{William F. Sigler and John W. Sigler, *Fishes of the Great Basin: A Natural History* (Reno: University of Nevada Press, 1987), 19.}\footnote{Sigler and Sigler, 19, Farmer, 26. For guddling or tickling, see Sheridan Anderson, *The Curtis Creek Manifesto: A Fully Illustrated Guide to the Strategy, Finesse, Tactics and Paraphernalia of Fly Fishing* (Portland: Frank Amato, 1978), 41. Guddling and tickling is not to be confused with noodling, a technique used for catfish, where your hand is used as bait and when the fish grabs it, you pull it out of the water, hoping not to lose a finger or get dragged underwater in the process.}\footnote{William C. Harris, *The Angler’s Guide Book and Tourists’ Gazetteer of the Fishing Waters of the United States and Canada* (New York: The American Angler, 1885), 56: 114. Tina Loo notes that in Canadian wildlife conservation, “Resistance was not the only response to the imposition of government conservation initiatives.} In the Bonneville Basin, Ute bands also relied a great deal on fish and described themselves by location or food; near Utah Lake they defined themselves as “fish eaters” and the Sevier Lake band, “close to water.”\footnote{Deward E. Walker, Jr., *Lemhi Shoshone-Bannock Reliance on Anadromous and Other Fish Resources*, Idaho Bureau of Land Management Technical Bulletin No. 94-4 (Boise: Bureau of Land Management, April 1994), 218-232.}\footnote{William F. Sigler and John W. Sigler, *Fishes of the Great Basin: A Natural History* (Reno: University of Nevada Press, 1987), 19.}\footnote{Sigler and Sigler, 19, Farmer, 26. For guddling or tickling, see Sheridan Anderson, *The Curtis Creek Manifesto: A Fully Illustrated Guide to the Strategy, Finesse, Tactics and Paraphernalia of Fly Fishing* (Portland: Frank Amato, 1978), 41. Guddling and tickling is not to be confused with noodling, a technique used for catfish, where your hand is used as bait and when the fish grabs it, you pull it out of the water, hoping not to lose a finger or get dragged underwater in the process.}\footnote{William C. Harris, *The Angler’s Guide Book and Tourists’ Gazetteer of the Fishing Waters of the United States and Canada* (New York: The American Angler, 1885), 56: 114. Tina Loo notes that in Canadian wildlife conservation, “Resistance was not the only response to the imposition of government conservation initiatives.} The Fish Eaters ate Bonneville cutthroat trout, Utah suckers, June suckers, and Utah chubs.\footnote{Deward E. Walker, Jr., *Lemhi Shoshone-Bannock Reliance on Anadromous and Other Fish Resources*, Idaho Bureau of Land Management Technical Bulletin No. 94-4 (Boise: Bureau of Land Management, April 1994), 218-232.}\footnote{William F. Sigler and John W. Sigler, *Fishes of the Great Basin: A Natural History* (Reno: University of Nevada Press, 1987), 19.}\footnote{Sigler and Sigler, 19, Farmer, 26. For guddling or tickling, see Sheridan Anderson, *The Curtis Creek Manifesto: A Fully Illustrated Guide to the Strategy, Finesse, Tactics and Paraphernalia of Fly Fishing* (Portland: Frank Amato, 1978), 41. Guddling and tickling is not to be confused with noodling, a technique used for catfish, where your hand is used as bait and when the fish grabs it, you pull it out of the water, hoping not to lose a finger or get dragged underwater in the process.}\footnote{William C. Harris, *The Angler’s Guide Book and Tourists’ Gazetteer of the Fishing Waters of the United States and Canada* (New York: The American Angler, 1885), 56: 114. Tina Loo notes that in Canadian wildlife conservation, “Resistance was not the only response to the imposition of government conservation initiatives.} The access to numerous fish meant the band consumed double the amount of fish as other Ute bands in western Colorado. Like other indigenous techniques, the Fish Eaters caught fish with nets, baskets, weirs, spears, and arrows. They also grabbed them with their hands (contemporarily known as guddling or tickling).\footnote{William F. Sigler and John W. Sigler, *Fishes of the Great Basin: A Natural History* (Reno: University of Nevada Press, 1987), 19.}\footnote{Sigler and Sigler, 19, Farmer, 26. For guddling or tickling, see Sheridan Anderson, *The Curtis Creek Manifesto: A Fully Illustrated Guide to the Strategy, Finesse, Tactics and Paraphernalia of Fly Fishing* (Portland: Frank Amato, 1978), 41. Guddling and tickling is not to be confused with noodling, a technique used for catfish, where your hand is used as bait and when the fish grabs it, you pull it out of the water, hoping not to lose a finger or get dragged underwater in the process.} Other western tribes also incorporated fishing into their seasonal subsistence activities. In addition to subsistence fishing, some natives guided tourists or engaged in market fishing.\footnote{William C. Harris, *The Angler’s Guide Book and Tourists’ Gazetteer of the Fishing Waters of the United States and Canada* (New York: The American Angler, 1885), 56: 114. Tina Loo notes that in Canadian wildlife conservation, “Resistance was not the only response to the imposition of government conservation initiatives. Some
of these catching techniques. The loose enforcement and treaty fishing rights made fishing in its various forms less controlled than hunting, revealing that fishing was subject to different conditions compared to recent interpretations that have centered on hunting.\textsuperscript{43}

Both settlers and natives used fish for food, or to earn extra money by guiding or selling fish in regional markets. Depending on the specific group, both incorporated traditional cultural, and arguably religious, aspects into the activity. The difference lay in the fact that settlers had the strength of the nation-state behind them during westward expansion. Yet, state control over natural resources and people remained incomplete during the territorial era, in spite of a large military presence.

**Fishing Like a State**

In the West, agents of empire proved to be zealous anglers. The officer-sportsmen, as well as the enlisted men, stationed at western garrisons like Fort Laramie and Fort Missoula fished enthusiastically during and after the territorial period.\textsuperscript{44} Throughout the Rocky Mountains, fishing provided recreation near remote outposts as well as varied food on long marches.

“Tamarack,” one of the many military men that corresponded with Mary Orvis Marbury about American fly patterns, reported the excitement that fishing generated among his company during


\textsuperscript{44} For the officer-sportsmen “type,” see Paul Schullery, *American Fly Fishing: A History* (New York: Lyons Press, 1987), 21.}
a march from Utah to Fort Missoula in 1877. After seeing pools of trout in one encampment
along the Snake River, the men rushed to get their gear: “Immediately every one [sic] who had a
hook and line hunted them up, picked up the first stick he could find for a ‘pole,’ and got ready
for business; but there were neither flies nor hoppers to be had.” While the other men used salted
pork for bait, Tamarack improvised with a piece of red yarn, catching one small trout (native
Yellowstone cutthroat trout). He then cut it up for bait to catch fourteen more trout, seeming to
relish both the trout dinner and, in a competitive spirit, the jealousy of the company’s less
successful fishermen.\(^{45}\) While regulars enjoyed fishing for the food, sport, and spirited rivalry,
elite officers appeared more likely to contribute to national sporting periodicals on western
aspects of natural history and fish life, angling methods, and conservation.

Soldiers stationed in the West wrote regularly in eastern sporting periodicals like *Forest
and Stream*. Some of the first regional boosters, they extolled western fishing and hunting
opportunities. Stationed at various western posts, army major, sportsman, and bird collector
Major Charles Bendire routinely shared his western experiences with an eastern audience.\(^{46}\)
During the Bannock War of 1878, Bendire traveled through central Idaho and the headwaters of
the Salmon River. He described the region in terms of sporting prospects: “The upper Salmon
River country must be a sportsman’s paradise, both as regards fish and game…”\(^{47}\) Another
officer-sportsman used his time near Lake Coeur d’Alene to glorify the area’s natural attractions
in a two-part article. To him, the lake offered excellent fishing with abundant types of fish,
stating “The catch is often fabulous.”\(^{48}\) From the viewpoint of officer-sportsmen who promoted

\(^{45}\) Mary Orvis Marbury, *Favorite Flies and Their Histories* (1892; repr., Guilford, CT: Lyons Press, 2001), 447-449.
\(^{46}\) For more on Bendire, see his obituary in *Forest and Stream* 48, no. 7 (Feb. 13, 1897): 122.
\(^{47}\) Letter to Editor from Chs. Bendire, *Forest and Stream* 12, no. 8 (Mar. 27, 1879): 154.
\(^{48}\) Monmouth [Major E. August Egbert], “The Land of the Pointed Heart, Number One,” *Forest and Stream* 12, no.
7 (Mar. 20, 1879): 123. The second part of the article is found in *Forest and Stream* 12, no. 8 (Mar. 27, 1879): 143-
144. For angling pseudonyms, see Robert Kohrman, “Checklist of Angling Pseudonyms,” *American Fly Fisher* 13,
western sport, the region offered virgin sporting opportunities and native inhabitants used little of
the land’s bounties. Their writings helped popularize the Rocky Mountains as a place for play
and as a tourist destination. Officer-sportsmen’s role in promoting western fishing, however,
grew beyond boosterism. Conquest also brought about environmental change and the
introductions of nonnative trout.

Not surprisingly, as enthusiastic anglers, officer-sportsmen promoted western fish
culture. One of the earliest Montana trout plantings took place near Fort Assiniboine around
1880, when soldiers reportedly stocked Beaver Creek, a favorite destination for them and their
families to go on picnic and camping outings.49 Acting superintendent of Yellowstone National
Park—and angler—Captain Frazier Boutelle personally took responsibility for the development
of fish culture there. An invitation to US Fish Commissioner Marshall McDonald to visit the
park in 1889 led to US Fish Commission scientific studies and trout introductions. David Starr
Jordan explained that McDonald believed more trout would attract visitors to Yellowstone: “It
was made very evident from the observations of the Commissioner that much could be done
towards enhancing the attractions of the great national park ‘pleasuring ground’ by the stocking
of those of its various streams and lakes which are now destitute of fishes.”50 While 40 percent of
the park’s waters did not originally contain fish, trout introductions led to more fishing

49 Al Lucke to William Alvord, 14 February 1969, Box 1, Folder 3, RS 261: Montana Fisheries Division Records,
Montana Historical Society, Helena [hereafter MHS].
the Interest of the United States Fish Commission,” Fishery Bulletin 9, no. 1 (1889): 41,
http://fisherybulletin.nmfs.noaa.gov/9-1/jordan1.pdf (accessed November 15, 2010). In August and September,
1889, federal officials introduced brook, rainbow, and brown trout into the park as well as transplanted mountain
whitefish and Yellowstone cutthroat trout from neighboring streams to barren waters. Ibid., 46-61.
opportunities for tourists. Officer-sportsmen represented the vanguard in the transformation of Rocky Mountain waters. Oddly enough, fishing even played a role in western campaigns.

During the 1876 Sioux War, General George Crook’s column marched north from Wyoming’s Fort Fetterman in part of a three-column search for the Sioux and Northern Cheyenne. As with any enthusiastic sportsman taking a trip to trout country, Crook brought along his gear, in this case expensive split bamboo rods. Throughout the campaign, the troops fished during seemingly every spare moment so much so that a captain in Crook’s command called several of the other officers “trout maniacs.” He noted, however, that fishing was not confined solely to a few enthusiasts: “they had many followers in their gentle lunacy, which, before the hot weather had ended, spread throughout the whole command.” The fishing continued even after meeting warriors led by Crazy Horse at the Battle of the Rosebud.

Both sides suffered casualties in the battle and while Crook’s column went back to their previous camp on Goose Creek to wait for reinforcements, the Sioux and Northern Cheyenne fighters joined the larger force at the Little Bighorn River. At the same time Custer and the 7th Cavalry met their demise, Crook’s men were hauling in loads of cutthroat trout at Goose Creek, leading historians to speculate on the battle’s outcome, had Crook not spent his time after the Battle of the Rosebud waiting for reinforcements and, of course, fishing. At the Battle of the Little Bighorn, Captain Frederick Benteen’s leadership saved the other half of Custer’s command from meeting the same fate. An avid fly fisherman, Benteen also saw fighting in the Nez Perce War the following year. Incredibly, at the Battle of Canyon Creek he led a cavalry charge armed

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52 John H. Monnett, “Mystery of the Bighorns: Did a Fishing Trip Seal Custer’s Fate?” *American Fly Fisher* 19, no. 4 (Fall 1993): 2.
54 Owens, 59.
with only a fly rod, apparently a first and last for military history, reminiscent more of a MASH episode than a serious skirmish.\textsuperscript{55}

The intersections of fishing and army life provide an interesting aside to the transformation of western watersheds. Yet, as enforcers of a federal policy aimed at dispossessing and assimilating Native Americans, the western military presence opened the door for settlement and played a role in the rise of state conservation. officer-sportsmen promoted western conservation and helped introduce trout to the region, becoming important agents of western environmental change. Their promotion of conservation and fish culture echoed the larger growth in hatchery activities after the 1860s and 1870s.

**Hatcheries**

A trout culture needs loads of trout. The Rocky Mountain trout culture stemmed from national and transnational growth of hatcheries and the artificial propagation of fish starting in the mid-nineteenth century. Fish culturalists and the general public saw hatcheries and fish stocking as a key solution to declining fish populations, becoming the foundation of fish conservation throughout the world by the early twentieth century. Starting in the mid- to late-nineteenth century, the development of a massive western hatchery system transformed the fish life in Rocky Mountain waters, largely based upon three reasons: the ease of propagating trout; Euroamerican sporting traditions that valued trout; and the concept of the interchangeability of trout species in nineteenth-century conservation.

The introduction of nonnative trout to the Rocky Mountains hinged on a long history of fish culture. Fish culture previously existed for thousands of years, but the nineteenth-century development of hatcheries and the artificial propagation of fish marked a new way of producing

\textsuperscript{55} Richard Lessner, “How Meriwether Lewis’s Cutthroat Trout Sealed Custer’s Fate at the Little Bighorn,” American Fly Fisher 36, no. 4 (Fall 2010): 17.
fish for human use. Ancient Chinese, then Romans, and their later counterparts often raised fish in ponds or transported live fish to different waters. Artificial propagation of fish separated hatcheries from these early fish culture efforts. All hatcheries operated in similar ways. First, fish culturalists captured live spawning fish from the wild and took their eggs or milt (fish sperm). After collecting and mixing the eggs and milt, fish culturalists either shipped the fertilized eggs elsewhere or incubated them in a controlled environment with running water. The water temperature depended on the species of fish. After hatching, the small fish (alevins) fed off yolk sacs attached to their body but, as they grew, the yolk sac disappeared and the small fish (now called fry) needed to be fed at the hatchery. Fish culturalists then planted the fry into depleted waters. Hatcheries also kept their own brood stocks of adult fish in larger ponds or raceways at the hatchery for later egg and milt collection, while supplementing frequently these stocks with egg collection from the wild. Hatcheries required clean running water, a fair amount of daily labor, fish food, and a belief in the human superiority over nature. Hatcheries could transform nature’s perceived inefficiency into a veritable fish factory (France’s first state hatchery was literally called a “piscifactoire”57). This production method for fish became incorporated into the conservation agenda along its associated regulations in the Rocky Mountains and elsewhere, although conservation represented just one of the varied goals of fish culturalists.

Guided by a firm belief in progress, US fish culture enthusiasts first promoted hatcheries for repopulating depleted waters, increased profits to agricultural producers, and a food source

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56 For an in-depth description of one of the earliest US hatchery experiments along with a description of French methods and early experiments in other European nations, see Theodatus Garlick, *A Treatise on the Artificial Propagation of Certain Kinds of Fish with the Description and Habits of Such Kinds as are the Most Suitable for Pisciculture* (Cleveland: Tho. Brown, 1857), 5-64.
57 Darin Kinsey, “‘seeding the water as the earth’: The Epicenter and Peripheries of a Western Aquacultural Revolution,” *Environmental History* 11, no. 3 (July 2006): 535.
for the growing nation. The promises of the hatchery system prompted a rise in popularity. A reverend turned fish culturalist, Livingston Stone saw fish culture as less of a factory system and more of an animal husbandry technique in which producers could profitably raise trout for market and bring down food prices.\(^5^8\) On top of money-making potential, early conservationist and sporting writer Robert Barnwell Roosevelt and prominent fish culturalist Seth Green believed that fish culture could save declining fish populations.\(^5^9\) The lucrativeness of hatcheries prompted a rise in private efforts during the mid-nineteenth century, including a venture from Samuel Colt, whose Colt .45 took on legendary proportions in the West, but his mid-nineteenth century construction of a Connecticut hatchery received comparatively little notice as one of many such establishments.\(^6^0\) Private hatcheries played an important role in fish production as well as the transformation of fish life, but government operations started to eclipse private hatchery operations by the 1880s and 1890s.

Starting in France during the mid-nineteenth century, the use of hatcheries spread throughout the world by the century’s turn. As in France, US hatcheries also became a government enterprise, connected to nationalism and the rhetoric of national greatness and economic independence in trying to feed a growing nation during the nineteenth century’s second half.\(^6^1\) Despite the patriotic overtones, more practical and economic reasons also explain the shift to government-run hatcheries. Roosevelt and Green maintained fish culture needed government aid because of the patchwork of ownership along streams as well as the legislation needed to protect fish from water pollution and dams.\(^6^2\) Both state agencies and the US Fish

\(^{59}\) R. Barnwell Roosevelt and Seth Green, *Fish Hatching and Fish Catching* (Rochester, NY: Union and Advertiser Co.’s Book and Job Print, 1879), 9-10.  
\(^{61}\) Kinsey, 529-545.  
\(^{62}\) Roosevelt and Green, 13.
Commission (USFC) took up hatchery work in the United States. Their actions mirrored fish culture work throughout the world. As the first commissioner of the fledgling USFC, Spencer Baird noted that most European nations already engaged in fish culture as well as colonial holdings such as India, Java, and Australia.\textsuperscript{63} By the early twentieth century, even more nations like Japan and Argentina operated hatcheries. Within this worldwide spread of fish culture, fish culturalists traded knowledge, techniques, and sometimes personnel. The development of Rocky Mountain hatcheries and later trout culture, therefore, depended on these national and transnational processes.

The nineteenth-century exchange of scientific thought, technology, and trout occurred in the midst of the great transatlantic migrations; approximately fifty million people left Europe in the nineteenth and early twentieth centuries, with many going to the United States, Argentina, Canada, New Zealand, Australia, and other prime trout habitat.\textsuperscript{64} US fish culturalists relied on these transactions for new scientific findings from foreign hatcheries and exotic fish eggs (including European brown trout, the most prevalent fish in western rivers). Both private fish culturalists and the USFC under Baird’s leadership routinely translated works from French, German, Russian, and other foreign fish culturalists.\textsuperscript{65} Immigrants trained at European universities also brought their knowledge to the Americas. German immigrant Rudolph Hessel, for instance, oversaw the US Fish Commission’s short-lived carp program.\textsuperscript{66}

Hatchery expertise and fish life flowed both in and out of the Rocky Mountains. In 1903 and 1904, the Argentine government employed two former US federal fish culturalists to help


\textsuperscript{65} See, for example, Stone’s discussion on the use of a Russian dry method of fertilizing eggs, Stone, 87-96.

start a new federal hatchery program there in 1903 and 1904, including the former fish culture
division chief and E. A. Tulian, a former superintendent of the Leadville hatchery in Colorado.67
The US Fish Commission (which became the US Bureau of Fisheries in 1903) frequently
shipped fish eggs outside of the country, including rainbow trout and brook trout eggs, during the
late nineteenth and early twentieth centuries. These transnational exchanges remade the world’s
coldwater fisheries—like the Rocky Mountains—into nonnative trout fisheries.

But why trout? Fish culturalists introduced trout to the West and the world because they
could easily propagate the various species in hatcheries, trout held prized place within sporting
culture, and they saw distinct trout species as transposable. For these reasons, private and state
fish culturalists routinely raised various trout species in hatcheries; the species’ popularity among
sporting anglers and others earned additional support for the conservation agenda.

First, fish culturalists found it relatively easy to propagate trout in hatcheries, compared
to other fish species. The three most widely introduced trout species had widespread populations
in the nineteenth century, from various brown trout morphs native to Europe and western Asia
and brook trout found throughout eastern North America to rainbow trout with abundant native
populations along the Pacific Coast of North America and the Kamchatka Peninsula in Russia.
These large ranges made it easy for many fish culturalists to collect spawning trout eggs and milt
from nearby streams.

Second, anglers enjoyed the aesthetics of trout fishing. Allured by the gaminess or sport,
taste, and attractiveness of trout of all species, anglers throughout Europe, the United States, and
colonial holdings played a key role in the creation of worldwide trout fisheries. One British
angling writer and acclimatization promoter wrote that of all freshwater fish “there is none which

affords so wide-spread and great an amount of sport to the angler as the [brown] trout…”\(^{68}\) His American counterparts celebrated the introduction of European brown trout, made through German and British connections to USFC scientists.

American fish culturalists also promoted and distributed their own native fish, including brook trout and rainbow trout. Livingston Stone explained in 1873 that brook trout was a popular freshwater game fish due to its food and game qualities as well as its ever important beauty: “He surpasses all other fish in grace of form, in beauty of coloring, in gentleness of expression, in fascination of manner, in gameness of spirit, in sweetness and firmness of flesh, and in general personal attractiveness…”\(^{69}\) The esteem for brook trout was later overshadowed by rainbow trout. In *American Food and Game Fishes* (1902), renowned fisheries scientists David Starr Jordan and Barton Warren Evermann discussed the distribution of popular game species throughout North America and the world. They observed that anglers considered rainbow trout “the greatest of all game-fishes” because of its “beauty of color, gracefulness of form and movement, sprightliness when in the water, reckless dash with which it springs from the water to meet the descending fly ere it strikes the surface, and the mad repeated leaps from the water when hooked…”\(^{70}\) Such surprisingly flowery sporting values often privileged nonnative trout over native cutthroat varieties in western states. Some anglers championed cutthroat trout, but in the nineteenth century they were a minority. Jordan and Evermann noted that most anglers saw various cutthroat varieties as “inferior in gaminess to the eastern brook trout.”\(^{71}\) Nonnative trout

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\(^{69}\) Stone, 200. Under Stone’s leadership, the US Fish Commission also disseminated rainbow trout from their California hatchery. See Anders Halverson, *An Entirely Synthetic Fish: How Rainbow Trout Beguiled America and Overran the World* (New Haven: Yale University Press, 2010), 21-47.


\(^{71}\) Jordan and Evermann, 177.
replaced native species not only because of this sporting culture but also because of the idea of interchangeability within late nineteenth century conservation thought.

Third, nineteenth-century conservationists sought to introduce species they saw as better suited to changing environments, operating under the assumption of the interchangeability of trout species within conservation. Their early successes with trout introductions only affirmed these views. Rainbow trout can live in slightly warmer water temperatures and are easier to propagate in hatcheries compared to other trout. This, and its popularity as a game fish, gave rise to the spread of rainbow trout throughout the world. Eastern fish culturalists often observed pollution and rising water temperatures due to industrialization and timber cutting. In these transformed environments, they believed rainbow to be more suitable: “[Rainbow trout] will serve stocking streams formerly inhabited by the brook trout (*Salvelinus fontinalis*), in which the latter no longer thrives, owing to the clearing of the lands at the sources of the streams, which has produced changed conditions in and along the waters not agreeable to the brook trout’s wild nature. The rainbow is adapted to warmer and deeper waters…” While brook trout could no longer survive in the transformed environment of their native range, the species thrived in western waters. One federal official believed brook trout were more fit for the Rocky Mountains than even native fish: “Observations at this station [Leadville, Colorado] point to the superiority of the brook trout over all others for Colorado waters, native varieties not being excepted.”

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73 Halverson, 59.


Along with sporting values, the concept of interchangeability of fish species for conservation purposes led to the widespread introduction of trout.

As one of the most successful fish culture ventures worldwide, trout introductions also helped gain support for the rise of state conservation in the Rocky Mountains. Hatchery activities became popular among westerners of all sorts since fish stocking and introductions promised to save declining populations and even create better trout fishing, important for local food and recreation as well as promoting tourism.

The Western Hatchery System

A mix of private, state, and federal hatcheries comprised the western hatchery system. During the territorial period, fish culture remained a mostly private venture among a diverse and fairly democratic group of individuals but, by the 1890s, much of the burden shifted to state and federal agencies. Regardless of ownership, the majority of hatcheries propagated a combination of native cutthroat and nonnative brook, rainbow, and brown trout, all of which would soon transform regional fish life profoundly. Fish culture and trout introductions found support among conservationists and the general public who believed hatcheries had the capacity to save fish while creating better fishing. Rocky Mountain states also used hatchery activities to promote the tourism and outdoor recreation industries within their states. From the 1890s to the 1910s, state agencies and the US Fish Commission built numerous western hatcheries. Even as government agencies eclipsed private efforts, however, they still relied largely on the labor of individuals like Owen Wister and his host Frank Wolcott to stock fish. Despite their elite upbringing, Wister and Wolcott represented two of thousands of westerners who helped government agencies create Rocky Mountain trout fisheries. As much as Wister yearned for an aristocratic frontier in *The
Virginian, labor and western industrialization made state conservation and Rocky Mountain trout possible.

Railroads played a key role in introducing nonnative trout to the region. While the first known Colorado fish introduction took place when seven sunfish were brought overland by oxcart in 1862, very few fish introductions occurred before the railroads.76 Railroad companies freely hauled fish eggs and fry to their destinations, sometimes in specially-outfitted “fish cars” designed to transport live fish. Fish car crews ensured the fish stayed alive, adding ice periodically to keep the water cool, as well as aerating the water to supply needed oxygen.

Federal and state governments owned fish cars. The US Fish Commission purchased its first fish car in 1881 and had four in operation by 1893, all traveling across the nation delivering fish and fish eggs for free to applicants.77 Applicants received telegrams ahead of time to meet the train at the station. Sometimes they only received a “forced to plant en route” telegram; if the fish looked distressed or started dying, fish car or railroad employees would dump them in the nearest body of water along the tracks. If the cans did arrive, the applicants then hauled the cans of fish by wagons or on horseback to their destinations in nearby waters, hoping—like Wolcott and Wister—the fish would not die along the way. Assorted people took advantage of the USFC application process, ensuring popular assistance for the hatchery system.

Individuals who promoted western fish culture varied from farmers and ranchers seeking to supplement incomes by raising food fish in ponds, to businessmen, lawyers, and doctors wishing to create more local sporting opportunities, to military men and government officials who wanted to improve regional attractions like Yellowstone National Park. These diverse groups negotiated national policies on a local level, showing the democratic nature of trout

76 Wiltzius, 1.
introductions. Private stocking efforts were pervasive across the West. One of the founding members of the politically powerful Wyoming Stock Growers Association, Owen Wister’s first host Major Frank Wolcott apparently took part in fish culture activities. Comprised of elite ranchers and politicians, the Wyoming Stock Growers Association—just like The Virginian—used violence to gain control of Wyoming ranges. Wolcott himself helped lead a group of hired detectives and vigilantes against smaller cattlemen they deemed “rustlers” during the Johnson County War of 1892. Wolcott’s gang failed in their intended takeover after being surrounded by Johnson County residents and were only saved from probable death by being arrested by the US cavalry. Wolcott’s other activities seemed to take precedence over a minor hobby in stocking fish. Wolcott, however, remained one of many who introduced nonnative trout. The US Fish Commission and state fish commissions expanded on this previous work. In order to acquire nonnative brook trout and brown trout for a new federal hatchery in Spearfish, the superintendent looked no further than the nearby creek to collect fish for the hatchery brood stock. The widespread work of private fish culturalists contributed to the growth of state fish hatcheries.

By the early twentieth century, the US Fish Commission had built three trout hatcheries in Leadville, Colorado; Bozeman, Montana; and Spearfish, South Dakota as well as various substations and egg collecting stations in points throughout the West including at Yellowstone National Park and along the Madison River. Many westerners lobbied for the construction of these hatcheries not only for the conservation and sporting benefits, but also for the economic gains. Longtime Colorado Senator Henry M. Teller ran a private hatchery in Gilpin County and

78 Payne, 82-83, White, 127-128. For more on Wolcott and his involvement in the Johnson County War, see John W. Davis, *Wyoming Range War: The Infamous Invasion of Johnson County* (Norman: University of Oklahoma Press, 2010).
helped obtain key appropriations for the first western federal hatchery near Leadville.\textsuperscript{80} Federal hatcheries had both political and sporting connections. A self-styled gentleman angler, Dr. James A. Henshall became the first superintendent of the Bozeman hatchery. Henshall invariably sported a starched shirt, stiff collar, and bold mustache throughout forty years of portraits. A doctor turned conservationist and fishing writer (best known for his \textit{Book of the Black Bass} published in 1881), during Henshall’s tenure, the Bozeman hatchery propagated native grayling and cutthroat, as well as introduced brook and rainbow trout to the area.\textsuperscript{81} The angling officials of the USFC like Henshall played a significant part in Rocky Mountain trout introductions. Their early successes garnered substantial public support.

Over time, hatchery efforts proved effective, despite occasional failures like Wolcott’s fish dying as they drove across the plains. In Colorado, brook trout had become so numerous by 1904 that the US Fish Commission collected more eggs from streams near Leadville than they had from eastern waters in its native range. A large demand also existed for rainbow trout eggs among applicants.\textsuperscript{82} Expanding the already sizable transformation of regional waters, states constructed numerous hatcheries in response to the popularity of trout stocking, hoping to promote outdoor recreation and tourism as well as conservation.

Between 1880 and 1908, Rocky Mountains states built their own trout hatcheries for conservation and to encourage state economic growth. A new fishing licensing system after 1900 chiefly bankrolled state hatcheries. State officials justified the fees by arguing the small cost of licenses created more fish because it paid for hatchery work.\textsuperscript{83} License fees allowed state fish commissions (the precursors to modern fish and game departments) to expand their hatcheries;

\textsuperscript{80} Wiltzius, 11.
\textsuperscript{81} For Henshall’s autobiography—and the portraits—see \textit{Forest and Stream} 89-91 (May 1919-July 1921).
by the mid-twentieth century, the Rocky Mountain states ran somewhere between ten to fifteen
different hatcheries, most of which produced nonnative rainbow, brown, and brook trout and
native cutthroat trout. Illustrating a common justification, one Utah official argued that a state
hatchery would benefit residents for recreation purposes, as well as bring in tourist dollars:

…with a capacity to hatch from 1,000,000 to 2,000,000 of trout fry per year,
which could be placed in the numerous streams of the State with the most
gratifying results, as a source of pleasure, recreation and food for the ever-
increasing number of our citizens who go annually into the mountains and
canyons camping for the purpose of seeking health and pleasure for themselves
and families during the summer months. And if our mountain streams were kept
well stocked with trout, and our game protected from inordinate slaughter, they
would become, in a few years, an alluring attraction for tourists, health-seekers
and sportsmen from other states, which would result in considerable revenue to
our State from this source, as the class of people who seek this kind of pleasure
and amusement are generally wealthy, and willing to spend their money lavishly
to get good fishing and shooting.  

The official pointed to the financial benefits reaped by Colorado and Wyoming in creating a
tourist industry based upon good fishing, while lamenting that Utah residents increasingly sought
fish and game in neighboring states because of dwindling wildlife populations. Rocky
Mountain states ran hatcheries for the varied purposes of promoting the tourism and recreation
economy as well as conservation.

To achieve these goals, fish culturalists quickly realized that they had to do more than
just stock fish to maintain high populations. New laws and regulations accompanied hatchery
activities, but were not necessarily transformative.

Local Negotiation of New Regulations

Between 1890 and 1920, new regulations and better enforcement paralleled the rise of the
western hatchery system, as states tried to address fish conservation. Contrary to recent

84 John Sharp, Report of the State Fish and Game Warden, To the Governor and Third Session of the State
Legislature of Utah, For the Years 1897 and 1898 (Salt Lake City: Deseret News, 1899), 17.
85 Sharp, 1897 and 1898, 17-19.
interpretations of the new conservation historians, fisheries provide a different view of the rise of state conservation, one that is more complicated than a class-based description. States enacted a host of new regulations to address fish declines, but these laws remained fairly lax. Sport fishing and subsistence fishing continued to exist simultaneously, especially with the liberal daily catch limits and open seasons on certain fish species. In terms of controlling Rocky Mountain fisheries, state power remained incomplete and game warden patrols continued to be small into the twentieth century. Lower classes also shaped conservation, as its effectiveness relied on community support due to the lack of enforcement. Additionally, state regulations attempted to address the same concerns as community-centered conservation, including the industrial destruction of fish and rivers. Regulations did garner resistance and did affect rural residents, but opposition did not necessarily fall along class lines. Locals rejected state conservation at times because it actually lowered fish populations or threatened the local fishery.

At the turn of the century, mountain states had only small forces of game wardens, allowing residents to easily bypass fish and game laws if they wanted. In *Crimes against Nature*, Karl Jacoby addressed how, after the 1872 creation of Yellowstone National Park, conservationists feared that both Indian and white hunting would decimate the park’s wildlife populations, prompting the 1886 arrival of the US military to guard the park.\(^8^6\) Even under military occupation, Jacoby noted that game laws remained difficult to enforce in Yellowstone. Yellowstone, however, provides an unrepresentative example of conservation law enforcement in the West. Like the conservationists who supported military patrols in Yellowstone, officials from surrounding states decried the problems with enforcing game and fish laws in their territories, but they could not rely on military enforcement. As troops and military scouts

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\(^8^6\) Jacoby, 85-98. Jacoby stated that “despite near-constant patrolling, the scouts were able to capture only two wrongdoers during the winter of 1897–98—a rate consistent with present-day studies of poaching, which conclude that authorities typically apprehend only 2 or 3 percent of all game-law violators.” Jacoby, 115.
guarded Yellowstone, the surrounding states employed only a handful of game wardens and volunteers to enforce the not-so-strict laws.

The lack of fish and game enforcement in Rocky Mountain states revealed the importance of community support for state conservation. Wyoming did not have an actual game warden until 1899. The law stated that the warden could appoint forest rangers as game wardens and assistant game wardens for counties, but only so long as he received a petition signed by fifty residents. As such, early fish and game laws needed community assistance for enforcement. A Swedish immigrant named Albert Nelson served three years as Wyoming’s first game warden, attempting to enforce fish and game regulations for the entire state. As a young boy, he developed a fascination with the frontier after reading James Fenimore Cooper’s *The Leatherstocking Tales*. After his parents died, he traveled to America and worked his way out West, landing in Wyoming. Once there, he worked variously for the railroad, a ranch, then as a guide, and later homesteaded. During his term as game warden, Nelson made numerous arrests, but never achieved a conviction. The next Wyoming state warden had a larger force, but the patrols only made twenty-three arrests and got twenty convictions. Surrounding states faced similar situations of the lack of enforcement, demonstrating that the rise of state conservation in the Rocky Mountains could only take place with community support and did not immediately end subsistence use.

Other states similarly lacked the forces to make conservation regulations interfere with the lifeways of its residents. After statehood in 1889, Montana law allowed county

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87 Photocopy of the Session Laws of Wyoming, 1899-Chapter 19, “Game and Fish,” Box 16, Folder 9, Neal. L. Blair Papers, AHC.
commissioners to hire one game warden per county, but no counties actually hired game wardens and ten years later only four counties had done so. Not until 1901 did the state finally hire its first game warden (who promptly hired eight deputies).\textsuperscript{90} The first Idaho state game warden took his job in 1899 and relied on a force of unpaid county wardens who received part of the fine if there was a conviction. He noted that Ada, Custer, and Shoshone counties did not even bother to appoint wardens because it was “impossible to secure persons to act.”\textsuperscript{91} The Idaho state warden lamented the widespread disregard for fish and game laws: “public sentiment seemed largely against the punishment of offenders, and convictions were almost impossible even for the most flagrant violations.”\textsuperscript{92} With earlier settlement and larger populations, Utah and Colorado had slightly bigger forces, but still had problems enforcing game and fish laws. In the late 1890s, the Utah state game warden observed a refusal among certain counties to appoint game wardens or turn in lawbreakers: “Eight counties only, out of the 27 in the State have reported violations of the Fish and Game Law in the last two years…”\textsuperscript{93} Utah, as well as Colorado, relied heavily on volunteers from sportsmen’s clubs to help catch fish and game law violators. Even with volunteer forces, enforcement problems ran rampant. The small game warden forces who patrolled notably large geographical areas—the five states have a total area over 500,000 square miles, or roughly 327 million acres—exemplified the lack of state control in fish and game matters. This lack of control meant that game wardens often relied on help from various classes to catch offenders.

Middle-class sportsmen and women, working-class fishermen, and lower class rural residents often turned in fish law transgressors. For instance, one Utah man disapproved of his

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\textsuperscript{90} Alvord, 1-7.
\textsuperscript{91} Charles H. Arbuckle, \textit{First Biennial Report of the State Fish and Game Warden of the State of Idaho, 1900} (Boise: State Fish and Game Warden, December 20, 1900), 1-6.
\textsuperscript{92} Arbuckle, 1.
\textsuperscript{93} Sharp, \textit{1897 and 1898}, 38.
\end{flushleft}
brothers surreptitiously seining fish out of the Weber River at night and finally informed the state game warden of their activities after they refused to stop. Rocky Mountain game wardens relied heavily on citizens reporting violations. The extra help revealed more than just a concern preserving rivers and fish life. Nativism and racism also sometimes shaded public assistance and state enforcement of conservation laws. In the Rocky Mountains, enforcement concerns arose over Indians, Japanese, and European immigrants. Some states even required expensive fishing licensing designed specifically for foreigners. In the early 1900s, a Utah game warden reported success in convicting “Japanese and foreign laborers” for fishing without licenses. The uneven enforcement by targeting certain groups exposed some important difficulties in the rise of state conservation. Enforcement had other problems as not all game wardens proved to be model patrolmen.

Some game wardens received their job by political appointment, others violated laws themselves or neglected their duties. The gubernatorial appointment of game wardens became highly politicized. Political parties, sportsmen’s clubs, and even labor unions routinely pressed governors and state game wardens to appoint their men to positions or endorsed game warden candidates. Labor union involvement in game warden appointments illustrates some working class involvement in conservation, but more research remains to be done. Other game wardens failed to properly enforce game laws. One Utah fish commissioner criticized one county warden

94 John Sharp to Fred Wilson, 12 August 1896, Box 1, Letter Book A, Series 1068: Fish and Game Commissioner, Correspondence sent, Utah State Archives and Research Center, Salt Lake City [hereafter USARC].
95 For more on nativism and conservation, see Warren, ch. 1.
96 H. B. Cromar, Biennial Report of the State Game and Fish Commissioner and the Commissioner of Hatcheries of Utah (Ogden: State Industrial School, 1908), 24.
97 With the exception of Lawrence M. Lipin, Workers and the Wild: Conservation, Consumerism, and Labor in Oregon, 1910-30 (Chicago: University of Illinois Press, 2007), few historians have focused on working-class conservation before World War I.
in 1911 for sleeping on duty. The same commissioner had problems with a different county warden the next year, who reportedly fished closed waters while drunk, then bragged about it. The types of misconduct ranged from sleeping or drinking on the job to violating game laws to extortion. In Montana, one deputy game warden extorted money from a coal mining company along the Yellowstone River in return for not turning them in for violating pollution laws. The small forces of not necessarily model patrolmen ensured that state conservation needed local advocates, otherwise people could skirt around the laws. The laws, however, remained fairly lenient, illustrating that the slow shift to government-led conservation did not abruptly end subsistence fishing.

State regulations accommodated subsistence fishing of the lower classes, showing that conservation regulations were not as transformative as larger economic changes in the West. To start, those early, unenforced territorial hook and line laws made no restriction on the amount of fish caught. When states finally enacted creel limits, clearly stemming from sporting ideals and aimed at market fishing, they remained high enough to not exclude subsistence fishing. In 1903, Wyoming set a daily catch limit at twenty pounds. A 1909 Montana law restricted anglers’ catches to twenty-five pounds per day. By 1912, Utah had a fifteen-pound creel limit. The allowances for fish kept continued to be high throughout the first half of the twentieth century. In 1921, Wyoming set its creel limit to fifteen pounds per day, which continued at this level for at

98 Fred W. Chambers to George Van Wagoner, 26 July 1911, Box 2, Letterbook 7/17/1911-1/20/1912, Fish and Game Commissioner, Correspondence sent, USARC.
99 Fred W. Chambers to H. H. Peterson, 22 April 1912, Box 2 Letterbook 1/23/1912-7/6/1912, Fish and Game Commissioner, Correspondence sent, USARC.
100 H. J. Miller to Edwin L. Norris, 27 November 1908, Box 210, Folder 13, MC 35: Montana Governors Records, MHS.
102 Alvord, 14.
103 Fred W. Chambers to Jos. Wignall, 6 February 1912, Box 2, Letterbook 1/23/1912-7/6/1912, Fish and Game Commissioner, Correspondence sent, USARC.
least another twenty years. Additionally, these creel limits were often directed toward only protecting trout and other “game” species, excluding other species like suckers. Continuing to today, high catch limits exist for undesirable non-game species (see Chapter Four). The liberal allowances permitted westerners to continue fishing for food throughout the twentieth century, one of the reasons why fishing remained popular among broad sections of society. These high catch limits demonstrate that the evolving western economy and connections to national markets were probably more to blame than the rise of state conservation in the decline of subsistence use of fish and game. Some fisheries regulations, however, restricted fishing more rigidly than the lax creel limits by prohibiting fishing for parts of each year. In the intricacies of new conservation regulations, however, some lower class locals criticized what they saw as class-based laws while others supported these stricter regulations.

Before states created creel limits, they established fishing seasons to guard against overfishing as well as protect spawning fish. Some territories outlawed fishing sometime between late fall and late spring. For example, an 1886 Wyoming law closed fishing from November 1 to June 1. These seasons sometimes became a point of contention among local people, but could also be ignored. In 1915, a newspaper publisher in Kellogg, Idaho, complained to the governor that a “great number of people” fished during the closed season, taking advantage of the fact that no game warden had been appointed to the region. Locals did more than resist controversial laws. They also became politically involved, asserting their right to decide fish and game matters.

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104 Photocopy of the Session Laws of Wyoming, 1921-Chapter 83, “Game and Fish,” Box 16, Folder 12, Neal L. Blair Papers, AHC.
105 Photocopy of the Laws of Wyoming, 1884-Chapter 45-“An Act for the propagation and culture of fish throughout the Territory of Wyoming,” Box 16, Folder 9, Neal L. Blair Papers, AHC.
During the same year that Kellogg residents reportedly violated the closed season, Blaine County, Idaho, residents sent a petition to the governor asking him to veto a bill that would close fishing from November to June. They saw the measure as elitist: “this provision is more for the preservation of the fishing in the interests of a few city sportsmen, who would deny the right to the rural population to take fish at a time of year when they are not too busy to go fishing. The winter season is not the best time of year to fish and what few fish are taken at that time does not in any manner deplete the supply.”\textsuperscript{107} The petition reveals a clear class division as well as a concern among the lower classes to maintain fish populations. From this viewpoint, locals supported conservation, but only on their own terms. Other locals regarded the same laws as beneficial.

Not all rural residents opposed seasons or state regulations, even if seasons were less equitable than high creel limits. In 1916, the Farmers Union of Bonner and Boundary Counties, Idaho, wanted the Sandpoint hatchery to raise lake whitefish (important for their food and commercial value) and the state to enact a closed season yearly between September 1st and December 1st.\textsuperscript{108} These farmers sanctioned the same strict laws, hoping to benefit from abundant fish populations for food and perhaps market.

The high creel limits and open seasons on non-game fish illustrate that sport fishing did not necessarily eclipse subsistence fishing in all places, providing a more-nuanced interpretation of western fish conservation. Like creel limits, other early regulations focused mainly on trout and other game fish, ignoring other fish species. Sometimes seasons were only closed to fishing for game fish and allowed anglers to seek out other species during winter and spring months. Utah’s state game warden wanted the open season to be amended in 1901 because people used

\textsuperscript{107} Petition to Moses Alexander from undersigned citizens of Blaine County [1915], Box 4, Folder 14, Governor Moses Alexander Records, ISHS.

\textsuperscript{108} Wm. Parsons to Moses Alexander, 8 July 1916, Box 4, Folder 15, Governor Moses Alexander Records, ISHS.
the open season to fish for trout under the guise of fishing for other species like suckers and chubs. Some rural residents across the Rocky Mountains rejected the class-based aspects of state conservation regulations. Yet in complexity of growth of state-led conservation, resistance came from broad segments of society.

Some resistance came not from local subsistence fishermen, but from the middle and upper classes, suggesting an early manifestation of the familiar western distrust of government. Fish commissioners and game wardens constantly complained about cases being dismissed by judges and county attorneys who refused to prosecute violators. The Wyoming game warden noted continued problems in 1919 and 1920: “When these parties are taken before a Magistrate they are turned loose or fined and then the fine is remitted.” The Idaho state game warden earlier observed the apathy on the part of those responsible for prosecuting offenders: “Despite adequate evidence, prosecution has been seemingly lax. This is especially true in instances where the law breakers have been prominent citizens.” Utah experienced the same problems. County attorneys often “refused to prosecute cases” or judges imposed very small fines that fell under the minimum set by law. The middle class and elite rejection of state conservation through their refusal to prosecute cases points to more complicated reasoning regarding the acceptance of and resistance to conservation regimes. In Colorado, the commissioner noted that county politics and some concern for the fellow locals played a role in ignoring disliked fish and game laws. Local elites may have also resented government interference in what was seen as a local matter.

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109 John F. Sharp, Third Biennial Report of the State Fish and Game Commissioner, To the Governor and the Fourth Session of the State Legislature of Utah, For the Years 1899 and 1900 (Salt Lake City: Deseret News, 1901), 28.
111 Arbuckle, 5.
112 Sharp, 1897 and 1898, 30.
In addition to the loose enforcement and prosecution of fish laws on the part of local elites, many violators came from the ranks of the middle- to upper-class residents or tourists who rode the rails.

Fish law violations came from all classes. In 1906, Idaho state warden reported that a deputy warden “arrested three prominent citizens of Spokane, Washington, for fishing without licenses.” The wardens used the embarrassing moment to sell more non-resident fishing licenses, which “materially increased” after arresting the respected Spokane men.\(^\text{114}\) In the same way that elite anglers criticized immigrants, nonwhite races, and lower classes for contributing to fish declines, rural residents often attacked well-off outsiders (derided as “dudes”) for needlessly keeping too many fish or game. The Colorado counties that had large game herds held strong local sentiment against market hunting and helped to enforce laws. In these counties, the state fish and game commissioner reported that locals believed the “game laws were made for the city ‘dudes’ and ‘tourists’ generally and not for the ranch men and other residents of these counties.”\(^\text{115}\) These Colorado residents, then, saw conservation regulations as supportive to their own community conservation sentiments, providing them with motivation to help game wardens catch dudes who violated game laws. Similarly, other aspects of the state conservation agenda remained in tune with the ideology of community-centered conservation.

In the industrialized Rocky Mountain West, conservationists were forced to negotiate the industrialized western economy. In 1889, USFC scientist David Starr Jordan reported that Colorado mining polluted trout streams: “In some cases placer-mining and stamp-mills have filled the waters of otherwise clear streams with yellow or red clay, rendering them almost uninhabitable for trout. Parts of the upper Arkansas and Grand Rivers have been almost ruined as

\(^{114}\) W. N. Stevens, *Annual Report of the [Idaho] Fish and Game Department, For the Year 1906* (Boise: [Idaho Fish and Game Department?], January 1, 1907), no pagination.

\(^{115}\) Swan, 11.
trout streams by mining operations.”

In Montana, Barton Warren Evermann found little to no fish life in the Deer Lodge Valley due to the smelting and mining operations in upstream Butte and Anaconda. Similar reports came in from all parts of the West. In response to these conditions, many fish culturalists believed protecting fish translated into protecting waters.

Fish culturalists often called for strengthened water pollution laws. James A. Henshall took up the cause of water pollution both before his tenure at the Bozeman hatchery and after when he wrote a monthly column on the topic for the Izaak Walton League’s organ Outdoor America in the early 1920s. In 1890, he cautioned that fish culturalists to take “proper care and protection of the fish and the water.” Henshall blamed a variety of industrial sources for polluting eastern waters, from manufacturing and factories to sawmills and timber cutting, seeing it as not only a legal issue, but also an ethical one: “No man, or company of men, have the moral or legal right to pollute or poison the waters of any flowing stream…” To keep waters clean and save fish, he called for more legal protections. Following examples set by eastern states, western states established regulations to curb water pollution during the late nineteenth century.

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118 See Donald J. Pisani, “Fish Culture and the Dawn of Concern over Water Pollution in the United States,” Environmental Review 8, no. 2 (Summer 1984): 117-131. Some fish culturalists were concerned with both fish and human health, one Philadelphia fish culturalist complained about the lack of conformity to pollution laws, stating “Instead of regarding the water-courses as sources of health to human beings as well as to fish, they are deemed fit places of deposit for noisome and noxious materials of whatever kind that can be most conveniently disposed of through their agency.” A. M. Spangler, “The Decrease of Fish in American Waters, and Some of the Causes,” Fishery Bulletin 13, no. 1 (1893): 23, http://fisherybulletin.nmfs.noaa.gov/13-1/spangler.pdf (accessed November 15, 2010).
120 Henshall, “Fish Protection,” 82.
Rocky Mountain fish laws attempted to address some of the concerns over market use of fish and the destruction of fish within the western extractive economy. Most inland western states had banned commercial fishing in some form.\(^{121}\) Unfortunately, like some of the other laws, they were hard to enforce; in 1897, one Montanan complained of men “trout fishing and selling, in the open market, which is against the law.”\(^{122}\) States also enacted laws that prohibited the dumping of sawdust from the sizable timber industry and poisonous materials in rivers, required dams to have fishways and irrigation ditches to have screens, and other statutes that combated declining fish populations due to industrial causes. The regulations attempted to stop pollution and environmental degradation from mining, the timber industry, and agriculture. These aspects of the state conservation agenda mirrored earlier community-centered conservation ethics, which often rejected individuals and corporations seeking to profit by using or harming public fish and wildlife. Like other fish conservation regulations, however, these laws went largely unenforced.\(^{123}\) The lack of enforcement for environmental protections created tension between local populations and government agencies.

In some cases, like the collapse of fish populations caused by the Sunbeam Dam in Idaho, locals rejected state conservation because it was ineffective in conserving fish populations, or it actually caused declines. In central Idaho, the 1914 construction of the Sunbeam Dam by the Sunbeam Mining Company cut off fish spawning runs to major tributaries and lakes in the upper Salmon River area near Stanley, subsequently ending both subsistence fishing and the region’s burgeoning tourist industry. Locals looked to the Idaho Fish and Game Department to construct proper fish ladders for the dam, writing letters and sending petitions to various governors for

\(^{121}\) Many states still allowed it in some locales, like the commercial fishery that sprung up at Utah Lake, allowing fishermen to sell trout, suckers, chubs, and later carp, from the lake. Sigler and Sigler, 20.

\(^{122}\) Quoted in Jacoby, 137.

\(^{123}\) Pisani noted that nineteenth-century pollution laws were “ambitious but very weak.” Pisani, 123.
over 20 years. Two years after construction, the county prosecutor joined in the fight, writing to the Idaho governor about the defunct fish ladder. He included a photograph of a rickety and broken wooden fishway and went on to say that the blocked fish runs hurt both local subsistence and the tourist economy: “The entire Stanley Basin country get practically all of their fish through the Salmon River and owing to the fact that this country is a great tourist country, for the entire Southeast, it is a matter in which we are all very much interested…”\textsuperscript{124} The letter articulated that a broad segment of the population stood to gain from effective fish conservation and locals around Stanley looked to the state for a solution.

Another citizen also complained about the lack of action over Sunbeam Dam: “I have repeatedly requested you to investigate the condition of the fish ladder at the dam at the mouth of Yankee Fork. You have promised to do this on several occasions but up to date there has been nothing done. Your fish ladder has always been a farce and from all indications the Office of Game Warden should be abolished and the protection of game and fish left to the people.”\textsuperscript{125} In this case, this irate citizen saw the state lack of action as farcical and believed community-led conservation would better save fish. The local outcry continued until 1934—long after the Sunbeam Company went bankrupt—when the Idaho Fish and Game Department finally blew apart most of the dam with dynamite.\textsuperscript{126} The outrage in the upper Salmon River country over the Sunbeam Dam blocking fish runs illustrates that resistance to state conservation came from many levels for many reasons, including the fact that state conservation often proved ineffectual.

\textsuperscript{124} Solon B. Clark to Moses Alexander, 14 September 1916, Box 4, Folder 17, Governor Moses Alexander Records, ISHS.
\textsuperscript{125} L. S. Niece to Leroy C. Jones, 3 August 1916, Box 4, Folder 15, Governor Moses Alexander Records, ISHS.
\textsuperscript{126} Department of Fish and Game Receipts and Disbursements, April 1, 1934 to December 31, 1934, Report of Audit and Examination of the Department of Fish and Game for the Period April 1, 1934 to February 29, 1936 ([Boise: Idaho Department of Fish and Game?], September 14, 1936), 1-6, Box 40, Folder 4, Governor C. Ben Ross Records, ISHS.
Many of the complaints surrounding state fish conservation arose over the fish declines caused by yearly egg-collecting activities of state and federal hatchery workers during spawning time. Hatcheries usually kept fish as brood stocks to continue producing fish, but also operated egg-taking stations on rivers and lakes with large fish runs to supplement these stocks. Most yearly egg-collection efforts took hundreds of thousands or sometimes millions of eggs from spawning fish, leaving little for natural reproduction. Local residents often resented the accompanying fish declines. In the 1910s, for example, egg collection efforts near Idaho Falls that led to declining fish runs incensed local businessmen concerned with the loss of tourist traffic and area trout fishing. Many states also constructed traps and weirs to catch the spawning fish, blocking both spawning runs upstream and fishing access, meeting resistance from locals.

Federal egg collection near the Leadville hatchery exemplified the problems of egg collection. During the 1890s, hatchery employees built weirs at Twin Lakes to block yellowfin cutthroat unique to only these lakes from migrating into streams during spawning season, then taking eggs from the captured fish. The lack of spawning runs pushed locals pushed from their traditional fishing grounds. They reacted by forming posses and attempting to dynamite the weirs, a sign of the gravity they placed on the situation. Leadville locals fought for what they believed was a customary right to the fish and highlighted the failures of state conservation to actually conserve and propagate more fish in certain instances (comparatively, at a Yellowstone egg collection station, problems came not from irate locals, but from grizzly bears). As it turned out, the Leadville residents were right. While the US Fish Commission discontinued

127 W. E. Wheeler to Moses Alexander, 20 April 1915, Box 4, Folder 14, Governor Moses Alexander Records, ISHS.
yellowfin cutthroat egg collection in 1898 on account of these problems, it was already too late.\footnote{US Commission of Fish and Fisheries, \textit{Report of the Commissioner for the Year Ending June 30, 1898} (Washington, DC: GPO, 1899), 90, \url{http://docs.lib.noaa.gov/rescue/cof/COF_1898.PDF} (accessed January 23, 2011).} The cut-off spawning runs combined with the introduction of rainbow trout into Twin Lakes spelled the end for the yellowfin cutthroat trout. By the early twentieth century, yellowfin cutthroat trout were extinct.\footnote{Robert J. Behnke, \textit{Trout and Salmon of North America} (New York: Free Press, 2002), 201-205.} The mistakes of federal and state agencies in saving fish life supplied important, but often ignored, critiques of government resource management. Locals could be dismissed as backwards, especially those pitchfork-wielding Leadville fishers. The whole affair showed how locals contested management for a variety of reasons, sometimes shaping state efforts, sometimes being overlooked by state expertise.

\textbf{Conclusion}

In the Rocky Mountains, the history of state-run fish conservation eventually transformed regional waters into remarkable—and mostly nonnative—trout fisheries. In 1912, one federal official looked back on the work accomplished, boasting that the intermountain West “is today the angler’s paradise.” He based his Edenic descriptions primarily on the existence, ironically, of nonnative fish: “Colorado and Wyoming’s reputations are upheld largely by the magnificent rainbows found in the larger streams. Brook trout have become so plentiful and widely distributed that many people are inclined to think them indigenous.”\footnote{W. T. Thompson, “Is Irrigation Detrimental to Trout Culture?” \textit{Transactions of the American Fisheries Society} 41, no. 1 (Jan. 1912): 105.} As Wister reminds us, however, these trout fisheries did not spring up overnight, but slowly found success. During the territorial era starting in the 1860s, legislatures enacted the first conservation regulations, hook and line laws partly based on sporting ideals meant to limit catches of other fishing techniques used by natives and settlers. The territorial period also saw military men become the advanced
guard of western conservation, promoting regional sporting opportunities as well as hatchery work.

During the rise of government-sponsored conservation from the 1880s to 1910s, hatcheries and more detailed fishing regulations transformed Rocky Mountain fish life. This growth of state-led conservation offered a complicated history. Westerners of all classes and groups sometimes resisted elite control of resources, sometimes resisted government jurisdiction, and sometimes resisted government inadequacies in preserving fisheries. Additionally, elite sportsmen did not solely dictate the agenda of state conservation, as broad segments of the public also lent their support or complaints. This advocacy and the slow development of state management helps to explain the remarkably democratic character of later western trout conservation that assisted in the protection of regional rivers and fish from continued environmental degradation.

In the years following the Great War, social and fishy transatlantic connections declined. Guided partially by these earlier exchanges, the environmental transformations of the nineteenth and early twentieth centuries laid the foundation for the mid-twentieth century creation of a Rocky Mountain trout culture. While western waters could be described earlier as paradise, it was not until this later time that a strong trout fishing culture, and an economy based on it, flourished. The successes of trout introductions and this new regional economy yielded a key justification for western hatchery expansion from the 1910s to the 1930s. This enlarged system further remade Rocky Mountain rivers and lakes. As western hatcheries grew, so did the regional boosterism that sold western waters as fishing destinations. During the mid-twentieth century, anglers, conservationists, and boosters shaped the inland West into a trout place, illustrating both the environmental changes and cultural compositions that created place and region over time.
“Is There Really a Ted Trueblood?” asked outdoor humorist Ed Zern in the October 1962 issue of *Field & Stream*. In his comical “exposé” of Trueblood, Zern told readers that *Field & Stream* editors concocted the popular Trueblood character, developing the persona because no one in real life spent most of their time hunting and fishing. Zern then described an imaginary conversation with the magazine’s editors, who made up the too-good-to-be-true name, his “All-American” family who hunted and fished with him, the town of Nampa, Idaho, and even Trueblood’s famed bird dog Joe to begin “an editorial hoax that has lasted nearly two decades.” The article quickly sparked controversy, outraging some of Trueblood’s faithful readers who failed to recognize Zern’s tongue-in-cheek humor—and the fact that Nampa, Idaho, actually existed. Amused by the whole affair, Ted Trueblood remained one of the most widely-read outdoor writers of his time.

As the magazine’s long-time fishing editor, Trueblood exemplified the prevalence of western fishing during the mid-twentieth century. Born in Boise in 1913, Trueblood grew up on a nearby homestead, and like many westerners, came of age in the outdoors. He eventually landed a job at *Field & Stream*, enabling him to write while spending the majority of his time in the rivers and mountains he loved, often accompanied by his wife Ellen, two sons Dan and Jack, and of course the bird dog Joe. As a popular columnist, Trueblood captured the imaginations of new generations of anglers, especially in the Rocky Mountains, by promoting western fishing, making fly fishing accessible, and advocating for conservation and the protection of rivers. His

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columns frequently defended catch-and-release fishing and wilderness ethics in the 1950s.\(^2\) By promoting western fishing, Trueblood helped shape a Rocky Mountain trout culture during the mid-twentieth century.

Westerners fished in previous eras, but by midcentury, thanks to people like Trueblood, the West became known for its trout fishing. National and transnational developments in sport and conservation contributed to regional changes that made this possible. As Americans expanded westward, they brought trout and new conceptions of angling. From the 1860s to the 1910s, fish culturalists started to remake Rocky Mountain fish life. State legislatures, state agencies, and local people simultaneously sought to protect trout and rivers with new conservation laws. These transformations revealed that state-led fish conservation found widespread support over time as it adapted to local conditions. Locals of diverse class backgrounds influenced conservation through their work introducing trout and shaping new regulations. With the help from willing enthusiasts in the late nineteenth and twentieth centuries, state and federal agencies introduced nonnative trout and manipulated the western landscape to help create a Rocky Mountain trout culture. By the mid-twentieth century, many westerners exalted these nonnative trout fisheries.

Environmental historians have often criticized modern environmentalism for its elite character, while overlooking the diverse nature of local environmental ethics from working-class anglers to a variety of other conservationists. If historians have ignored the scope of a conservation ethos, so too have they overlooked the environmental consequences of outdoor recreation and tourism, particularly the trout culture that overhauled Rocky Mountain waters

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This chapter explains how anglers like Ted Trueblood helped to develop a New Western regional identity and economy based on nonnative trout fishing and outdoor recreation from the 1920s to the 1950s. During these years, scientists and government professionals, anglers, outfitters, and regional boosters generated a western trout aesthetic that, despite its local character, paradoxically privileged nonnative trout. The realities of a trout place held significant environmental costs for ignored western native fish that continually declined throughout the twentieth century.

With help from the automobile and magazines like *Field & Stream*, Rocky Mountain fishing and tourism became ever more prominent starting in the 1920s and again after World War II. Like Ted Trueblood and his all-American family, countless others in the West spent their

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3 While a large historiography exists on tourism and outdoor recreation, few historians have focused on how these activities transformed nature. In his article “‘Are You an Environmentalist or Do You Work for a Living?’: Work and Nature” (1995), Richard White argued that environmental historians should focus on work, not leisure. He discerned an important criticism of the environmental movement, which separated humans from nature and relied on elite leisure activities to define nature. In questioning the narrow focus of American environmentalism (and by association, environmental historians), White called for a reexamination of the connections between work and nature, maintaining that leisure activities do not provide as close an interaction with nature as work does. Richard White, “‘Are You an Environmentalist or Do You Work for a Living?’: Work and Nature,” in *Uncommon Ground: Toward Reinventing Nature*, ed. William Cronon (New York: W. W. Norton, 1995), 174. White, however, ignored working-class recreation; the loggers in Forks, Washington, also probably spent time in the woods hunting and fishing. Recreation cannot just be condemned as an elite activity, especially since some of the strongest conservation work dealing with western rivers and fish came from working-class conservationists. See, for example, Pat Munday, “‘A millionaire couldn’t buy a piece of water as good’: George Grant and the Conservation of the Big Hole River Watershed,” *Montana: The Magazine of Western History* 52, no. 2 (Summer 2002): 20-37. Focusing solely on work misses important midcentury changes to the environment and work itself, as the size of the sport fishing industry at midcentury suggests. Alternatively, Paul Sutter argued in *Driven Wild* (2002) that Americans knew nature through leisure, not work, during the interwar years, Americans came to know nature through leisure en masse.” Paul S. Sutter, *Driven Wild: How the Fight against Automobiles Launched the Modern Wilderness Movement* (Seattle: University of Washington Press, 2002), 51. Sutter focused on how a rejection of road building and American car culture helped create the modern wilderness movement. Starting in the 1920s, however, trout were stocked in remote high country lakes and wilderness areas. Other studies have not dwelled on the environmental consequences of western tourism or recreation. See Earl Pomeroy, *In Search of the Golden West: The Tourist in Western America* (New York: Alfred A. Knopf, 1957), Hal K. Rothman, *Devil’s Bargains: Tourism in the Twentieth-Century American West* (Lawrence: University Press of Kansas, 1998), Susan Rhoades Neel, ed., “Tourism and the American West,” special issue, *Pacific Historical Review* 65, no. 4 (Nov. 1996), David M. Wrobel and Patrick T. Long, eds., *Seeing and Being Seen: Tourism in the American West* (Lawrence: University Press of Kansas, 2001), Liza Nicholas, Elaine M. Bapis, and Thomas J. Harvey, eds., *Imagining the Big Open: Nature, Identity, and Play in the New West* (Salt Lake City: University of Utah Press, 2003), Annie Gilbert Coleman, *Ski Style: Sport and Culture in the Rockies* (Lawrence: University Press of Kansas, 2004). More recently, in his study of Rocky Mountain National Park, Jerritt Frank has illustrated that tourism meant more than just looking at scenery, but also manipulation of the environment to cater to tourists (Lawrence: University Press of Kansas, forthcoming).
extra time outside; one-quarter to one-third of residents in Rocky Mountain states bought fishing licenses each year in addition to numerous tourists during this era, making western fishing remarkably popular. The creation of regional fly fishing traditions as well as a growing tourist economy marked the importance of nonnative trout in this transition, while fishing books and booster materials sold the West and its fish to tourists and newcomers. The additional fishing pressure spurred state and federal agencies to expand the western hatchery system and shift stocking practices to ensure plentiful trout fishing. By the 1950s, the Rocky Mountain trout culture was complete, resulting in the transformation of almost every single lake, river, and creek in the Rocky Mountains that could sustain trout. A trout culture, indeed.

**Fishing, Boosterism, and Trout in the Railroad Era**

The previous trout introductions and fish cultural work of the nineteenth and early twentieth centuries added to the popularity of western fishing. At the turn of the twentieth century, all classes of westerners fished regional waters, from working-class anglers heading out on a Sunday afternoon to catch their dinners to middle- and upper-class anglers on week-long camping trips. While fishing near home remained popular among a variety of people, only leisure-class tourists could afford the expensive rail fares for a western vacation during the railroad era. Lured by aggrandized railroad advertising, these tourists sought trout as enthusiastically as local anglers. Within this culture, early concerns of declining native fish became overshadowed in the rise of a regional trout industry.

Westerners fished frequently in the twentieth century, heading out on nearby streams, rivers, and lakes for recreation and the sometimes added bonus of dinner. Before the widespread use of the automobile in the 1920s, many fished near home or relied on the available modes of
transportation like horses or the railroad. In the 1910s, the Utah fish and game commissioner noted the popularity of fishing in Salt Lake City and the surrounding region:

It has been a most common occurrence to see men and women on street cars, having been for an afternoon only on a trip for recreation, and possessed of a successful catch. On the railroad trains, on the wagon roads, in the canyons and over the country generally, people on camping trips, all have fishing tackle and fish also. The country stores in all of the counties carry a stock of fishing tackle, because people are delighted to fish…

A common recreation, various people fished throughout the West. From Coeur d’Alene, residents frequently took weekend or Sunday trips on a steamer around the lake or connected to the St. Joe and St. Maries rivers. Kellogg area locals also customarily fished on Sundays, one observer noted it was a “usual outing.” Other western anglers relied more on railroads to get to their favorite fishing spots. Sunday excursion trains—often called fishing trains—with affordable fares embarked from cities and towns throughout the West like Denver, Butte, and Great Falls. The Butte train headed south along the Big Hole River, often carrying upwards of 500 passengers on summer Sundays. Dillon, Montana, anglers fished the Beaverhead River through town or frequently took the southbound train to the river’s upper stretches, hopping off at the tiny platform called Grayling Station. Named after the good grayling fishing in that section of the river, after fishing, the anglers flagged down the northbound train to get back into town. During the railroad era, the popularity of western fishing increasingly attracted wealthy tourists on railroad vacations.

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4 Fred W. Chambers, *Eighth Biennial Report of the Fish and Game Commissioner of the State of Utah, To the Governor and Members of the Ninth Legislature of the State of Utah, For the Years 1909-1910* (Salt Lake City: Tribune-Reporter Printing, 1910), 16.
7 Jennifer Corrinne Brown, “‘The Gamest Fish that Swims’: Management of the Big Hole River Fishery in Montana,” *Pacific Northwest Quarterly* 97, no. 4 (Fall 2006): 171.
Railroads sold western trout fishing to wealthy easterners looking to escape during the late nineteenth and early twentieth centuries. This boosterism contributed to ideas of place that connected the Rocky Mountains with trout, starting an advertising campaign that snowballed in the coming decades. Railroad circulars first sold the idea of western trout to leisured classes who rode the rails.

Railroad advertising predominated in the nineteenth and early twentieth centuries. Railroads and their agents helped transform western fisheries in the mid- to late-nineteenth century, making it easier to introduce nonnative rainbow, brown, and brook trout across the region. Railroad companies transported fish eggs and fry at free or reduced rates and sometimes even requested that state agencies introduce trout along their lines. For instance, the Northern Pacific Railroad sought to get Lake Pend Oreille stocked with a variety of fish other than just the native trout, in order to make the area more attractive to tourists in the early twentieth century.9 Railroad employees and ticket agents also doubled as liaisons to anglers who rode the fishing trains, sending in fishing reports to nearby cities or applying for fish to be stocked. In the early 1900s, the passenger agent for the Denver and Rio Grande Railway applied yearly for cutthroat or brook trout from federal hatcheries, planting them in the nearby waters like the Provo River.10 Railroads did not promote trout fishing out of some kind of corporate benevolence, they also hoped to profit from tourist fares and publicized Rocky Mountain fishing.

As railroad companies helped federal and state hatcheries stock fish, their circulars started a publicity campaign that connected the West with nonnative trout. The best fishing, of course, depended on which line tourists traveled. The Colorado and Southern Railway

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9 John M. Haines to J. B. Gowen, 15 July 1914, Box 28, Folder “Official Correspondence-Game Warden” [folders unnumbered], AR2/10: Governor John M. Haines Records, ISHS.
10 John Sharp, *Fifth Biennial Report of the State Fish and Game Commissioner and the Commissioner of State Hatcheries, To the Governor and the Sixth Session of the State Legislature of Utah, For the Years 1903 and 1904* (Salt Lake City: Star Printing, 1905), 7.
championed the Colorado trout streams that ran along its lines.\textsuperscript{11} The Great Northern believed the “finest of trout fishing is to be found in western Montana, Idaho and Washington.”\textsuperscript{12} And the Union Pacific argued Wyoming had “the finest trout fishing to be found anywhere on the globe…”\textsuperscript{13} Nineteenth- and early-twentieth century railroad booster literature commonly emphasized the West’s romantic beauty and the opportunity to escape to places filled with trout and game, but empty of people and the trappings of civilization.

One booklet from the Union Pacific Railroad advertised trout fishing in Colorado and Wyoming by following the story of an eastern businessman who identified himself more as a fly fisherman than a desk clerk. Clearly aimed at a middle-class male eastern audience, it sold escapism through the thrill of catching trout in a romanticized nature: “With such beatific visions whirling in his head, the impatient angler closes his book, and, with a long-drawn sigh, turns back to the work-a-day world, to await the arrival of the hour when he may again sally forth in the pursuit of his favorite pastime—trouting in the enchanting fastnesses of the Colorado or Wyoming wilds.”\textsuperscript{14} The narrative followed the listless businessman as he restored himself on a trout fishing vacation, conveniently along the lines of the Union Pacific. In Wyoming, his fishing party relied on the guiding services of “a rugged Swede,” Henry Olson, to row them down the river, while the businessman engaged in a masculine, life-and-death struggle landing a large trout. In fishing, they likened themselves to the manly guide while discounting the sporting prowess of the party’s women. One picture showed three women holding the stringer of trout

\textsuperscript{11} Colorado and Southern Railway, \textit{Trouting in Colorado’s Waters} (Denver: Smith-Brooks Press, 1907), no pagination.
\textsuperscript{12} Great Northern Railway, \textit{Shooting and Fishing Along the Line of the Great Northern Railway}, 4th ed. (Chicago: Poole Bros., 1901), 12.
\textsuperscript{13} Union Pacific Railroad, \textit{Union Pacific Outings: Fishing in Colorado and Wyoming} ([n.p.]: Union Pacific Railroad, 1909), 19.
\textsuperscript{14} Union Pacific Railroad, 5.
they caught. The caption reads “A String of Speckled Beauties—The Fish, I Mean.”\textsuperscript{15} In their formal attire, the picture demonstrated that the women could catch fish while maintaining proper gender boundaries. The author, however, chose to emphasize how fishing could seemingly restore masculinity, in order to sell more rail tickets.

Common in many of the railroad pamphlets, the Union Pacific booklet described the region, the rivers, the game laws, travel accommodations, while assuring readers that hatchery activities ensured well-stocked streams filled with both native cutthroat and nonnative rainbow and eastern brook trout. The author mustered up some pretty lofty language—even for booster literature—to describe the trout fishing: “There is nothing like it. Trout fishing is a symphony; all is harmony; one can enjoy the sky, the air, the mountains, the pines, the tackle and the fish. It is the highest branch of the delicate art.”\textsuperscript{16} With varying degrees of extravagant descriptions, this and other railroad circulars sold the region as a trout fishing destination, relying on the fish cultural work and trout introductions of the nineteenth century.

Turn-of-the-century anglers and tourists had already started to expect good trout fishing and fish culturalists tried to meet this demand through the widespread introductions and stocking of the nineteenth century. This environmental manipulation took its toll on native fish populations. After the turn of the century, some conservationists and fish culturalists started to lament native fish declines. Their concerns, however, were surpassed in the constricted focus on the popular nonnative species during the mid-twentieth century.

Fish culturalists and resource managers started to rethink the hatchery system during the twentieth century, but their concerns went largely unheeded in the midst of a burgeoning trout culture and economy. In 1918, an aging, nearly blind Dr. James A. Henshall read a paper from a

\textsuperscript{15} Union Pacific Railroad, 28-29.

\textsuperscript{16} Union Pacific Railroad, 5.
young, then unknown federal forester named Aldo Leopold. Leopold’s paper was short, simple, and characteristically visionary. During his time in the Southwest, Leopold noticed that various nonnative trout had been “indiscriminately mixed” with native cutthroat trout, leading to hybridization and infertility, as well as brown trout feeding upon other species and “becoming predominant.”

These observations led to new trout stocking rules within national forests in Arizona and New Mexico. The guidelines set forth that appropriate species should go in suitable waters and multiple species should not be stocked together. Leopold placed high value on native fish: “Stocked waters will not be further mixed. Restock with the best adapted species, the native species always preferred.”

Eventually, these ideas developed into his land ethic, which placed humans in a community of life where decisions needed to go beyond economics as Leopold stated in *A Sand County Almanac*: “Examine each question in terms of what is ethically and esthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise.”

Leopold represented one of many twentieth-century anglers and resource managers who questioned the haphazard introductions of nonnative trout demanded by many anglers and tourists.

Former Bozeman hatchery superintendent James A. Henshall also worried about the fate of native fish as rainbow, brook, and brown trout started to comprise the majority of fish populations in Rocky Mountain waters in the twentieth century. Aldo Leopold’s paper “Mixing

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17 Aldo Leopold, “Mixing Trout in Western Waters,” *Transactions of the American Fisheries Society* 47, no. 3 (June 1918): 101-102 [hereafter TAFS].


19 Quoted in Warren, 229.
Trout in Western Waters” inspired Henshall to rethink his time in the West and his role in transforming the fisheries of the upper Missouri River basin. Long since gone from Bozeman and his hatchery job and now living back in Cincinnati, writing his autobiography for *Forest and Stream*, and devoting his time to water pollution issues, Henshall lamented the decline of native fish, particularly arctic grayling and westslope cutthroat trout, due to various reasons, not in the least, the introduction of new fish species. He also questioned his part in introducing nonnative trout, stating “there was no good reason or valid excuse, except that applicants asked for brook, rainbow or steelhead trout, and they were supplied.”\(^{20}\)

Henshall’s extensive knowledge—“an angling experience of seventy years, and an experience of fifty years as a fish culturalist and naturalist”—gave him an almost unparalleled perspective of the field. He believed Leopold’s ideas mirrored “all practical fish culturalists who have given the matter earnest thought and consideration.”\(^{21}\)

The experiences of Henshall, Leopold, and others, reveal that nonnative trout varieties had already started to surpass native cutthroat trout populations and that trout were not as interchangeable as once imagined by earlier generations of fish culturalists.

Fish managers learned hard lessons in the decline of cutthroat trout and tried unsuccessfully to combat the problem with hatcheries. By the 1920s, yellowfin cutthroat trout were already gone. Henshall recalled that westslope cutthroat had already become scarce in Bridger Creek near the Bozeman hatchery by the time he left in 1909.\(^{22}\) Other cutthroat subspecies’ populations started to decline throughout the Rocky Mountains in the mid-twentieth century, with their ranges restricted to headwaters and mountain streams. To address the problem, state fish managers turned to hatcheries, continuing to stock cutthroat trout, which further intermixed hatchery or nonnative varieties of cutthroat trout with the unique subspecies

\(^{20}\) James A. Henshall, “Indiscriminate and Inconsiderate Planting of Fish,” *TAFS* 48, no. 3 (June 1919): 168.

\(^{21}\) Henshall, 169; 167.

\(^{22}\) Henshall, 167.
of cutthroat trout found in the West’s different watersheds. Federal fish culturalists additionally reared more cutthroat. One fish culturalist observed in 1930 that cutthroat trout declined throughout their range and called for the establishment of a hatchery brood stock. Likewise, the US Bureau of Fisheries continued to annually take three to twenty million cutthroat eggs from Yellowstone National Park in the early twentieth century. During the early to mid-twentieth century, most fish agencies continued stocking native and nonnative trout, focusing most of their attention on supplying popular rainbow, brown, and brook trout for a demanding public. The National Park Service, however, illustrated a notable exception, as the only federal or state agency chiefly concerned with native trout in the rise of the Rocky Mountains’ trout culture.

Responding to native fish declines within national parks as well as throughout the West, within the mandates of the agency itself, the National Park Service created a progressive native fish policy within park borders starting in the 1930s. Fears of hybridization of cutthroat and rainbow trout as well as a desire to protect the last holdouts of native fisheries and barren waters prompted the park service to curtail nonnative fish stocking. But by the time the NPS reversed their native fish policy in the 1930s, nonnative trout already established themselves in Glacier, Yellowstone, Rocky Mountain, and other national parks after decades of trout stocking. Of course, park service management need not be romanticized either. In the late 1920s and early 1930s, Yellowstone employees turned to smashing pelican eggs to lower the numbers of pelicans eating trout, trout reserved for tourists not pelicans. Even with a forward-looking native fish policy, national park managers continued to manipulate fisheries for visitors during the mid-

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25 Paul Schullery, *Searching for Yellowstone: Ecology and Wonder in the Last Wilderness* (Helena: Montana Historical Society Press, 2004), 167. Schullery noted that “In response to sharp and highly publicized criticism from conservation groups, the killing stopped in 1932, but the episode remains one of the most bald-faced instances of favoring tourists over wildlife in the history of the national parks.” Ibid.
twentieth century, while surrounding states and other federal agencies embarked on predominantly nonnative trout policies.

During the railroad era, trout fishing already served as an important recreation for broad segments of the western population. Railroads physically changed the western environment, hauling in loads of trout for regional streams, while planting new ideas that promoted trout tourism through advertising and boosterism. Environmental change reinforced these conceptions, as nonnative trout pushed out native varieties in Rocky Mountain waters. The popularity of fishing and its accompanying trout boosterism grew in the next few decades, becoming even more democratic with widespread automobile use and even more obsessed with nonnative trout. Catering to this growing western fishing and tourist economy, fish managers ramped up their operations in the 1920s and 1930s, building new hatcheries and stocking even more rainbow, brown, and brook trout.

Automobiles, Hatcheries, and Western Trout in the 1920s

With the rise in automobile ownership during the 1920s, fishing became more democratic among western anglers and tourists. This diverse group of anglers showed how recent criticisms of outdoor recreation as strictly middle-class or elite have failed to capture the character of western fishing. The popularity of fishing gave rise to a regional economy based upon nonnative trout as its boosterism and advertisements sold Rocky Mountain fish, rivers, flies, and lifestyles. States and the US Bureau of Fisheries (which became the US Fish and Wildlife Service in 1940) met the increasing demands fueled by the advent of automobile use by building more western hatcheries and stocking larger fish. This rise in fishing in western forests and elsewhere illustrated the rising importance of trout in the midcentury West, a culture that relied on environmental change.
In the 1920s, better standards of living, higher incomes, and the advent of affordable automobiles allowed Americans to spend more time outdoors. Americans in this era left behind the destruction of the Great War and a deadly influenza epidemic to enjoy living the good life sold by an increasing consumer culture. New mass media like the radio and, by 1929, “talkies” in the movies, gave birth to a new cult of celebrity, this new national popular culture lionized baseball heroes like Babe Ruth and adventure seekers like Amelia Earhart. In this spirit, many used their new economic prosperity to head outdoors. In the Rocky Mountains, that often included trout fishing. The automobile democratized this new travel and tourism, providing better access to regional rivers.

The growing numbers of western anglers and tourists could look for trout further from home with automobile travel and its accompanying western road building. Tourists increasingly headed to national forests: “The increased use of automobiles by touring parties, and the movement to construct good roads through the forest reservations are causing more people to seek the reservations each year, and angling is one of the principal attractions.” Cars made tourism and outdoor recreation even more populist, contributing to the growth of a New Western fishing economy and a proliferation of regional styles of fly fishing.

The rise of western fly fishing traditions in the interwar years illustrated the popularity of fishing and its increasing importance in the western economy. While earlier sporting goods stores and tackle shops existed in scattered towns and cities, their numbers grew in the 1910s and 1920s. The rising numbers of anglers provided jobs for numerous professional fly tiers, who

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27 Pomeroy, 127-130.

developed a distinctly regional fly fishing customs in the mid-twentieth century. Relying on local and regional experiences, western fly tiers created homegrown traditions like big weighted nymphs; widespread use of deer hair, elk hair, and other local materials; and widely-used salmonfly and stonefly patterns.

Fly shops sprang up across the West in the early twentieth century, contributing to regional fly fishing styles. In Missoula, former wigmaker Franz B. Pott patented hand-woven bodies and hackles used in his popular “Mite” series of flies in 1925. Montana anglers fished the complex woven flies frequently and other professional fly tiers like Butte’s Wilbur “Bugs” Beaty and George F. Grant and Livingston’s Dan Bailey created their own versions in later years. Fly shops and regional tying traditions continued to evolve during the mid-twentieth century. As this industry grew, so did its advertisements and boosterism.

By the mid-twentieth century, various nonnative trout species thrived in Rocky Mountain waters with the help of anglers and fish managers, supporting a sizable tourism and fishing industry, and all cemented in the imaginations of visitors through local and regional boosterism. In the 1920s and 1930s, local and state governments used road building and the expansion of western infrastructure as a selling point for the tourism industry. They often promoted trout fishing and outdoor recreation, extolling the conveniences of newly-built roads and highways.

One 1940 Montana brochure opened up to a picture of Glacier and other typical tourism scenes. A key attraction proved to be the abundant fishing: “MONTANA HAS 32,000 MILES OF TROUT STREAMS, 4,600 MILES OF IMPROVED HIGHWAYS.”

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29 Pamphlet, “The Pott Trout Flies,” Series I, Box 3, Folder 1, MSS 89: Ted Trueblood Collection, Special Collections, Boise State University. This depression-era catalogue boasted the familiar NRA eagle.
31 Her majesty Montana has a “come-hither” look (Butte: Montana Standard Printers, 1940), no pagination.
advertisements had to balance these connections with their portrayals of a wild west, drawing a fine line between modern conveniences and rugged western experience waiting to be had. A later Wyoming tract dealt with the dilemma by promoting both: “More than 20,000 miles of streams and over 5,000 lakes make Wyoming a fishing paradise…Your car will take you right to the well-stocked water’s edge. Or you can venture into seldom-fished wilderness areas.”32 Other states portrayed their hatchery system as yet another modern amenity. An Idaho pamphlet unabashedly claimed that Idaho had “more fish and game than any other state,” publicizing the millions of trout species, from native cutthroat to nonnative rainbow, brook, and brook trout, stocked yearly in major rivers and their tributaries.33 In selling the West, regional boosters catered to tourists’ desires, whether it be modern amenities or nostalgia for an imagined past. Environmental changes like road building and the growing hatchery system offered important attractions. Like boosters, sporting writers also sold Rocky Mountain trout.

The vast body of angling literature written over the last two centuries prompted one sporting commentator to wryly observe that “Some of the best fishing is done not in water, but in print.” In the twentieth century, many of these books connected the Rocky Mountains to trout fishing. In Some Western Fishing (1926), W. W. Crosby argued that rainbow and brook trout fishing in Glacier National Park and in Colorado surpassed trout fishing anywhere else in the world.34 Similarly, Bertram D. Lackey’s Outwitting Trout With a Fly: Letters of a Western Angler (1929) promoted fly fishing and western conservation through an Izaak Walton style dialogue between two anglers, describing the various native and nonnative trout species available

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32 Wyoming Travel Commission, This is BIG Wyoming (Cheyenne: Wyoming Travel Commission, [1963-1967?]), 24.
34 W. W. Crosby, Some Western Fishing (Baltimore: Waverly Press, 1926), 13, 43.
to California anglers. In the years following, other authors, including Zane Grey, continued to write about western fishing, selling the region to tourists and novice anglers. With the growing cultural and economic importance of trout, fish managers expanded hatchery activities, stocked more and larger trout, and continued their control over nature to ensure good fishing.

The increasing numbers of anglers and their use of the automobile both affirmed fisheries managers’ work and alarmed them in the 1920s. One federal fish culturalist blamed cars in his belief that “interior streams and lakes in all parts of the country have been heavily overfished.”

Fish managers trusted that increased hatchery production provided the solution. One Utah official outlined this optimistic view of fisheries management: “And while in times past Nature was able, with a limited population and inadequate transportation to keep a normal balance of wild life, our present conditions demand a broad constructive program of restocking in order to maintain something like the requisite amount of fish and game to satisfy the ever increasing demand.” With views such as these, they enlarged the western hatchery system.

Starting in the late 1910s and 1920s, new hatcheries helped fish managers stock national forests throughout the West, planting tens of millions of trout yearly to cater to tourists and anglers. State and federal agencies often worked with the US Forest Service during the midcentury to plant trout for increasing numbers of autocampers and anglers heading out into forest lands. During this time, management agencies planted thirty-five to forty million trout annually in national forest waters alone. USFS justified the astounding numbers through both the intrinsic recreational worth and the economic value of trout fishing. One Forest Service

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37 D. H. Madsen, Fourteenth Biennial Report of the Fish and Game Commissioner of the State of Utah, For the Years 1921 and 1922 (Salt Lake City: Arrow Press, [1923?]), 5.
administrator, for instance, wrote of the incalculable value of mountain vacations, allowing
broad segments of the public to get “away from the heat and grind of the cities or the everyday
routine of rural occupations.” He went on, however, to quote another source that had estimated
2.5 billion dollars would be spent in 1925 alone on automobile camping and tourism.\textsuperscript{39} Forecasts
such as these justified increased hatchery work and trout stocking.

Fish agencies both expanded the number of hatcheries and attempted to make their work
more efficient during the 1920s. Longtime Spearfish hatchery superintendent D. C. Booth called
for not more, but more efficient, hatcheries and larger fish to meet the growing demands in the
1920s: “Good roads and the auto are responsible for the depletion of the game trout from many
of the best trout streams and unless this condition is met by a greatly increased output of
fingerling and yearling trout each year, good trout fishing will soon be hard to find.”\textsuperscript{40} Booth
believed that effective stocking practices would address growing fishing pressures. His views
echoed a larger shift in hatchery practices, as state and federal agencies started to stock larger
and larger fish.

In the 1920s, fish management agencies started planting larger fish, not just the eggs or
small fry prevalent in the nineteenth century. This management move reflected years of debate
over efficient and economical ways to stock fish as well as influence of the new consumer
culture of the era.\textsuperscript{41} As early as 1886, American fish culturalists wrote about stocking larger fish.
One federal hatchery superintendent argued that planted eggs and fry had poor survival
percentages, but larger fish could better adapt: “At partial maturity, however, their vitality is far

\textsuperscript{41} For more on this new consumerist view of nature and planting larger fish because of it, see Lawrence M. Lipin,
Debates such as these continued into the twentieth century. By the 1920s, this practice became more accepted. In 1925, the fish culture division chief at the US Bureau of Fisheries argued larger hatchery fish allowed agencies to better address automobiles and increased fishing, the development of more agriculture land, and the continued deforestation that had all negatively affected game fish populations in the era. Other fish managers and anglers agreed.

Rocky Mountain states undertook the planting of larger fish at different times during the mid-twentieth century. In the late 1920s, Utah Fish and Game Department started releasing larger fish, around ten inches long, that could be caught by anglers immediately after planting. Fish managers deemed planted fish longer than nine inches or so, “catchable trout” or “catchable-sized trout.” These catchable trout provided the mainstay in what was described as “put-and-take” stocking programs in which fish managers stocked trout in popular waters and anglers caught them soon after planting (sometimes even lining up and waiting for the hatchery truck). Excluding Utah, Rocky Mountain states did not run large-scale put-and-taking stocking programs until after World War II. In the mid-1920s, other states like Wyoming constructed rearing ponds to raise fish, but usually only up to around six inches in length. As the Wyoming Game and Fish Department reared larger fish, they received help from sporting clubs who raised around one million fish in rearing ponds, then planted in state rivers in the late 1920s. During this era, anglers often assisted state agencies in their work.

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In the 1920s and 1930s, sporting clubs cooperated with state and federal agencies to plant larger fish, operating rearing ponds that grew hatchery fry into larger fish. In *A Remedy for Disappearing Game Fishes* (1930), President Herbert Hoover articulated this viewpoint. Hoover believed that planting larger fish would solve the declining game fish problem throughout the nation: “artificial hatching can be made successful if the fingerlings are carried through infancy to childhood.” He therefore called for the Izaak Walton League and other sporting clubs to maintain “nurseries” (rearing ponds) to lower mortality rates of hatchery fish. Hoover’s concerns went beyond increasing fish populations, he considered fishing restorative to the soul and promoted the sport among all classes of men (but failed to mention women anglers). While reading as a homily on morality in the modern world (although perhaps not as blatant as his 1963 book *Fishing for Fun—And to Wash Your Soul*), Hoover’s and others’ earlier calls to action sparked a briefly lived movement among sporting clubs to operate rearing ponds in the 1920s and 1930s.

As the automobile democratized fishing and tourism in the 1920s, it led to the growth of regional industries based on Rocky Mountain trout. The industry’s advertisements and boosterism further connected the West with nonnative fish. Simultaneously, fisheries managers substantially increased their hatchery work and environmental manipulation, with the assistance of western anglers. Herbert Hoover’s solution in which individual anglers and sporting clubs addressed declining fish populations remained much more popular in the 1930s compared to the same hands-off approach taken by the Hoover administration with the Great Depression. Using the help and funding of anglers and sporting clubs, state and federal agencies continued to transform Rocky Mountain fisheries in the 1930s and onward.

48 Hoover, 4-6.
Regional Fly Fishing Traditions, Hatcheries, and Wilderness Stocking in the 1930s

During the Great Depression, westerners and tourists fished frequently, further enlarging the fishing industry responsible for Rocky Mountain fly fishing traditions. Environmental change accompanied these activities. New Deal projects expanded outdoor recreation infrastructure, while fish managers continued trout introductions, looking to barren lakes in high country wilderness areas to plant trout. Throughout, western anglers of various classes helped develop the importance of Rocky Mountain trout.

In the 1930s, New Deal building expanded western infrastructure even more, providing an extensive transportation network as well as new campgrounds and outdoor recreation facilities throughout public lands. While tourism declined slightly, westerners continued fishing during the Great Depression. Working-class conservationist and fly tier George Grant recalled catching fish for his family and neighbors in Butte.\textsuperscript{49} Sometimes residents could not even afford fishing licenses. In the midst of the depression, one elderly woman wrote to the governor of Idaho requesting fishing licenses for her and her friends, “We have no car and are all widows [sic] and love to fish. Mrs. Paul Gourley is 67 and Mrs. Green 62.”\textsuperscript{50} The governor obliged. Like the three fishing widows, westerners looked to the land to provide in lean times. The popularity of trout fishing, whether for food or fun, contributed to the growing fishing economy and Rocky Mountain fishing traditions.

During the mid-twentieth century, the western trout industry continued to expand. Most fly shops also doubled as outfitters, employing fishing guides on popular western rivers during tourist season. Dan Bailey ran a long-time fly shop and outfitting service in Livingston, moving to Montana in the 1930s after reading a newspaper article about the amazing trout fishing. His

\textsuperscript{49} Munday, 24.
\textsuperscript{50} Mrs. J. W. Shumate to C. Ben Ross, 31 July 1934, Box 5, Folder 6, AR2/15: Governor C. Ben Ross Records, ISHS.
yearly catalogue sold flies and fishing gear—and promoted the same views of the West that lured Bailey out in the first place. During the mid-twentieth century, fishing shops also often employed women tiers to meet customer demands. Many Livingston housewives worked in Bailey’s shop. Likewise, former wigmaker Franz Pott hired young college women from the University of Montana to help with the craft. The western fly shops illustrated the importance of trout in the region’s economy, marking environmental changes and resultant fly fishing traditions.

Western fly patterns frequently mimicked the salmonflies and stoneflies prevalent in large western rivers and a favorite trout food, one of the reasons that John Wilson’s fancy fly pattern the Professor may have been popular in the West during the nineteenth century. The giant insects live underwater most of the year. As the water drops, they come out of the water to hatch, gaining a pair of wings to reproduce and lay eggs on the water’s surface. Fly fishing westerners and tourists have mythologized these late spring and summer hatcheries almost as much as trout and fly fishing in the Rocky Mountains. Needless to say, fly fishers have tied bug puppets to imitate both the underwater nymph and the adult form. Immortalized in A River Runs Through It, Missoula tier Norman Means’s Bunyan Bugs represented a popular western dry fly; the pattern had colored cork with painted-on patterns and simple hair wings extending out each side. Other Rocky Mountain fly patterns were also adapted to regional conditions.

The western fly fishing tradition arose, in part, with the need to conform eastern and European flies to Rocky Mountain trout streams. Some tiers relied on local materials. Longtime Missoula shop owner and member of the Western Montana Fish and Game Association, Jack Boehme originally tied his popular fly, the Picket Pin, out of gopher tail. Other patterns used

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51 Owens, 14-15.
52 George F. Grant, Montana Trout Flies ([Butte?): privately printed, 1972), no pagination.
53 See Schullery, Cowboy Trout, 135.
badger hair; for instance, Franz Pott weaved badger hair into some of his popular Mite patterns.\textsuperscript{54} After the postwar rise of spin fishing, some patterns never regained their popularity or were lost to posterity, other patterns continued to be used and adapted on western rivers.\textsuperscript{55} Renowned Jackson Hole guide Jack Dennis observed in the 1970s that certain fly patterns like the Trude remained popular. He described regional fly styles often included more hackle and stiffer tails, needed for buoyancy on swift, western rivers. The patterns were often tied larger than their eastern counterparts, like the stonefly nymphs and dry flies so popular in the West.\textsuperscript{56} Dennis noted that many Colorado anglers like Jim Poor often adapted or “Westernized” fly patterns, like the Colorado Captain.\textsuperscript{57} The emergence of these western flies and traditions in the mid-twentieth century indicated larger economic and cultural changes in the Rocky Mountains. Trout fishing’s popularity among residents and tourists helped sustain a regional service economy in which new fishing practices arose. This industry relied on a hatchery system and widespread environmental changes.

Federal and state governments built many new federal and state hatcheries from the mid-1910s to the 1930s to meet the demand of the expanding tourist and recreation economy after 1920. During the depression, New Deal programs funded this expansion. Rocky Mountain state agencies controlled numerous hatcheries that produced tens of millions of trout yearly. By 1929, Colorado operated fifteen different hatcheries; Idaho had eleven; Montana had fourteen, Utah

\textsuperscript{54} Grant, \textit{Montana Trout Flies}.
\textsuperscript{55} In \textit{Montana Trout Flies}, George Grant noted that one of the most popular flies, the Dr. Mummy, lost popularity in the postwar years due to spin fishing: “The Dr. Mummy was a most popular fly until the advent of the spinning reel about 1950 when flyfishing [sic] went into a decline in Montana, and many of these old patterns were lost because they were unknown to a new generation of fly-tyers [sic] and fly fishermen when the fly resurgence occurred.” Grant, no pagination.
\textsuperscript{57} Dennis, 71.
had eight, and Wyoming had eight. The yearly output totaled over one hundred million trout.\textsuperscript{58} State agencies additionally started more rearing ponds. For example, members of the Wyoming Division of the Izaak Walton League of America and other sporting clubs, Civilian Conservation Corps and Works Progress Administration workers, and employees of the Wyoming Game and Fish Department all constructed more Wyoming rearing ponds during the 1930s.\textsuperscript{59} On top of state work, the federal government enlarged its own hatcheries.

During the mid-twentieth century, the US Bureau of Fisheries pumped even more trout into Rocky Mountain waters. By 1935, the agency ran six main stations in Bozeman; Leadville; Spearfish; Hagerman, Idaho; Saratoga, Wyoming; and Springville, Utah and numerous substations and egg collecting stations, all producing trout for the region.\textsuperscript{60} The US Bureau of Fisheries justified expansion of hatcheries because of conservation as well as the economic prominence of trout fishing: “The increasing importance of this type of recreation and the opening of new and better roads to the waters makes necessary the expansion of game fish cultural facilities. The work has also a monetary value, visible in the income from licenses, expenditures for guides, boats, bait, tackle, lodging, transportation, and the various other items which go to make up the cost of a fishing trip.”\textsuperscript{61} The cultural and economic importance of trout served as grounds to remake Rocky Mountain fisheries.

\textsuperscript{59} Andrew J. Martin, \textit{Biennial Report, State Game and Fish Department Wyoming, January 1, 1935-January 1, 1937} (Cheyenne: Game and Fish Department, [1937?]), 15.
During the mid-twentieth century, western anglers and fish agencies expanded this regional trout culture into wilderness areas. They planted millions of nonnative trout in previously barren mountain lakes. These trout introduction took place amid a growing wilderness movement (and received little criticism from it). Started by middle- and upper-class easterners, the Wilderness Society sought to preserve forest lands from what they saw as hordes of tourists and autocampers building roads. Yet wilderness ethics also found support among westerners of varied backgrounds, including Finis Mitchell, a Wyoming resident who helped stock high country lakes in the Wind Rivers. Mitchell’s involvement illustrates the democratic character of trout introductions that transformed wilderness environments in the Rockies.

The Rocky Mountains contain thousands of high country lakes, nestled in mountain cirques at high elevations. Ninety-five percent of high western lakes originally did not contain fish due to barriers formed by the Pleistocene ice age. But the western trout culture changed all that, dramatically transforming high country lakes during the midcentury: “…of the estimated 16,000 naturally fishless mountain lakes in the western US, the majority of which are located within national parks and wilderness areas, 60% of lakes and 95% of larger deeper lakes now contain nonnative trout…” Finis Mitchell and others converted these mountain lakes into trout fisheries.

Growing up on a failing Wyoming homestead near the Wind River Mountains, the Mitchell family supplemented their existence through hunting and fishing. Finis Mitchell remembered, “We were poorer than church mice. We lived on antelope meat, potatoes and

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63 Susan B. Adams, Christopher A. Frissell, and Bruce E. Rieman, “Geography of Invasion in Mountain Streams: Consequences of Headwater Lake Fish Introductions,” *Ecosystems* 4, no. 4 (June 2001): 297.
64 Knapp, Corn, and Schindler, 275.
fish.”65 First climbing mountains in 1909 as a young boy accompanying his father on an elk hunt, the trip started Mitchell’s fascination with the Wind Rivers.66 For the rest of his life, he spent much of his time climbing, fishing, and taking photographs in the range. As an adult, Mitchell worked for the Union Pacific Railroad until he was laid off during the Great Depression. Like many Americans, he turned to the land for a livelihood, in this case, opening a fish camp near Mud Lake in the Bridger National Forest.67 Mitchell used this experience to promote the value of American wilderness, later writing:

Throughout this century I’ve roamed this wilderness, communing with nature, observing other creatures along with myself, merely desiring to live and let live. Because of this aloneness, I’ve learned to love, not only those of my own kind, but all life within a wilderness; the birds, the beasts, the trees, the flowers, and the grasses of the land. Only in wilderness, it seems, is man’s love so thoroughly and completely returned, so unselfishly shared.68

His time in the forested mountains led him to appreciate nature as a whole and the importance of protecting land from further development. Mitchell took this opportunity to stock trout in the barren lakes high in the Wind Rivers. From their inception up until the mid-twentieth century, hatcheries relied on the labor of enthusiasts like Finis Mitchell to stock trout and introduce them to new waters. Mitchell perhaps took this to an extreme, planting 2.5 million brook, rainbow, cutthroat, golden, or brown trout in 314 lakes during the 1930s. Mitchell, however, was not the only one transforming these mountain environments, other residents also stocked nearby lakes and rivers.69

65 Clipping, “Pioneer Conservationist Receives Degree,” Box 1, Folder Biographical Information [no folder number], Collection #3190: Finis Mitchell Papers, American Heritage Center, University of Wyoming, Laramie [hereafter AHC].
68 Mitchell, 12.
69 Nichols, 26-30.
Even with the advent of the automobile and massive road building in the national forests, high country lake stocking before World War II had to be powered by animals and humans. For Finis Mitchell, this meant using a string of pack horses. Under an agreement with Wyoming’s Daniel hatchery superintendent, the state hatchery delivered milk cans of trout to their Mud Lake base camp. Mitchell would then load six horses with a can on each side. The milk cans, filled with one thousand trout fingerling each, were covered in burlap, and the movement of the horses would aerate the water, ensuring the fish would not die on the way. While the workers loaded each horse, someone would have to lead the already-loaded horses around to ensure aeration. Once on the trail, they would have to occasionally stop along a stream to refill the water lost out the burlap cover because of the horse’s movement. After reaching the lake, the cans would be poured in the water. Some trout died on the journey or after being planted, but many of these early introductions were successful. Sometimes stocking lakes in the high country required more effort, illustrating the entrenched Rocky Mountain trout culture.

High mountain lakes often were inaccessible to pack animals, requiring a tremendous amount of human labor to create high elevation trout fisheries. To plant trout in a lake in the Medicine Bow National Forest in 1925, two forest rangers had to slide down a steep scree slope with the cans of trout perched in their laps. It took them nearly two hours to hike back up. In Glacier National Park, many of the first introductions in 1922 had to be packed in by National Park Service and US Bureau of Fisheries employees. The men carried these heavy packs of fish and also ice through the park, into high elevations, to stock barren lakes in the park, while coming across the occasional grizzly bear. That first summer, they stocked eight streams and

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70 Mitchell, 8, Nichols, 26.
71 Clipping [1925?], Series I, Box 6, Folder 14, Collection #400008: Grace Raymond Hebard Papers, AHC.
twelve lakes with two million cutthroat trout eggs. These efforts expanded a western trout culture, but were surpassed in the postwar years by new transportation methods.

During the depression, the Rocky Mountain trout culture continued to grow, developing regional fly fishing traditions within a growing fishing and tourism industry. According to state and federal agencies, these conditions warranted the further increase in the western hatchery system. Accordingly, fisheries management agencies, with the help of willing western anglers, expanded the region’s nonnative trout fisheries, even going as far as stocking trout in remote, high country lakes deep in wilderness areas. Fishing became even more popular in the years after World War II, yielding further environmental change in Rocky Mountain waters.

**Spin Fishing, Cold War Boosterism, and Put-and-Take Fishing in the Postwar West**

The nation’s entry into World War II marked the end of the hard times for many and ushered in vast changes in the American West. With a new economic prosperity after the war, Americans spent increasing time outdoors. Many, of course, fished for trout. As fishing contained the same diversity of practitioners as in previous decades, it also held similar environmental consequences, namely, the continued use of an entrenched western hatchery system. Print culture affirmed that trout held a central place in western recreation and tourism, while fisheries managers reaffirmed this identity through the use of hatcheries. In the postwar years, fish managers started extensive put-and-take stocking programs in order to meet these new demands, planting catchable-sized trout that mirrored the consumerist mentality of postwar America.

World War II and the subsequent Cold War transformed western landscapes. Increasing urbanization and militarization, precipitated by New Deal regional planning and dam building.

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led to the eventual rise of the Sunbelt and the shift of the nation’s political and economic power to the South and West. Most of the transformations occurred along the West Coast and southwestern cities like Phoenix and Dallas-Fort Worth but, to a lesser extent, the intermountain West was also swept up in these changes. Yet not everyone welcomed the societal changes due to war mobilization. The Utah fish and game commissioner complained in 1946 of newcomers who did not share the same outdoor traditions and conservation ethics: “During the war and the period of adjustment following, we have had an ingress of thousands of out-of-state people who have not taken with any too much pride the fine fishing and hunting that we have been able to furnish. In many instances, we have found the war industrial workers to be among our most promiscuous law offenders.”73 Within the rise of the modern West, the Rocky Mountains became even more of a tourist and recreation destination.

Inland states saw a tremendous increase in outdoor recreation and tourism during the postwar years. Many of these new anglers took up spin fishing, representing a break from earlier eras as well as the immigration from other regions without fly fishing traditions. Spin fishing was easier to learn and less complicated for casting than fly fishing gear because it relied on the weight of the lure to shoot line out from a free-spooling reel.74 Improved by World War II-era technological innovations and manufactured cheaply, the rise of spin fishing reflected postwar mass production and mass consumption, and it was not until the 1970s that fly fishing started to regain its popularity.75 The numbers of trout fishers grew throughout the mid-twentieth century, giving rise to an outdoor recreation and tourism economy that also flourished in this trout

73 Utah State Fish and Game Commission, Twenty-sixth Biennial Report of the State fish and Game Commission of the State of Utah, July 1, 1944 to June 30, 1946 (n.p.: [1946?]), 40.
culture. State and local governments, chambers of commerce, fly shop and outfitters, all sold Rocky Mountain trout fishing in the postwar era. To attract visitors, the “West plays West” as historian Earl Pomeroy described it in the 1950s, promoting a mythical region and idea from television westerns more than a reality.\textsuperscript{76}

In the post-World War II years, Rocky Mountain tourist advertisements frequently played on the Cold War fascination with the frontier, which offered Americans a sanitized version of history. Familiar in their simple morality (good guys wearing white hats), and masculinity, television westerns propped frontier history on a pedestal.\textsuperscript{77} State travel and tourism boards took advantage of this imagined past to promote their states. In the \textit{Wyoming Historical Handbook} (1950), the Wyoming Travel Commission wrote a watered-down state history. Briefly touching on the native inhabitants, the fur trade, and the decline of the buffalo, the pamphlet glorified the state’s development, from being the first state to grant women suffrage to the importance of the cattle, coal, and oil industries.\textsuperscript{78} Of course, no western tourism tract could be complete without an overview of the outdoor attractions. Wyoming’s fish and game proved to be a key feature. Booster materials characteristically presented their states as better than others: “The entire state of Wyoming constitutes a fish and game paradise unsurpassed by any other section or state in the nation.” In this large area, anglers could find abundant native and nonnative fish, including “eight trout species.”\textsuperscript{79} To extol the virtues of western trout streams, boosters sometimes turned to a nostalgic past to create a New Western regional identity. Conversely, postwar fishing and

\textsuperscript{76} Pomeroy, 225.
\textsuperscript{77} For more on Cold War westerners, see Richard Slotkin, \textit{Gunfighter Nation: The Myth of the Frontier in Twentieth-Century America} (New York: Atheneum, 1992), chs. 11 and 12.
\textsuperscript{78} Wyoming Travel Commission, \textit{Wyoming Historical Handbook} (Cheyenne: Wyoming Travel Commission, 1950), 6-16.
\textsuperscript{79} Wyoming Travel Commission, 24.
guide books tended to rely less on mythologized history and more on the realities of catching trout.

After World War II, the amount of literature focused on western trout mushroomed, mirroring the mass of people engaging in tourism and outdoor recreation. Postwar fishing books obviously promoted Rocky Mountain trout. Ray Bergman’s popular, if prosaically named, *Trout*, went through three editions and dozens of reprintings from 1938 to 1976. While not constrained to the West, Bergman used many experiences in Rocky Mountain states and Yellowstone National Park to provide a how-to guide to growing numbers of anglers. The second edition in 1952 added chapters on spin fishing to cater to its postwar popularity. Other authors focused solely on the West, taking advantage of the growing tourism industry. In *Western Trout* (1948), Syl MacDowell observed that trout had become “big business” in the West, with higher proportions of western residents fishing compared to their eastern counterparts as well as a multi-million dollar tourist industry. Trout fishing’s cultural and economic value translated into political importance: “One U.S. Senator from the West launched his political career on a campaign pledge to plant fish in an important voting district. There are a great many other instances in which angling has become a political issue. Western trout are important in business and politics. They are represented in Chamber of Commerce meetings, in trade forums, and in law-making assemblies.”

Unlike the booster literature published by these political bodies, fishing writers often promoted limited catches and other conservation ethics. In *Fishing in the West* (1950), wilderness defender Arthur Carhart warned against believing chamber of commerce descriptions of streams ‘teaming with trout,” without considering the dam building and environmental

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The degradation of the postwar era.\textsuperscript{81} The fishing in print, however, still sold a West with trout. The growing tourism and fishing industries in the Rocky Mountains over time show that midcentury boosterism represented more than just extravagant claims, but a material reality of pretty good trout fishing. The portrayals of western nature as a place for play, however, obscured the profound manipulation of fish and rivers over time.

By the 1940s, the Rocky Mountain states had all shifted their hatchery practices to ensure good fishing for the loads of postwar recreationalists. They largely ended the use of rearing ponds among sporting clubs, continued wilderness stocking, and, most importantly, started put-and-take stocking practices. All these management techniques served to further the environmental change in Rocky Mountain fisheries.

By the end of the war, most sporting clubs had discontinued their rearing pond work. Plagued by problems with funding and productivity, state agencies found it more efficient to raise trout themselves rather than in amateur-run ponds. Similar to other states, in the 1940s, Wyoming officials reported a large number of failures of rearing ponds and their subsequent abandonment.\textsuperscript{82} Management agencies overtook the work once cooperatively done by both the government and private anglers, like wilderness trout stocking and other introductions that once were the joint venture of both anglers and agencies.

Stocking barren mountain lakes continued after World War II, aided by aircraft instead of horses, mules, and anglers. In the postwar era, airplanes and helicopters became more accessible for civilian use, while veterans could use their wartime skills to remake fish life in wilderness lakes. Aircraft also made the task easier, cheaper, and more efficient.\textsuperscript{83} Of the eight hundred or

\textsuperscript{81} Arthur H. Carhart, \textit{Fishing in the West} (New York: Macmillan, 1950), 123.
\textsuperscript{82} Robert Grieve, \textit{Biennial Report of the Wyoming Game and Fish Commission 1941-1942} (Cheyenne: Wyoming Game and Fish Department, [1943?]), 43.
These actions have produced some interesting backcountry fisheries, allowing anglers who drive far into the mountains, hike up several thousand vertical feet on steep single-track trails, the opportunity to catch nonnative trout. On the right day, they might even catch a glimpse of a helicopter dumping out trout fry while hovering overhead. Despite the recent questioning of adding fish where they previously did not exist, few people at the time objected to this practice. High country lakes are still routinely stocked using aircraft, including more than seven thousand western lakes that are currently maintained through these methods.\(^{85}\)

Perhaps the most transformative for Rocky Mountains fisheries, however, was not wilderness stocking, but rather the rise of put-and-take fisheries management.

In the postwar era, Rocky Mountain states routinely stocked catchable-sized trout, mostly rainbow trout, as part of massive put-and-take stocking programs. Like the mass-produced spin fishing gear of the postwar period, these larger fish catered to a new consumer view of nature. State agencies supplied these new fishing demands.\(^{86}\) Illustrating this new concept in fisheries management that relied on the same optimism of previous generations of fish culturalists, one Utah state fish commissioner proudly observed that “Fisheries management is nothing more than aquatic farming.”\(^{87}\)

Anglers and new generations of fisheries managers would later criticize and, in some places, stop stocking catchable-sized trout. During the 1940s and 1950s, however, put-and-take stocking epitomized the continued hubris of western hatchery management and the new


\(^{85}\) Roland A. Knapp, Paul Stephen Corn, and Daniel E. Schindler, “The Introduction of Nonnative Fish into Wilderness Lakes: Good Intentions, Conflicting Mandates, and Unintended Consequences,” *Ecosystems* 4, no. 4 (June 2001): 275. For wilderness stocking in general, see the special issue of *Ecosystems* 4, no. 4 (June 2001) on “Fish Stocking Impacts to Mountain Lake Ecosystems.”

\(^{86}\) See for example, Utah Fish and Game Commission, *Twenty-sixth Biennial Report*, 16.

postwar views that nature could be produced and consumed like other commodities in the Cold War economy.

Conclusion

With hatcheries and a trout fishing culture, tourists, western anglers, and fish managers all constructed an inland West known for its trout fishing opportunities during the mid-twentieth century. During the railroad era, fishing represented a common pastime for many westerners and small numbers of elite tourists who could afford the spendy fares to the West. Over time, however, fishing and tourism became more democratic, with the help of rising standards of living and increasing automobile ownership. In the Rocky Mountains, the growth of the fishing industry started regional fly fishing traditions in the 1920s and 1930s, which were somewhat surpassed by the popularity of spin fishing in the post-World War II era. Regardless of tackle, anglers and tourists demanded good trout fishing throughout the twentieth century. The cultural and economic changes in the region show how the importance of nonnative trout overpowered concerns about native fish in the Rocky Mountains. Rather than focus on saving declining native trout and other fish species, fish managers scaled up the western hatchery system to continue stocking more and larger nonnative rainbow, brown, and brook trout. The extent of the manipulation demonstrated how trout fishing, like other outdoor recreation activities, had profound environmental consequences, ones often ignored by historians who have focused solely on sport and outdoor recreation. The next chapter illustrates that this reckoning of place held even more environmental costs, examining how anglers and managers ignored or mistreated other native fish. This Rocky Mountain trout culture shaped and amplified an earlier hostility towards non-trout species that stemmed from British and eastern American sporting ideals. In
this manner, local and regional people and environments yet again modified larger ideas and processes at the expense of native fish and ecosystems.
CHAPTER FOUR
TRASH FISH

In Norman Maclean’s anthem to family and fly fishing, *A River Runs through It*, Montana fishing in the 1930s meant catching trout, gigantic nonnative ones, to be specific. The book’s publication in 1976, and the later Robert Redford film adaptation in 1992, helped foster a mythologized image of western trout fishing among readers, movie goers, and inspired tourists (while some Montana anglers blamed the movie for their crowded trout streams). In one part of the novella, Norman and his brother Paul reluctantly take Norman’s hungover brother-in-law Neal fishing. Neal’s failure to catch trout illustrates an animosity towards native fish among Montana anglers during the rise of the West’s trout culture:

‘What are you doing?’ I asked.
It took him some time to arrange an answer. ‘I have been fishing,’ he said finally. Then he tried over again for greater accuracy. ‘I have been fishing and not feeling well,’ he said.
‘This dead water isn’t much of a place to fish, is it?’ I asked.
‘Why,’ he said, ‘look at all those fish at the bottom of the hole.’
‘Those are squaw fish and suckers,’ I told him, without looking.
‘What’s a sucker?’ he asked, and so became the first native of Montana ever to sit on a rock and ask what a sucker was.¹

Here, Maclean uses suckers and squawfish—two disliked native species—to serve as a humorous apologue: as a double-sweater-wearing “fancy Dan,” Neal did not quite fit in trout country. Neither did suckers, squawfish, and other native coarse fish to many trout fishers in the creation of a Rocky Mountain trout culture during the mid-twentieth century.

¹ Norman Maclean, *A River Runs through It and Other Stories* (Chicago: University of Chicago Press, 1976), 38. Now known as pikeminnow, squawfish became a derogatory common name for fish in the *pikeminnow* genus during the late nineteenth and early twentieth centuries. A lengthier discussion of the changing terminology follows later in this chapter.
The midcentury emergence of a regional trout culture and economy depended on the well-established western hatchery system after the 1930s. As nonnative trout started to overrun western rivers, creeks, and even remote high country lakes, western anglers and fish managers developed a sizable tourism and fishing industry, helped along by regional boosterism that seemed to naturalize these changes. Long before Maclean penned his classic, westerners and non-westerners alike took for granted that fishing assumed trout. These beliefs encouraged anglers and fisheries managers to marginalize and even kill western native fish like Neal’s suckers and squawfish.

Under the banner of conservation, people have exterminated a lot of critters to save the environment or to protect favored animals. Westerners and management agencies have targeted a wide range of animals labeled as either predators or pests, from wolves and prairie dogs to native fish.\(^2\) The poor treatment of native coarse fish (simply defined by Euroamerican angling culture as most other fish species besides trout and salmon) reveals a historical trend that began with the late nineteenth century rise of state conservation and has continued, at least in part, until today.

Coarse fish have occupied a contested place within sporting culture since the nineteenth century when English and eastern American anglers frequently debated the food and game merits of coarse fish versus “game” fish like trout and salmon. While some anglers deliberately sought coarse fish species and championed their sport and food value, most others fished for the more appealing species of trout and salmon. In these arguments, class determined quarry; many

middle- and upper-class anglers on both sides of the Atlantic defined their class and sport by the species they pursued. They privileged beautiful trout—a charismatic microfauna of the animal world—over the dull, scaly, sucker-mouthed coarse fish. Such seemingly trivial cosmetic judgments played a deathly serious role in the treatment of coarse fish and helped to determine state fisheries management practices in the Rocky Mountain West by the late nineteenth century. While individual anglers could choose to ignore or throw away these disliked coarse fish, starting in the 1890s, state management agencies codified these prejudices through regulations and management techniques with far more systematic harm. Anglers, hatcheries, and fish managers perpetuated a trout fishing aesthetic, derived from European roots, refined on eastern rivers, and then superimposed on the western landscape.

By the mid-twentieth century, the regional trout culture and economy created even more discrimination against western native fish like those unheeded suckers and squawfish in Norman Maclean’s story. Coarse fish came to be known as “trash fish” during this time. The new terminology illustrated the growing importance of nonnative trout and the marginalization of other native fish in a lucrative sport fishing economy. Within this emerging trout context, fish managers aimed to improve fishing and reshape fisheries by controlling these “trash fish” populations that they believed competed with trout. To do so, they turned to a wide range of techniques, from dynamite and nets to fish toxicants. The institutionalized trout culture within fisheries management continued its eradication work, even inventing new fish toxicants to kill “trash fish,” despite the 1960s rise of environmentalism that championed wild animals and ecological health. By midcentury, the eradication programs and continued disputes over coarse fish revealed that, in this trout culture, some fish were more equal than others.
The history of this interplay between culture and nature in maligning coarse fish informs many of the present problems surrounding invasive species and declining biodiversity. This chapter argues that the ways in which many anglers, tourists, and fish managers understood place—the West as a manufactured trouty place—proved deadly for native, non-trout species. The biodiversity crisis among western coarse fish species has a history. Nineteenth-century sporting culture derided coarse fish in class, race, and gender contexts that influenced western state management. As transnational sporting ideals influenced western anglers and fish managers, the previous uses and positive perspectives of native fish eventually eroded. Homogeneous fisheries management and hatchery nonnative trout replaced the early regional importance of native western fish. In this new region, endemic species and subspecies no longer mattered. By the midcentury creation of a trout culture, anglers and fisheries managers escalated their efforts to kill coarse fish species. Ideas of beauty shaped these decisions, privileging beautiful trout over less than fetching coarse fish. This history produced lasting consequences for Rocky Mountain coarse fish that extends into the twenty-first century.

Native Fish in a Trout Culture

The current grim status of native fish compared to the celebrated trout suggests the need to reexamine the Rocky Mountain West’s connection to nonnative trout and the legacy of its trout culture. For the most part, native fish populations throughout the world have declined in the twentieth century, with habitat destruction and the introduction of nonnative species representing two major causes. Native cutthroat trout and bull trout occupy little of their former range and various subspecies are extinct, endangered or, in the case of cutthroat trout, hybridized with rainbow trout. Native coarse fish populations have followed a similar trajectory. In the Rocky

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Mountains, the Utah Lake sculpin, the Snake River sucker, and a subspecies of the June sucker are extinct. Other species are close to the same fate. The American Fisheries Society considers the following endangered: white sturgeon; pallid sturgeon; humpback chub; bonytail; Virgin River chub; least chub; peppered chub; woundfin; Colorado pikeminnow; Kendall Warm Springs dace; June sucker; and the razorback sucker. Dozens more are listed as threatened or vulnerable.⁴ These coarse fish may never return to their historic populations and are on the brink of extinction. Nevertheless, the story of some western coarse species cannot be told in a simple tale of decline. Some coarse fish continue to have large populations, but remain more susceptible to population crashes in a region that has privileged trout.

Mountain whitefish serve as an indicator species of the poor treatment of native “non-game” fish in western rivers that had been transformed into lucrative sport fishing destinations that relied on nonnative trout by the mid-twentieth century.⁵ Yet, compared to the above extinct and endangered species, mountain whitefish have accomplished an amazing feat during the twentieth century: with some key exceptions, mountain whitefish survived and resisted the years of habitat change, the mistreatment from anglers who considered them trash fish, and government agencies’ failure to manage coarse species in their focus on trout. Many western waters like the Madison River in southwest Montana still contain sizable populations, to the annoyance of some trout fishers. Mountain whitefish, however, are on the verge of disappearing from the Big Lost River, one of the isolated Sinks Drainages that holds a genetically divergent population, near Arco, Idaho. By 2005, the adult mountain whitefish numbers there had dropped

⁵ In certain western trout waters, mountain whitefish serve an important role as an indicator species, alerting biologists to ecological problems like pollution or low water temperatures that may endanger other fish populations or drinking water sources. Kevin A. Meyer, F. Steven Elle, and James A. Lamansky, Jr., “Environmental Factors Related to the Distribution, Abundance, and Life History Characteristics of Mountain Whitefish in Idaho,” *North American Journal of Fisheries Management* 29, no. 3 (June 2009): 753
to only 1.5 percent of their historic population. When the population declined precipitously, the
Idaho Fish and Game Department lowered the daily catch limit and started to worry about the
species’ future there because small populations run the risk of extinction through genetic
inbreeding. Fisheries managers struggled to understand the decline and scrambled to find
suitable management practices since few scientific studies exist on mountain whitefish.\(^6\)

The Big Lost River dilemma indicates yet another problem of being a coarse fish in a
tROUT world. As a coarse fish with generally high populations throughout the West, mountain
whitefish were overlooked in the Big Lost River. Few scientific studies or management strategies
have focused on coarse fish because managers historically privileged trout over trash fish. This
deficiency now makes it hard for fisheries managers to catch up when a species starts to decline.\(^7\)
The present vulnerability of coarse fish can only be understood by examining nineteenth-century
sporting culture.

The Game/Coarse Fish Divide

The poor treatment of coarse fish in modern fisheries management dates back centuries to
origins in the intellectual and class history of British angling, which directly influenced
American and Rocky Mountain sport and management by elevating trout over coarse fish.

British anglers often upheld trout and salmon as favored prey. However, by the eighteenth and

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\(^6\) Idaho Department of Fish and Game, *Mountain Whitefish Conservation and Management Plan for the Big Lost River Drainage, Idaho* (May 2007), 3-23; 15-16,

\(^7\) Cooke, et al., have observed: “Generally, non-game fishes lack comprehensive management strategies, and those species are often pushed to extinction without the declines being noticed.” Steven J. Cooke, et al., “Threats, Conservation Strategies, and Prognosis for Suckers (Catostomidae) in North America: Insights from Regional Case Studies of a Diverse Family of Non-Game Fishes,” *Biological Conservation* 121, no. 3 (Feb. 2005): 318.
nineteenth centuries, enclosure laws and high rents on good fishing waters had created a class divide between game fishing (trout and salmon) and coarse fishing in Britain. Seeking profit in a developing capitalist world, landowners fenced traditional pastures and forests as well as pushed commercial fishermen and lower classes from traditional fishing waters. Good fishing waters that contained game fish like trout and salmon demanded high rents that only elite anglers and middle-class clubs could pay. Unable to afford access to trout and salmon waters, the lower and working classes resorted to fishing for coarse fish. Fishing writer Francis Francis observed a British contempt for coarse fish in 1863. As an elite angler, Francis connected coarse fish to poorer classes and Jews in England. Influenced by their own concerns with race and class, Francis and others within the British sporting establishment attempted to set themselves apart by trout fishing. For their part, working-class anglers often resented being expelled from nearby trout and game fish waters. Class, then, defined quarry. However, as one British sport historian has noted, the game and coarse fish divide was “never absolute.”

Sport fishing culture never remained homogenous and anglers of all classes constantly disagreed about the value of coarse fish. Anglers’ esteem for species depended on location and individual preferences, despite being shaded by the social context of Euroamerican sporting ideals. In one instance, on a fishing trip that included friends (and the editors of England’s most

9 Francis Francis, Fish-Culture: A Practical Guide to the Modern System of Breeding and Rearing Fish (London: Routledge, Warne, and Routledge, 1863), 122-133. Francis was the long-time angling editor of the authoritative sporting periodical The Field and also briefly served as the piscicultural director for the English Acclimatization Society, an organization that introduced new species of plants and animals throughout Great Britain.
10 John Lowerson, “Brothers of the Angle: Coarse Fishing and English Working-Class Culture, 1850-1914,” in Pleasure, Profit, Proselytism: British Culture and Sport at Home and Abroad, 1700-1914, ed. J. A. Mangan (London: Frank Cass, 1988), 106-107. In the years following enclosures and the divide between British game and coarse fishing, a vibrant coarse and roach fishing culture sprung up among the skilled artisans and working-class fishermen, admired so greatly by Roderick Haig-Brown. The English emigrant and noted Canadian conservationist believed that these coarse fishermen were “more truly representative of British angling than all the trout and salmon fishermen about whom the books are written.” Roderick L. Haig-Brown, A River Never Sleeps (1946; repr., New York: Skyhorse Publishing, 2010), 53.
11 John Lowerson, Sport and the English Middle Classes, 1870-1914 (Manchester: Manchester University Press, 1993), 43.
read sporting magazines), R. B. Marston of the *Fishing Gazette* and William Senior (aka “Red Spinner”) of *The Field*, Senior demonstrated the sport to be had in coarse fishing. After Marston’s wife landed a roach—one of those disliked coarse fish—on a dry fly and was annoyed, Senior tried for the rest of the day to recreate the achievement. The anecdote illustrates anglers’ individual experiences also played a role in valuing coarse fish. Senior’s editorial role advanced the sport of angling, but he defied mainstream definitions of game and coarse to find sport. Similar debates and ambiguities over coarse fish arose on the other side of the Atlantic, contributing to Rocky Mountain sport and fisheries management and illustrating the importance of local and regional dynamics in shaping transnational ideas and processes.

Although limited access to trout waters did not plague American anglers since fish and game belonged to the public, coarse fishing has never really been a part of the mainstream fishing culture. British sporting culture influenced American anglers and their ideas about coarse fish; American sporting culture also valued trout rather than coarse fish. British immigrant Henry William Herbert did the most to bring these sporting ideals to an American audience, while helping to create a uniquely American angling tradition based on brook trout. In one of the earliest American angling books, he defined both game and coarse fishing. Game fish had a fighting spirit and good taste. Coarse fish, on the other hand, held little value for the angler. Indeed, Herbert believed coarse fish in eastern North America, like chub, suckers, shiners, roach, dace, and bream were “of no account except for bait” and only the imported common carp and golden carp from Europe had any worth. In addition to a lack of game characteristics, Herbert saw coarse fish as an inferior food fish: “The truth is, that nowhere under the canopy of Heaven are the genus *Cyprinus* worthy to be accounted sporting fishes, and nowhere are they eatable…”

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In his world defined by sport in search of trout and salmon, coarse fish ranked low. Herbert admitted that in waters without trout or salmon, coarse fish offered a pleasurable pursuit to some, but that trout and salmon anglers looked down upon other species. He went on to say that the smaller coarse fish like shiners, roach, and dace only provided sport to “schoolboys and young ladies.”¹⁴ For Herbert, social standing and the species of fish pursued helped to define sport fishing.

Other American writers echoed British sentiments about class within definitions of game fish. Charles Hallock, founding editor of *Forest and Stream*, defined game fish as the highest class of fish in 1873, comparing them to gentlemen. In Hallock’s view, if game fish were high-class gentlemen, coarse fish were connected to the “vulgar” lower classes and could be recognized by “their surroundings and associations”: “They may flash with tinsel and tawdry attire; they may strike with the brute force of a blacksmith, or exhibit the dexterity of a prize-fighter, but their low breeding and vulgar quality cannot be mistaken. Their haunts, their very food and manner of eating, betray their grossness.”¹⁵ The anthropomorphic class undertones obscure whether Hallock despised coarse fish or the lower classes more. He wrote at a time when the rise of industrial capitalism transformed both the landscape and relations between social classes. Concerns over the volatile Gilded Age economy in which wealth could be gained or lost, the turmoil of the growing labor movement, and the new waves of immigrants to the eastern seaboard made men like Hallock uneasy and obsessed with maintaining his privileged status. In Hallock’s estimation, not even the *nouveau riche* (or coarse fish, whatever the case may be)

could hide their lower status in tinsel or intrepid spirit. Like their British counterparts, Hallock and his peers saw coarse fish as only suitable for the lower classes. Other American anglers, like their British counterparts, complicated these definitions.

Unlike some of his contemporaries, author Genio C. Scott portrayed fishing as a more democratic venture in America but still privileged brook trout over other fish: “Trouting is an abiding and universal source of pleasure to all classes and conditions of men and boys—ay, and of ladies also.” Scott called coarse fish “leather-mouthed fishes” and stated they “are not generally regarded as gamy, though good sport for ladies and youth.”16 Although he did see a place for coarse fish within the sport, Scott based his view on the assumption that they could only be enjoyed by seemingly inferior anglers. Another influential early American fishing author, Thaddeus Norris, explained anglers preferred trout over other species, noting the poor treatment of several chub species in the East: “The chub is a persecuted individual in a Trout-stream; one whose name is cast out as a reproach amongst fly-fishers, whose head is knocked off; or he is thrown ashore on a sunshiny day to linger and die on the pebbly beach…”17 Norris failed to mention class in defining game and coarse fish. Nevertheless, Norris and other nineteenth-century sporting writers illustrated the contested value of coarse fish. Many anglers simply liked trout more, a significant preference since these prejudices against coarse fish shaped the hatchery system and the rise of state conservation in the West during the late nineteenth century.

In eastern states as well as the Rocky Mountains, the state-led conservation system, influenced by sport fishing ideals, protected game fish while ignoring coarse fish. Starting in the

nineteenth century, private and state fish culturalists stocked billions of preferred trout species in western waters, based largely upon Euroamerican sporting traditions. Western native fish like mountain whitefish, suckers, chubs, and other coarse fish shared similar characteristics and thus comparable prestige with the coarse fish of Britain and the eastern United States. So while fish culturalists introduced and artificially propagated almost every conceivable trout species, they rarely produced the coarse fish disliked by some sport fishers. Instead, conservationists centered on protecting and creating more trout and other esteemed game fish, prized for both their sport and food qualities. Western fish culturalists rarely propagated suckers, chubs, pikeminnow, or any of the smaller coarse fish like dace, although they sometimes raised white suckers to feed to trout, but never to release into the wild. On occasion, state agencies stocked or propagated mountain whitefish, but not extensively. Similarly, fish culturalists introduced few new coarse fish into western waters, carp and lake whitefish represent the only two species due to their perceived food and commercial value. The hatchery system and its accompanying regulations, like the people it served, privileged trout over coarse fish, mirroring mainstream Euroamerican fishing culture.

By the late nineteenth and early twentieth centuries, state fish and game commissions in the Rocky Mountains began to codify the game/coarse fish divide in Euroamerican sporting culture by defining fish as either “game” or “non-game” fish. Based on sporting ideals,

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18 Federal and state agencies stocked lake whitefish in larger western lakes with commercial fishery potential in the late nineteenth and early twentieth centuries. Native to the Great Lakes region, commercial fishermen and consumers valued lake whitefish as a food fish because of its taste and that it grew to larger sizes compared to their western relatives mountain whitefish, hence holding more commercial value. With help from private applicants, the US Fish Commission introduced another food fish, the common carp, into western lakes and small ponds. The agency embarked on a short-lived carp program, beginning in 1879 and continuing for almost 20 years, with shipment sizes decreasing after 1890, and the USFC finally abandoning the program in 1897. During that time, an agency fish car crisscrossed the nation, distributing carp to thousands of applicants yearly. Many years, the USFC received upwards of 10,000 applications for carp. By the time the agency stopped, carp had become naturalized throughout the United States, either by purposefully stocking in public waters or accidentally escaping from farm ponds. See Leon J. Cole, “The German Carp in the United States,” in US Bureau of Fisheries, Report of the Bureau of Fisheries 1904 (Washington, DC: GPO, 1905), 544-550, http://docs.lib.noaa.gov/rescue/cof/COF_1904.PDF (accessed January 24, 2011).
designations of “game” and “non-game” within state conservation held important consequences for those species. Western state laws protected the frequently stocked native and nonnative trout species (i.e. game fish) through closed seasons, creel limits, bans on commercial fishing, and other statutes. Even concerns over pollution, irrigation screens, and fishways for dams revolved around protecting game species. Conversely, non-game fish were afforded little official protection in state conservation’s ascendancy or later. Few coarse fish garnered game fish status in the West. Mountain whitefish became one of the few coarse fish to hold “game” fish status, but anglers and fisheries managers still treated the species poorly.

**Native Western Fish**

The nascent state conservation laws that favored game species, however, did not preclude coarse fish use. During the territorial period and continuing to the mid-twentieth century, numerous Rocky Mountain coarse fish species held food and game value for natives and settlers alike. Anglers and scientists also debated these values and uses throughout the period. Yet, the sporting values that privileged trout eventually won out. By midcentury, management practices upheld a Rocky Mountain trout culture while ignoring earlier coarse fish debates. The types of coarse fish varied by watershed in the West, but they all became subject to the same treatment in the region’s trout culture. Mountain whitefish represent one of the most abundant native species and are related closely to trout as part of the *Salmonidae* family as revealed by its adipose fin (trout, salmon, char, whitefishes, and grayling). Other western coarse fish species, however, inhabit particular drainages, mostly belonging to the *Cyprinidae* family (including carp.

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19 Mountain whitefish *Prosopium williamsoni* inhabit rivers and lakes throughout the West, from the headwaters of the Mackenzie River in British Columbia, south to the Sierra Nevada’s east slope in California, west to rivers in northwestern Colorado, and north to Montana’s upper Missouri River basin and Yellowstone River, and the North Saskatchewan River in Alberta. Whitefish and grayling are progenitors of trout and other salmonids. Robert J. Behnke, *Trout and Salmon of North America* (New York: Free Press, 2002), 335-340; 3. Historical common names include Rocky Mountain whitefish, mountain herring, Williamson’s whitefish, or grayling (a mistaken identity).
minnows, chubs, and pikeminnow) or the *Catostomidae* family (suckers). The distribution and large populations of these native species ensured their importance as food and game fish in the nineteenth and early twentieth centuries.

Known for their salmon cultures, Plateau tribes utilized other native species to a lesser extent, those defined as coarse fish by Euroamerican sporting culture. The Nez Perce took bridgelip suckers, largescale suckers, mountain suckers, longnose suckers, mountain whitefish, and sturgeon and lamprey, in addition to salmon and steelhead.\(^\text{20}\) Shoshone-Bannock captured a variety of species, including pikeminnow, suckers, chub, resident trout, lamprey, sturgeon, and mountain whitefish.\(^\text{21}\) Other regional tribes also caught numerous types of fish. Growing from twelve to seventeen inches long, the largescale sucker provided a frequent food fish for the Salish of western Montana.\(^\text{22}\) On one research expedition, US Fish Commission scientist Barton Warren Evermann saw native women bring home “several good-sized specimens” of largescale suckers near St. Ignatius, on the Flathead Reservation.\(^\text{23}\) Natives in other watersheds also utilized coarse fish, like the Bonneville Basin’s Ute bands. Utah’s large freshwater lakes held abundant populations of coarse fish (locally called “common fish” in the nineteenth and early twentieth centuries, a designation that was later replaced with “trash fish” like elsewhere in the West). Utah Lake held native Bonneville cutthroat trout, Utah chubs, Utah suckers, June suckers (endemic to Utah Lake and the Provo River), and other coarse species that provided important


food sources to Ute bands originally inhabiting the area and the Mormons who came later.\textsuperscript{24} Both settlers and natives often consumed coarse fish.

Westerners frequently ate mountain whitefish during the nineteenth and twentieth centuries. Star Valley, Wyoming residents, for instance, traditionally seined for mountain whitefish up into the 1930s.\textsuperscript{25} This culinary value often translated into market value. Up until World War I, mountain whitefish could be found in regional markets. Sometimes labeled “mountain herring” to showcase its supposed taste, vendors sold mountain whitefish in city markets like Salt Lake City frequently during the nineteenth century.\textsuperscript{26} During one particularly large spawning run in 1895 at Payette Lakes, locals near McCall, Idaho, captured large numbers of the fish with seines, pitchforks, and shovels by the “wagonload,” selling them in Boise and other nearby towns.\textsuperscript{27} Settlers were not the only ones to take advantage of regional fish markets. In the early 1900s, Blackfeet Indians seined whitefish, selling them to lodges in Glacier National Park to earn extra money.\textsuperscript{28} Western residents appreciated mountain whitefish and other native coarse fish for their food and market value.

A sizable commercial industry also sprung up at Utah Lake. By the turn of the century, the abundance of coarse fish earned the lake the nickname ‘the greatest sucker pond in the

\textsuperscript{24} Jared Farmer, \textit{On Zion’s Mount: Mormons, Indians, and the American Landscape} (Cambridge: Harvard University Press, 2008), ch. 2. Farmer chronicles the shifting cultural values placed on Utah Lake and Mount Timpanogos. Once a source of sustenance, the lake became less important in the twentieth century. Provo’s later residents reenvisioned Mount Timpanogos as a landmark, ignoring native dispossession and the lake’s earlier importance. See Farmer, 1-14.

\textsuperscript{25} Jon Erickson, \textit{Summarization of Life History and Management Studies on the Rocky Mountain Whitefish in the Snake River Drainage}, Project 0166-23-5501 (Cheyenne?): Wyoming Game and Fish Department, July 13, 1966), 11.

\textsuperscript{26} William F. Sigler and Robert Rush Miller, \textit{Fishes of Utah} (Salt Lake City: Utah State Department of Fish and Game, 1963), 59.


Market fishermen seined yearly tens of thousands of fish from the lake. In the 1911 and 1912 seasons, they reportedly took “six million pounds of common fish.” The abundant uses of coarse fish up until the mid-twentieth century illustrate how the rise of a western trout culture changed the values of these native fish. Westerners, however, disagreed on the food, market, and game value of coarse fish, as indicated by the conflicting values of Colorado pikeminnow.

The inland West has two native species in the pikeminnow genus: northern pikeminnow of the Columbia Basin (seen as a nuisance predatory species, enough so that the Bonneville Power Administration now pays bounties for its capture) and Colorado pikeminnow of the upper Colorado Basin (listed as an endangered species since 1967). In the upper Colorado Basin of Utah, Colorado, and Wyoming, many locals saw Colorado pikeminnow as a prized food and game fish, especially since it grew up to eighty pounds, the largest of American *Cyprinid* species. In the early twentieth century, they used different lures, baits, and occasionally artificial flies to catch these monstrous freshwater fish. The baits included worms and fish chunks, as well as unconventional baits—to put it mildly—like chicken parts, swallows, rabbits, or frogs. Yes, rabbits. Seeking Colorado pikeminnow through diverse means, numerous locals developed high opinions of the species, both in terms of game and food. Like other coarse fish, however, opinions of Colorado pikeminnow varied widely.

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29 Jordan and Evermann, 52. This designation became a lament for Utah fish and game officials who were more concerned about trout populations. In 1907, the Utah state game warden lamented that Utah Lake had “deteriorated almost to a carp and sucker pond, with the game fishes practically extinct.” John Sharp, *Sixth Biennial Report of the State Fish and Game Commissioner and the Commissioner of State Hatcheries, To the Governor and the Seventh Session of the State Legislature of Utah, For the Years 1905 and 1906* (Salt Lake City: Deseret News, 1907), 10-11.

30 Fred W. Chambers, *Ninth Biennial Report of the Fish and Game Commissioner of the State of Utah, To the Governor and Members of the Tenth Legislature of the State of Utah, For the Years 1911-1912* (Salt Lake City: Arrow Press, 1913), 43.

31 Jordan and Evermann, 70. They qualified this statement by adding that in the Colorado basin “where species of food-fishes are not numerous, it is a fish of considerable importance.” Ibid.

Some upper Colorado Basin locals disliked catching and eating Colorado pikeminnow, albeit a seemingly small minority during the early years of the twentieth century. Some people refused to eat them, feeding them to pigs, chickens, and cats or using them as fertilizer instead. Although Colorado pikeminnow represented the most important native species, many residents had lower opinions of the other endemic species, razorback suckers, humpback chubs, and bonytail chubs. The widespread use illustrates the early regional importance of coarse fish. However, some westerners disagreed as to the worth of native species and welcomed the introductions of nonnative trout. Sporting culture and scientific management eventually subsumed earlier values with the rise of a Rocky Mountain culture and economy that valued trout.

Like the broader Euroamerican sporting culture, nineteenth and early twentieth century western anglers and scientists ranked different native and nonnative trout species based upon their sporting and food values. In this trout hierarchy, coarse fish usually ranked lower. Those who disliked western fish often parroted their English and eastern US counterparts, believing that in a masculine, white sporting culture, coarse fish were only suitable for lower classes, other races, or women and children. Anglers who liked coarse fish based their opinions on personal experiences, questioning mainstream sporting culture. Angler-scientists who worked in state fish and game agencies or the US Fish Commission also viewed coarse fish differently. These myriad views, however, started to fade away by the mid-twentieth century.

Rocky Mountain watersheds held distinct native fish that were underprivileged as non-game species and contested within angling culture. Suckers had the dual dilemma of being disliked as both food and game fishes by most anglers. In their definitive *American Food and Game Fishes* (1902) renowned ichthyologists and US Fish Commission scientists David Starr

33 Quartarone, 21-22; 7.
Jordan and Barton Warren Evermann frankly stated that no sucker species held any game qualities and ranked low as food due to their boniness. Western anglers tended to agree with this estimation. Colorado anglers reportedly detested white suckers, as one scientist observed at Twin Lakes: “As food fish, the sucker does not stand very high in the estimation of local fishermen, consequently little attention is paid to it except as bait for trout.” Smaller-sized coarse fish held little value for anglers.

Often lumped under the generic term “minnows,” small coarse fish held little sport or food importance, unless used as bait or seen as sport fitting for children. Easy to catch, minnows’ small sizes made them manageable for children, even with makeshift gear, but were met with disdain among sportsmen for precisely that reason: they were easy quarry. Jordan and Evermann noted that various chub species were “of little importance except as boy’s fishes. With a few exceptions they are species of the Western States, and are perhaps most valuable to the Indians or in those regions where better fish are rare.” Western anglers relegated minnows and small coarse fish to bait for game fish or children’s prey, but disputed the game qualities of other western coarse fish like mountain whitefish.

As a widespread western species, mountain whitefish had both supporters and distracters in the sporting community. The first superintendent of the Bozeman federal hatchery, James A. Henshall, revealed that mountain whitefish were “not so highly esteemed” among western fishers. In the early 1890s, some Montana anglers complained of the fish’s “sluggish” habits,

34 Jordan and Evermann, 36-37.
36 Jordan and Evermann, 71.
especially during warm weather, which gave them “a bad reputation.” Other sportsmen valued the fish for food and game. One tourist to the Madison River valley found mountain whitefish “gamy, making a strong fight, a fight as strong as the trout, if not stronger; hanging, as one of your correspondents says, to the bottom of the stream.” He also noted that the Madison Valley locals preferred to eat mountain whitefish over trout and grayling. Writing under the pen name “Bourgeois,” Colorado lawyer Lewis B. France observed that the sizable mountain whitefish populations in the state’s White River occasionally annoyed trout fishers. He defended the fish, stating: “Why they should be a source of vexation of any one is a mystery. The fish is beautiful in contour, more slender than the trout, has a delicate mouth, rises eagerly to the fly, and its meat is delicious.” Due to his appreciation, France reportedly tried to get mountain whitefish reared in hatcheries and distributed beyond Colorado’s western slope to rivers closer to Denver. While class and social status colored some anglers’ views toward coarse fish, France and his fellow elite sportmen’s admiration of mountain whitefish revealed that personal preference shaped their ever-significant estimations of fish. Forgotten in the region’s later trout culture, these positive sentiments of coarse fish demonstrate how science and fisheries management displaced diverse fishing cultures with a homogenized trout culture.

The historically shifting local and common names of the pikeminnow genus illustrate the influence of trout angling ideals within state-led conservation, which sought to create uniformity within knowledge of species. Pikeminnow had the common name of “squawfish” until 1998,

38 Big Horn [pseud.], “Rocky Mountain Grayling,” Forest and Stream 36, no. 26 (July 16, 1891): 519. See also Livingston [pseud.], “Grayling or Whitefish?” Forest and Stream 36, no. 3 (Aug. 6, 1891): 48. These debates in Forest and Stream in the late 1880s and early 1890s also revolved around correctly identifying mountain whitefish compared to arctic grayling, its native cousin in the upper Missouri River basin of Montana. Their identification became confusing to some because mountain whitefish were sometimes mistakenly called grayling, especially in Wyoming and Colorado, and other places where grayling were not introduced until later.
when changed by the American Fisheries Society due to its offensive nature. \(^{41}\) Squawfish as a common name, however, evolved over time to reflect sporting culture in scientific management. Scottish explorer and naturalist John Richardson first described the northern species in 1836 for Euroamerican audiences, listing the common name as Columbia River Dace. \(^{42}\) In 1891, Barton Warren Evermann noted on a US Fish Commission expedition that in the Flathead Lake region, the locals called northern pikeminnow “squawfish.” \(^{43}\) The vernacular’s origin remains unknown.

Northern pikeminnow in other locales had different common names. Idaho settlers called them “Yellowbellies” near Redfish Lakes and “Chub,” “Big-mouth,” and “Box-head,” elsewhere in Idaho, all references—albeit not so creative—to their appearance. \(^{44}\) Likewise, settlers in the upper Colorado basin referred to Colorado pikeminnow as “white salmon,” or occasionally “whitefish” or “salmon,” all titles that denoted its size and importance as food. \(^{45}\) Regardless of the other common names, eventually all pikeminnow species became known as squawfish, although exactly when is unclear. Jordan and Evermann’s 1902 tome on game and food fish continued to list Colorado pikeminnow as “White Salmon,” but applied “Squawfish” to northern pikeminnow over its other common names, stating “This fish is highly esteemed by the Indians, hence its most popular name.” \(^{46}\) Over time, the scientific establishment deemed all pikeminnow the disparaging “squawfish.” Regardless of the original meaning, the labeling shows the influence of race and gender within sporting ideals. In one strand of angling culture, codified by

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\(^{44}\) Evermann, “Headwaters of the Columbia River,” 175.


\(^{46}\) Jordan and Evermann, 68-70; 69.
state conservation and western science, whiteness and masculinity could be demonstrated by the type of fish sought. Thus, squawfish did not fall under proper game fish. As always, however, sportsmen contested these aspects of sporting culture.

Despite its official status as an inferior coarse fish only suitable for Native American women, anglers and scientists often valued pikeminnow as a food and sport fish. On Barton Warren Evermann’s first trip to the Flathead Lake region, northern pikeminnow failed to make a favorable impression on the USFC scientist: “they often prove quite an annoyance to him who is fishing for nobler game.”47 Several years later, however, Evermann changed his tune about the merits of northern pikeminnow. Under the auspices of “researching” Idaho’s Redfish Lakes, he enjoyed the sport: “By using the Royal Coachman and fishing as if for trout I caught in a few minutes six good-sized ‘Yellowbellies.’ They would rise to the fly promptly, strike quickly, and fight vigorously for a few moments, after which they allowed themselves to be pulled in without much struggle.” As for food, he described northern pikeminnow as “firm and sweet,” but bony, adding their large size “reduces this objection to a minimum.”48 The mid-twentieth century focus on nonnative trout discredited these earlier positive views of western native fish that perhaps someday might be restored.

**Becoming Trash Fish**

By the mid-twentieth century, the creation of place—a trout culture, economy, and aesthetic—meant that coarse fish became even more disdained, as reflected in the era’s popular usage of the term “trash fish” to denote coarse fish, an expression sometimes still used today. Larger economic changes in the twentieth century allowed western consumers to buy frozen fish native to oceans and far-off waters, meaning coarse fishes’ food value declined as well.

48 Evermann, “Idaho,” 175; 176.
Additionally, many residents began to prefer eating trout and other introduced species after the 1920s and 1930s. One Colorado man stated, “I like trout. Those damn suckers, they used to be so full of bones.” From this standpoint, coarse fish paled in comparison to nonnative trout. Simultaneously, trout grew in importance for Rocky Mountain sport fisheries, as illustrated by A River Runs through It. As western waters became linked to trout, anglers expected a certain fishing experience. The presence of coarse fish tended to annoy some trout seekers. “In many waters I have found them [mountain whitefish] to be so plentiful and pestiferous that they spoiled fishing,” Syl MacDowell complained in 1948, “My principal grievance against all whitefish is that they arrange to be caught when I have an expectant and critical audience whom I prefer to impress by connecting with a big trout.” The evolution of a western trout culture translated into poor treatment of coarse fish by some anglers. Their actions became unofficially sanctioned by state agencies who, in the face of declining trout populations and habitat degradation, worked to remove coarse fish in attempts to improve trout fisheries.

The term trash fish perhaps reflected the fact that some anglers discarded coarse fish in the belief that they had no game or food merit and competed with trout. During the midcentury, state agencies increasingly reported that anglers threw away coarse fish. In the 1930s, California Fish and Game officials observed Truckee River anglers disliked mountain whitefish: “At well-fished ‘holes’ it is not uncommon to see many whitefish strewn on the banks to rot. Many anglers throw away their entire catch of this species—believing it to be worthless.”

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49 Quartarone, 49.
50 Syl MacDowell, Western Trout (New York: Alfred A. Knopf, 1948), 45.
51 Wasting fish had historical precedents, but throwing away fish became more prevalent during the midcentury rise of a regional trout culture. One Utah resident recalled in the early twentieth century, his family found little use for the native Colorado River species. He described what happened to the fish they did catch: “See we take them, seine them out of the river and dump them on the lawn, let them die on the banks, we get a gunny sack full and use them for fertilizer, or whatever. If you couldn’t eat them, what good were they anyway.” Quartarone, 50.
52 William A. Dill and Leo Shapovalov, “An Unappreciated California Game Fish, the Rocky Mountain Whitefish, Prospopium Williamoni (Girard),” California Fish and Game 25, no. 3 (July 1939): 226.
authors noted anglers often mistook the species for suckers, even though mountain whitefish, with their telltale adipose fin, are more closely related to trout. To avoid misidentification, the article provided an illustrated guide to help anglers distinguish between species. As anglers sought western trout, they increasingly came into contact with less-prized native species like mountain whitefish, leading some to waste their catches.

Similar episodes to the Truckee River rotting fish problem occurred throughout the midcentury West. The Wyoming state fish warden reported in 1941 that during the summer, anglers left piles of rotting mountain whitefish along the banks of the Salt, Snake, Shoshone, and Upper Wind rivers. A 1946 British Columbia guidebook informed readers that anglers frequently caught the species, but threw them away because they resembled “coarse fish.” Harriet Wheatley, a well-to-do tourist who wrote about her extensive travels in 1952, recounted that her and her husband rarely kept the species. At the behest of a guide in Jackson Hole, they supplied mountain whitefish to less discerning tourists staying in a local lodge. Wheatley and the other members of their fishing party delighted in filling their creels and she reported that, surprisingly, the mountain whitefish fought well and tasted good. Trashing fish usually lacks documentation, so the rise in cases indicates its larger occurrence in the development of a trout culture. But, again, anglers and conservationists contested the value (or lack thereof) of coarse fish.

Like earlier advocates, some midcentury writers classified mountain whitefish as an excellent game and food fish. Wilderness supporter and outdoor wordsmith Arthur Carhart noted the varying opinions in his book *Fishing in the West* (1950). Carhart himself saw mountain

55 Harriet Wheatley, *Lady Angler: Fishing, Hunting, and Camping in Wilderness Areas of North America* (San Antonio: Naylor, 1952), 50. Wheatley did not elaborate whether they previously threw their catches of mountain whitefish on the bank or just released the fish back into the river.
whitefish as “worthy,” reminding readers of the species’ relation to trout.\(^{56}\) A native of Butte and a son of a miner, working-class conservationist George Grant wrote frequently about local environmental issues.\(^{57}\) In his essay, “True Pioneer,” Grant dispelled myths about fishing for mountain whitefish, observing the species was “held in low esteem by many anglers and in utter contempt by others…Its worst offense is being present in the same water frequented by large trout offering the angler a greater challenge.”\(^{58}\) Some anglers advocated for mountain whitefish and other coarse fish, yet it never became integrated into the prevailing fishing culture. This blind spot shaped fisheries management in the twentieth century, and oftentimes turned violent.

Funded by fishing license fees, state agencies institutionalized prejudices against coarse fish in their continuous work to maintain trout populations for recreational and food purposes during the twentieth century. In the face of increasing water pollution and habitat degradation due to postwar road building, urban growth, and industrial and agricultural pollution, fisheries managers worried about declining trout populations. Their concerns shifted to habitat protection, smaller daily catch limits for trout, and ridding western waters of coarse fish.\(^{59}\) Fish managers charged coarse fish with competing with trout for valuable food and space. Although some food overlap occurred, biologists assumed that fewer coarse fish would increase trout populations.\(^{60}\) They embarked on “removal” programs—a euphemism for the widespread carnage—without full understanding of competition between fish or scientific evidence to prove that decreasing coarse


\(^{57}\) Pat Munday, “‘A millionaire couldn’t buy a piece of water as good’: George Grant and the Conservation of the Big Hole River Watershed,” *Montana: The Magazine of Western History* 52, no. 2 (Summer 2002): 20-37.


\(^{59}\) As fisheries managers in western states lowered daily catch limits for trout, they continually raised them for mountain whitefish. Other western coarse fish did not even receive those little protections since they were still not considered game fish under state laws.

\(^{60}\) See, for example, William F. Sigler, “The Life History and Management of the Mountain Whitefish *Prosopium Williamsoni* (Girard) in Logan River Utah,” Bulletin 347 (Logan: Utah State Agricultural College, May 1951), 3.
fish populations would increase trout populations. All they needed to know was that anglers desired to fish for trout.

The extent of coarse fish removal programs attest to the popularity and economic importance of trout. The Dingell-Johnson Act (1950) funded many of the projects. The national act taxed fishing gear, giving funds to the states to improve sport fishing opportunities. With Dingell-Johnson money, as well as state funding through fishing licenses, state agencies embarked on massive coarse fish removal campaigns. These operations sought to get rid of various sucker species, chubs, pikeminnow, carp, mountain whitefish, and every other imaginable coarse fish species. Fisheries managers found an assortment of uses for the removed fish, commonly feeding them to hatchery trout, distributing them to the needy, or using the fish as fertilizer. State agencies used a variety of coarse fish removal techniques. They resorted to seines and gill nets, fish toxicants, dynamite, electroshocking, and dewatering reservoirs in the attempt to control coarse fish populations. For particularly maligned or troublesome species, managers employed multiple techniques. From the 1940s to the 1970s, for instance, they combated northern pikeminnow with gill nets, dynamite, a selective toxicant that targeted only northern pikeminnow, and “drawing down of reservoirs after the spawning season to kill the

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61 Meyer, Elle, and Lamansky observed that that even though some agencies engaged in mountain whitefish removal between the 1950s and 1970s, the idea that the species compete with trout “has not been substantiated.” Meyer, Elle, and Lamansky, 753. Likewise, Brown and Moyle argued “there is little evidence to indicate that squawfish compete strongly with salmonids.” Larry R. Brown and Peter B. Moyle, “The Impact of Squawfish on Salmonid Populations: A Review,” North American Journal of Fisheries Management 1, no. 2 (Apr. 1981): 104. Scientists came to the same conclusions on sucker species: “An extensive literature review by Holey et al. (1979) summarized available research on the topic and concluded that although suckers do consume the offspring of other organisms, there was no evidence of any negative effects on prey populations. Further, although there can be substantial overlap in habitat use and food consumption between suckers and other fishes, there is little evidence that either is limiting, such that competition would be detrimental. Holey et al. (1979) determined that there was evidence that both supported and refuted the notion that sucker removal resulted in positive benefits to game fish.” Cooke, et al., 326.

62 Halverson, 97.
Similar coarse fish removal projects took place throughout the twentieth century, but turned out to be particularly common midcentury when managers aimed to save trout.

During the midcentury, all western states pursued coarse fish removal programs. The Utah Fish and Game Department chemically treated numerous lakes and reservoirs during the 1950s. They used coarse fish to feed hatchery trout, reportedly taking out “500 tons of trash fish” in 1952 and 1953 alone. Large-scale toxicant or seining operations continued in dozens of lakes per year, as the department attempted to control “undesirable” fish that they wrongly believed competed with trout for food and space. Other states engaged in coarse fish removal to the same extent. The Wyoming Game and Fish Department conducted yearly chemical treatments and seining operations in various lakes, eliminating tons of fish in each locale. 1952 marked a particularly busy year for the agency. They put fish toxicants in twenty-six lakes and reservoirs, in addition to seining. Idaho, Montana, and Colorado also killed coarse fish as part of yearly fisheries management techniques.

Fish managers often couched their actions as “rehabilitation” programs and garnered support and free labor from sportsmen’s clubs. The Western Montana Fish and Game Association out of Missoula boasted almost three thousand members by 1958. Its members frequently helped in coarse fish removal efforts in nearby waters during the 1950s. For sporting clubs and state management agencies working in tandem, fish conservation meant saving trout by killing others. State agencies enjoyed the help and found that sometimes their removal work

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67 Wm. H. Bush to Albert M. Orr, 16 February 1957, Series IV, Box 4, Folder 2, MSS 213: Western Montana Fish and Game Association Records, Archives and Special Collections, Maureen and Mike Mansfield Library, University of Montana-Missoula.
established good rapport with sporting clubs. Star Valley, Wyoming, sportsmen—perhaps
descendants of those pioneers who seined mountain whitefish into the 1930s—aided fisheries
crews in the 1950s and 1960s, helping managers electroshock the river and seine out the stunned
mountain whitefish. The continuous operations took out thousands of fish. By 1964, they had
removed almost eighteen thousand mountain whitefish. Despite the efforts, the mountain
whitefish population remained fairly unaffected, but one official reported that it did improve
local relations.  

On the whole, anglers supported coarse fish removal, even if it meant the use of
fish toxicants, a common practice.

During the twentieth century, the use of toxicants to control fish populations became
ingrained into fisheries management, offering managers a modern method to rid themselves of
undesirable fish. For the most effective fish toxicants, fisheries managers turned to indigenous
fishing methods. Starting in the late 1930s, the commercially-sold insecticide rotenone became a
ubiquitous substance for coarse fish removal. Derived from derris and cubé roots of the East
Indies and South America, respectively, indigenous fishers first used the plants for subsistence
fishing.  

Like other fish toxicants, when placed in the water, rotenone disrupts fish’s respiratory
functions, causing them to stop breathing and die. In coarse fish removal projects, fisheries
managers usually treated lakes and sometimes rivers, removed the dead fish, waited until the
rotenone lost its toxicity, and then planted hatchery trout. Often, lakes had to be sprayed multiple
times, otherwise coarse fish reappeared, moving in from lake inlets or outlets. While the

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68 Erickson, 15-19; 15.
application of fish toxicants was established long before World War II, their use mushroomed after the war.

In the postwar era, state and federal agencies applied rotenone on hundreds of lakes to improve trout fishing. From the beginning of its use to 1959, fisheries managers treated 563 American lakes with rotenone for trout management.\textsuperscript{71} From 1952 to 1962, the Dingell-Johnson Act alone funded coarse fish removal projects for “225,000 acres of lakes and 2,500 miles of streams.”\textsuperscript{72} Many of these projects occurred in Rocky Mountain waters, as fisheries managers used toxicants as just one tool to maintain the trout populations important to the regional economy and culture. In 1957, the Wyoming Game and Fish Department treated over one hundred miles of the North Platte River with rotenone, attempting to temporarily increase game fish populations.\textsuperscript{73} The largest of these endeavors, however, occurred in 1962, with the Green River “rehabilitation” project, which treated 450 miles of the Green River above Flaming Gorge Dam to make trout fishing better. When implemented poorly, washing dead native fish downstream into Dinosaur National Monument, ichthyologist Robert Rush Miller used the opportunity to criticize the native fish policies and eradication projects of federal and state agencies, quickly garnering attention after the publication of Rachel Carson’s \emph{Silent Spring}.\textsuperscript{74} Miller wrote: “Short-term economic gains resulting from the temporary increase in numbers of some favored gamefish at times have been given precedence over biological losses by those responsible for the management of our waters.”\textsuperscript{75} Scientists like Miller vehemently opposed the removal of native fish, classified as trash fish by the agencies meant to protect them. Even after

\begin{itemize}
\item \textsuperscript{72} Robert R. Miller, “Is Our Native Underwater Life Worth Saving?” \emph{National Parks Magazine} 37, no. 188 (May 1963): 4.
\item \textsuperscript{73} Lawrence Peterson, \emph{North Platte River Fisheries Restoration}, Job Completion Report, F-18-D-1 (Wyoming Game and Fish Commission, January 15, 1958), 1.
\item \textsuperscript{74} Halverson, 97-106.
\item \textsuperscript{75} Miller, 4.
\end{itemize}
Silent Spring alerted Americans to the dangers of insecticides and helped spark the modern environmental movement, fish toxicants continued to be used in coarse fish eradication into the 1970s and beyond.

Although never again on the scale of the Green River project, toxicants remained important to fisheries management despite larger scientific and societal changes. The postwar rise of a new ecology largely shifted scientific thought to ecosystems rather than individual species. The survival of species was placed within the larger health of the ecosystem. Additionally, Rachel Carson’s Silent Spring (1962) connected human health to overall environmental wellbeing when she spoke against DDT use. Within this context, predator and pest control started to fade from fish and wildlife management techniques. Within the regional trout culture context, however, fish toxicant use remained prevalent. Scientists created new toxicants for use against coarse fish, illustrating the entrenched sporting values within fisheries management. Since the mid-1960s, fisheries managers used Antimycin, an antibiotic derived from bacteria in the Streptomyces genus. In the late 1960s, researchers at the University of Idaho discovered a piscicide selective to pikeminnow, which they later termed “squoxin.” Fisheries managers utilized toxicants extensively in their work, but it did not represent their only response to native coarse fish. As Robert Rush Miller’s opposition to the Green River project reveals, state agencies comprised of diverse biologists and managers contested the value of native coarse fish just as much as anglers.

The large, bureaucratic nature of state fish and game agencies ensured that fisheries managers held different views of native fish. Some biologists promoted native species at the

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76 Worster, ch. 13.
same time their colleagues worked on eradication projects. Working in state fish and game departments, certain biologists began publicity campaigns, attempting to construct new images of coarse fish. For instance, in “Whitefish—The Rainbow’s Country Cousin,” Montana fisheries biologist J. J. Gaffney, sought to alter anglers’ opinions of mountain whitefish, laying out the fish’s food and sporting benefits. The article included a sketch of mountain whitefish as a “country cousin” traveling to the city, complete with a homely bonnet, freckles, and a worn suitcase. Presumably, Gaffney believed his rural readers could empathize with the fish falsely stereotyped as inferior. Other states’ officials also wrote educational tracts in attempts to alter anglers’ mindsets about native fish. These authors noted coarse fish had similar qualities compared to trout in terms of game, food, and fishing opportunities. If so, why were they so stigmatized among anglers?

Coarse fish are unfortunate-looking creatures. The perceptions of the fish have also been shaped by anglers’ sensory experiences and reactions. To some extent, anthropomorphism still influences animal protection and many conservation groups concentrate on animals who exhibit human-like features. Many scholars have also debated the central role of charismatic megafauna within wildlife conservation, to the detriment lesser valued species. While perhaps not on the hideously-ugly level of deep sea creatures or microscopic views of insects, coarse fish are less attractive than trout species prized for their beauty and game qualities. Scientists David Starr Jordan and Barton Warren Evermann called the Salmonidae family one of the most important among fish groups because of their beauty as well as their game and food qualities. Anglers and angling writers also enjoyed the beauty of trout. In 1850, Henry William Herbert

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81 Jordan and Evermann, 116.
described the brook trout as “one of the most beautiful creatures in form, color, and motion, that can be imagined.” Coarse fish could not compare to trout in terms of beauty.

Coarse fish, as the name implies, are scaly, lacking the brightly-colored, eye-pleasing visual show of trout species. Numerous species have sucker mouths with no teeth, differentiating them from the more well-liked trout that have sharp teeth. Many anglers have discussed the unbecoming qualities of the abundant mountain whitefish, particularly its snout and scaly, brownish-grey body. Even Greg Keeler sings the “White Fish Blues”: “Yes, your brook trout look like jewelry. / Diamonds and rubies shine like stars. / But your white dog look like something sold only on television, / That you’d use to vacuum out your car.” Other coarse fish were also subject to criticisms. One early Utah resident disliked the food qualities of upper Colorado native fish—two of which have Quasimodo-like deformities—adding, “Of course we didn’t think they were pretty either, like rainbow trout or game fish.” As ugly fish, coarser species became trash fish in a trout culture, with few proponents on one hand and fish-wasting anglers and toxicant-wielding managers on the other. Appearance, however, did not play a totalizing role in the fate of coarse fish.

In the complex and contested history of coarse fish, sometimes species—regardless of appearance—could be redeemed from their coarse fish status. In some western states, ling became popular among anglers and received game fish status by state agencies during the mid-twentieth century. Anglers overlooked their eel-like bodies, which apparently wrap around an angler’s arm when pulled out of the water, due to the fish’s taste and opportunity for sport in winter months. In 1940, one Wyoming game and fish commissioner reported: “In recent years

82 Herbert, 101.
84 Quartarone, 50.
the interest of the sportsmen of this state and adjoining states has been so aroused that ‘ling fishing’ has become one of our outstanding winter attractions.” Ling’s growing popularity in Wyoming led to it being designated as a game fish in 1939. In Montana, the appreciation for ling came later. One official reported the changing perceptions: “Some anglers labeled ling ‘trash fish’ and discarded them on the ice in winter or banks in summer. By 1973 this wasteful practice stopped—the word had spread that those ugly, eel-like fish were good sport and great eating.”

Ling became popular with Montanans who fished Tiber Reservoir and other waters, so much so that they received game fish status under a 1975 law. At the same time Montana anglers vindicated ling, however, some still held other native species in contempt.

Once a revered—and a quite beautiful fish, flashing vivid purples and reds underwater—fluvial arctic grayling became trash fish for some Butte anglers in the 1960s and 1970s. By then, fluvial arctic grayling’s native range throughout the upper Missouri River basin had been reduced to one section of one river: the upper Big Hole River. Historically, it had been well-liked by anglers, but later some dubbed it a coarse fish. One Montana biologist reported: “Unfortunately, not all fishermen recognize the value of the grayling as a sport fish. Some confused grayling with whitefish or suckers because of the large scales. Others who recognize

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85 Eugene E. Bjorn, “Preliminary Observations and Experimental Study of the Ling, Lota Maculosa (LeSueur), in Wyoming,” *Transactions of the American Fisheries Society* 69, no. 1 (Jan. 1940): 192. Ling are also called burbot, lawyer, or eel pout.


87 William J. Hill, *Central Montana Fisheries Study, Job No. 1-a, Inventory and Survey of Waters in the Western Half of Region Four, July 1, 1974 to June 30, 1975.* Job Progress Report, F-5-R-24 (Montana Fish, Wildlife and Parks, June 30, 1975), 10. In 1965, the Montana Fish and Game Department took over responsibility for state parks and, in 1979, became known as Montana Fish, Wildlife and Parks, although the latter sometimes appeared earlier in publications. Both are used in the text, depending on what was listed in the sources used.

88 In the past, the US Fish and Wildlife Service has refused to list the imperiled fluvial arctic grayling, but is currently reconsidering its status, along with 250 other species. See http://www.fws.gov/endangered/improving_ESA/listing_workplan.html (accessed September 5, 2011). State officials had also introduced the species into numerous high mountain lakes in Montana, Wyoming, Arizona, Utah, Washington, Idaho, Colorado, and California, but the Big Hole River remained the last holdout for the genetically divergent river population. See George D. Holton, “Montana Grayling: The Lady of the Streams,” *Montana Outdoors* 2, no. 5 (Sept./Oct. 1971): 19.
them do not appreciate them for the fine sport and food fish they are, but consider them a coarse fish.” Various appearance failed to save native species from trash fish status, illustrating the role of a stagnant western trout culture in determining value of fish.

As the focus on wild trout and the development of conservation biology led to a great emphasis on native fish and preserving biodiversity, fish managers are now forced to confront the past. Has this growing interest in nativeness included the sullied mountain whitefish and other coarse fish? Based on a firmly planted western trout aesthetic, the species remains ignored by managers and anglers. The Idaho Fish and Game biologists who have recently been forced to deal with declining populations in the Big Lost River noted that the species “continue to remain an afterthought for most fisheries research and management programs in western North America.”

Anglers’ mistreatment of mountain whitefish has also continued to the present. Former Rocky Mountain News outdoor reporter Ed Dentry once recalled a disturbing sight on the Madison River. He watched a fisherman become more and more irritated by catching numerous mountain whitefish. The fisherman then landed a large whitefish and threw it on the bank. Dentry described the next scene: “He started his next cast, then changed his mind. He rushed up the bank, found the flopping fish and jumped up and down on it.” The reporter saw this as “typical” of the species’ poor reputation among anglers. Other fish kills still occur, as anglers squeeze to death trash fish or leave them dead on the banks on other western rivers. Although discontinued in the early 2000s, the annual whitefish festival held on Colorado’s Roaring Fork River demonstrated the fish’s poor reputation. As if in some type of bizzaro-world, anglers took

90 Meyer, Elle, and Lamansky, 765.
advantage of the state’s lack of regulations and always pulled hundreds of whitefish out of the river. Corporate sponsors then replaced the dead fish with hatchery rainbow trout. More reminiscent of the pre-native fish era, the festival illustrates an entrenched western trout culture—and its economic importance. Other species have also maintained trash fish status.

Western anglers and management agencies continue to mistreat native coarse fish, despite population size. Vibrant populations of northern pikeminnow in the Columbia River have prompted fears of predation on juvenile salmon, even though scientific studies of competition between the two species remain murky. Regardless of the lack of proof, the Bonneville Power Administration, worried about northern pikeminnow predation on hatchery salmon (hatchery salmon that are incidentally causing declines for wild salmon runs), currently offers bounties for anglers catching and turning in the species at designated sites along the Columbia and Snake rivers. For their part, anglers receive $4-8 per fish. The website boldly proclaims BPA’s work: “HOW TO SAVE A SALMON (AND MAKE MONEY DOING IT).” In this case, the cultural and economic importance of salmon, not trout, started an eradication campaign against the pikeminnow, revealing the prejudices against coarse fish and other non-game fishes. Northern pikeminnow continued to have strong populations, but for some species, even imperiled status has failed to change people’s values. Listed as endangered in 1986, June suckers, and perhaps the federal government, remained detested by some individuals. During this time, several violent incidents occurred: “In 1984 a sucker-hating vandal broke into a holding pen and killed eighteen mature specimens. Four years later someone clubbed to death thirty suckers—an estimated 15

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percent of the wild breeding population—as they tried to spawn in the lower Provo River, a designated ‘critical habitat.’”

Conclusion

The twentieth-century development of a Rocky Mountain trout culture and aesthetic translated into an upsurge of mistreatment or neglect of native coarse fish species by midcentury, indicating how the obsessive focus on trout caused declines for mountain whitefish and other native species. A divided transnational sporting culture influenced anglers’ perceptions of these fish, as class, race, and gender defined proper quarry. Individual experiences also prompted anglers to champion coarse fish species, illustrating the fractured sporting debates. The mainstream fishing culture that disliked coarse fish, however, shaped western fisheries management for much of the twentieth century. State conservation agencies rarely protected coarse fish by refusing to give them “game” fish status. By the midcentury, the new terminology for coarse fish—“trash fish”—mirrored the growing economic and cultural importance of nonnative trout in the Rockies. For anglers and fisheries managers, saving these trout often meant killing native coarse fish with toxicants or other methods. Many of these sporting values continue to the present, with few groups lobbying for non-game fishes. Some anglers still stomp on fish. And management agencies remain slow to change. Despite having an unprivileged status as ugly creatures, the conservation of so-called trash fish continues to be crucial for preserving biodiversity in western rivers. Genetically pure populations of most coarse fish still exist because, Ironically, fisheries managers did not artificially propagate them in the hatchery system, largely ignoring them instead. Therefore, the century-long neglect of western

95 Farmer, 125-126.
96 Cooke, et al., 328.
native fish has a bright side, offering anglers and conservationists a chance to address the wrongs of the past before it is too late.

The history of coarse fish shows how anglers and fisheries managers extensively manipulated trout populations at the expense of other species. Coarse fish just got in their way. Tampering with fish species in western waters, they attempted to create an authentic “western” trout fishing experience for regional anglers and tourists. Likewise, the waterways themselves could be manipulated with the same hubristic views that humans could control and shape nature to their liking. The next chapter examines the problems and unintended effects that the sizable irrigation system within the western agricultural economy had on regional trout fishing. By the mid-twentieth century, dams had blocked most western rivers. Many of these dams, ironically, created better trout fishing (known as the tailwater effect). Crowding and conflicts came along with these amazing tailwater fisheries in a landscape so artificial that one fly-fishing environmentalist described the phenomena on Montana’s Bighorn River as a “Disneyland for fly anglers.” These Disneylands with trout offer a different perspective of the Rocky Mountain trout culture, one in which westerners argued over place and region—and even trout. All of this culminated towards the end of the twentieth century with criticisms of the western hatchery system, coarse fish removal projects, tailwater fisheries, and the other ways in which fish managers meddled with nature to maintain trout fishing.
The spring of 2011 proved to be a trying time for state politics across the nation. Massive protests erupted as elementary school teachers, labor unionists, and hordes of other private citizens stormed Wisconsin’s capital when the Republican-controlled legislature attempted to end collective bargaining rights for state workers. In raging debates, Arizonans disputed continual attempts to make harsh immigration laws even more strict. Other states struggled with serious budget woes or Tea Party-induced challenges to federal and state laws. In Montana, meanwhile, lawmakers debated the definition of an irrigation ditch.

The seemingly unimportant issue attracted an overflowing crowd to the floor, gallery, and halls surrounding one of the chambers in the Montana capitol building that spring. The vast majority opposed a bill that threatened to end some stream access rights for anglers by stripping their traditional access to the state’s irrigation streams. Ultimately unsuccessful, the bill’s authors reacted to a 2008 Montana Supreme Court decision over access to public waters. The verdict legitimized angler access to Mitchell Slough along the Bitterroot River after wealthy landowners like Huey Lewis (of 1980s music fame) claimed the slough was manmade, attempting to limit the public access that Montana anglers had enjoyed for decades.¹ The court found that Mitchell Slough followed a historic waterway and rejected the bid to close the slough off from anglers. This loss prompted the unsuccessful 2011 bill that raised the ire of state’s powerful angling lobby and filled the capitol with opponents. Few states could garner one of the session’s largest crowds over the definition of an irrigation ditch, but as English professor and fly fishing theorist Ted Leeson reminds us, in Ennis, Montana and, arguably many of the region’s towns, “trout are

both a business and an atmospheric condition."\(^2\) The Montana access fights and contemporary political debates illustrate how this rising atmospheric condition and western trout culture dealt with the vast environmental changes and many conflicts arising from irrigation and dams since the nineteenth century, while ironically ignoring that all of the region’s trout fisheries were also human made.

When anglers, fisheries managers, and regional boosters created a Rocky Mountain trout culture and economy during the twentieth century, it held significant environmental consequences for the region’s fisheries, especially for coarse fish. The regional celebration of nonnative trout fishing magnified earlier Euroamerican prejudices against non-trout species. Anglers and fish managers were perfectly willing to manage and manipulate nature in this context, ridding western trout waters of their ugly native fish through the use of toxicants, nets, dynamite, and every imaginable method available. Yet sporting culture and fisheries managers debated and contested the values of western native fish, showing that conceptions of place and fish were always contested and selective about who belonged to the region. In the creation of a trout place and the continuous work to sustain Rocky Mountain trout fishing, fisheries managers and anglers also navigated entirely different ideas of place and ways of ordering the landscape within the region’s agriculture economy, with its western water law, irrigation infrastructure, and widespread dam building.\(^3\) Western reliance on irrigation and dam building transformed Rocky Mountain watersheds and their fish starting in the nineteenth century and continuing to today.


\(^3\) A vast historiography exists on water, dam building, and irrigation in the American West, but few scholars have focused on the impacts to inland freshwater fish. Donald Worster studied the creation of a hydraulic society in his classic *Rivers of Empire* and has also defined the West as a region by its aridity. Donald Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (New York: Oxford University Press, 1985) and Donald Worster, “New West, True West: Interpreting the Region’s History,” *Western Historical Quarterly* 18, no. 2 (Apr. 1987): 141-156. In the popular book *The Organic Machine*, Richard White employed a spatial analysis to explore energy and labor along the Columbia River. Richard White, *The Organic Machine: The Remaking of the Columbia River* (New York: Hill and Wang, 1995). Donald Pisani has written a veritable encyclopedia on western water
This chapter starts with an examination of western water law and irrigation, which proved detrimental to an emerging trout culture and its fish populations, revealing the contested nature of water use. At times, irrigation canals pulled fish out of the river or took too much water, creating poor conditions for aquatic life. Early fish culturalists, however, retained their optimism in human control over nature in the arid West. They viewed competing water uses as reconcilable, but over time their actions shifted more towards a grudging acceptance of the havoc the western irrigation system wreaked on trout populations. Anglers, too, took a more realistic approach by using irrigation canals for their sport and food opportunities. After investigating these early irrigation issues, this chapter then concentrates on the environmental consequences of post-World War II dam building.

In the postwar era, federal efforts ensured the construction of dams on almost every major western river. These barriers sometimes paradoxically yielded better trout fishing in the tailwaters flowing out of them. The fun, yet crowded and built environment, inspired one fly policy. See, for example, Donald J. Pisani, Water and the American Government: The Reclamation Bureau, National Water Policy, and the West, 1902-1935 (Berkeley: University of California Press, 2002), Pisani, Water, Land, and Law in the West: The Limits of Public Policy, 1850-1920 (Lawrence: University Press of Kansas, 1996). Additionally, Mark Fiege’s examination of irrigation in Idaho to Marc Reisner’s look at the behemoth Bureau of Reclamation during Floyd Dominy’s reign in Cadillac Desert and Wallace Stegner’s biography of John Wesley Powell reveal the wealth of excellent studies on water in the West—and these works represent only a small portion of the scholarship on western water issues. Mark Fiege, Irrigated Eden: The Making of an Agricultural Landscape in the American West (Seattle: University of Washington Press, 1999), Marc Reisner, Cadillac Desert: The American West and Its Disappearing Water, rev. ed. (New York: Penguin, 1993), Wallace Stegner, Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West (1954; repr., New York: Penguin, 1992). Fewer scholars, however, have examined the effects of irrigation and dams within the context of inland western fisheries and non-anadromous fish. In addition, while the creation of new trout fisheries below bottom-release dams (known as the tailwater effect) has been debated and discussed fairly extensively in popular angling literature, only recently have scholars taken up the subject. Geographer Joel Helmer’s dissertation on the White River tailwaters in Arkansas outlined the shift of fish populations from warmwater species like smallmouth bass to coldwater species like brown trout, while highlighting some of the conflicts over increased regulations and examining contemporary issues dealing with stream flow rates. Joel William Helmer, “Float Trips, Dams, and Tailwater Trout: An Environmental History of the White River of Northern Arkansas, 1870-2004” (PhD diss., Oklahoma State University, 2005). Historians Ken Owens and Paul Schullery have also both analyzed the ecological transformation of tailwater fisheries. Ken Owens, “Blue-Ribbon Tailwaters: The Unplanned Role of the U.S. Bureau of Reclamation in Western Fly Fishing,” American Fly Fisher 33, no. 2 (Spring 2007): 2-10; Paul Schullery, If Fish Could Scream: An Angler’s Search for the Future of Fly Fishing (Mechanicsburg, PA: Stackpole Books, 2008), ch. 5. This chapter draws on their work, while expanding the focus to illustrate the connections, conflict, and unintended consequences of dams and irrigation to fish.
fisher to equate the Bighorn River tailwater trout fishery to Disneyland.⁴ Like Disneyland, tailwaters represented a constructed and highly manipulated environment where visitors shared in and benefited from the artificialness of it all, as it took management and control over nature to a new level. As tailwaters cultivated multitudes of giant trout, they made possible the spread of trout to previously impossible places like the American South. The new environments also transformed fly patterns and fishing, largely standardizing tailwater fishing across the United States as anglers adapted their techniques and bug puppets to changing environmental conditions. This managed landscape and its consequences for native ecosystems and people has been overlooked as the fishing industry and tourists have glorified fly fishing and trout as timeless and natural.

Good trout fishing could be just as contentious as it was revered. The chapter ends with an appraisal of the social and environmental problems generated by these Disneylands with trout. At the same time as enlarging the Rocky Mountain trout culture, tailwaters caused native fish declines, crowding, and user conflicts. Years of environmental change came to a head with the fight over the Bighorn River tailwater in the 1970s and early 1980s. Culminating in a 1981 Supreme Court case, the Crow Tribe ultimately lost their ownership and control over the riverbed to the state of Montana (who represented non-Crow anglers). The case demonstrated that continued environmental transformations within the region’s trout culture led to even more struggles over water and fish, eventually creating a backlash against hatchery management and the unnatural aspects of western trout fishing. A history of irrigation and water use preceded these later conflicts.

**Irrigation and Fish**

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The extensive network of headgates, canals, lateral lines, and other irrigation trappings in and along western waterways engendered problems for Rocky Mountain trout fisheries in the nineteenth and twentieth centuries. While the later slew of dams improved trout populations after the mid-twentieth century, earlier irrigation canals dried out western rivers or trapped fish. The destruction of fish life prompted some early regulations and cooperative ventures, as fish managers and anglers attempted to reconcile these conflicting water uses with irrigators. Their optimistic solutions, however, failed to entirely fix the widespread devastation to fish populations. Yet the complexity of environmental change created some practical solutions as a growing trout culture accommodated the western irrigation system. In some cases, locals embraced the transformations, either by fishing in the irrigation canals or using the annual water drawdowns to collect fish. State management agencies additionally took a more pragmatic route by the mid-twentieth century. They annually saved fish trapped by irrigation canals or low water conditions in salvage operations. Often, anglers and fish managers worked alongside of irrigators (who also sometimes fished) to deal with the environmental realities of an arid place. New West met Old West as the region’s anglers and fish managers adapted to the region’s irrigation system. Many of these problems with fish deaths and overuse of water stemmed from nineteenth-century western water law.

Based on the doctrine of prior appropriation, western water law ignored the recreational uses of water and industries based on it. Irrigation within the prior appropriation water rights doctrine caused low water or no water conditions (now called “dewatering”) throughout the West starting in the nineteenth century and continuing to today. Aridity and hydraulic mining prompted western states to adopt the doctrine in the late-nineteenth century, as prior appropriation codified individualism and competition within western water use by giving rights
to miners, farmers, and ranchers who first used the water (“first in time is first in right”) and by ensuring those rights only if irrigators continually used the water for consumption or agriculture (“use it or lose it”). The “use it or lose it” mentality offered little incentive for irrigators to regulate their water use under prior appropriation. Irrigation became part of a legacy of extractive western industries that inspired Wallace Stegner to remark the region “was not so much settled as raided.” This ethos sucked rivers and lakes dry, proving problematic for early fish culturalists who tried to create and maintain good trout fishing.

In the nineteenth and twentieth centuries, dried-up waterways and dying fish represented a common event in some locales, as the hopes of fish culturalists to establish a trout fishing paradise ran up against agricultural use and prior appropriation. Working for the US Fish Commission, renowned ichthyologist David Starr Jordan, for example, reported this problem in 1889. He observed some Colorado riverbeds “filled with dry clay and dust” because of irrigation use. As the irrigated water provided new life for crops and pastures, its overuse killed many fish. Dewatering occurred frequently in the arid West. Around the turn of the century, an estimated three hundred tons of suckers from Utah Lake died when they ran up Provo River to spawn at the same time that irrigators dried up the river bed. Upon investigation, the state fish and game commissioner described the scene: “the sight and smell was disgusting, so much so that it was feared than an epidemic would result from the decaying of such a large number of fish and the county commissioners order the water from the canals turned back into the channel of the river for a sufficient time to wash the dead fish down into the lake.” As disliked trash fish, the

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5 Fiege, 87.  
large-scale loss of suckers may or may not have incensed anglers, although the commissioner did qualify the incident by noting they were “considered the best class of suckers.”

Like the Utah Lake incident, irrigators sometimes dewatered entire rivers, creating problems for state agencies.

Maintaining stream flows for fish did not fall under “use” within prior appropriation water law until the late-twentieth century, forcing anglers and state agencies to address dewatering problems throughout the twentieth century. In 1925, the Idaho state game warden outlined the dilemma that state fish and game agencies faced. Despite Idaho Fish and Game Department efforts to thwart losses through irrigation and dewatering, the warden complained agency did not control the water and those who held water rights “have the right, if they so desire, to use all the water of such streams for irrigation purposes, regardless of the result.”

The low water conditions created by irrigation made it harder for state agencies to fulfill their mandates of protecting rivers and fish. Echoing problems from other states and other eras, the Utah fish and game commissioner lamented in 1948 that “The diversion of water for irrigation systems has cut deeply into the amount of fishable water.”

Dewatering represented just one problem with irrigation for regional fisheries. Irrigation canals also pulled fish from rivers. As early irrigators diverted and siphoned water for hay or other crops, they unintentionally drew out fish, vexing early fish culturalists and anglers and forcing them to confront agricultural interests. As David Starr Jordan chronicled Colorado and Utah fish species and the problems with dewatering, he observed fish loss in irrigation canals: “Great numbers of

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8 John F. Sharp, *Sixth Biennial Report of the State Fish and Game Commissioner and the Commissioner of State Hatcheries, To the Governor and the Seventh Session of the State Legislature of Utah, For the Years 1905 and 1906* (Salt Lake City: Deseret News, 1907), 10. For more on irrigation problems at Utah Lake, see Jared Farmer, *On Zion’s Mount: Mormons, Indians, and the American Landscape* (Cambridge: Harvard University Press, 2008), 121-123.

9 R. E. Thomas, *Department of Fish and Game, Biennial Report for 1923-4* ([Boise: Idaho Fish and Game Department?], January 1, 1925), 25.

trout, in many cases thousands of them, pass into these irrigation ditches and are left to perish in
the fields. The destruction of trout by this agency is far greater than that due to all others
combined and it is going on in almost every irrigating ditch in Colorado.” In Utah, Jordan
noticed the same conditions, where irrigation canals siphoned “millions of young trout” from the
rivers. 11 Jordan had described a dilemma generated by the conflicting uses of a scarce western
resource: water.

Fish loss through irrigation canals appeared to be widespread in the United States and
Canada in the nineteenth and twentieth centuries, but became particularly pronounced in the arid
and semi-arid western sections, where agriculture relied more on irrigation. For instance, in
1900, the Idaho state fish and game warden deplored the “enormous quantities” of fish killed
when irrigation stopped each year. 12 Other states dealt with the same problems. Utah officials
reported continued loss of trout and other fish through irrigation canals at the turn of the century,
listing dynamite, irrigation ditches, and sawdust as the three main factors that harmed fish. 13
Utah county wardens found the problem widespread and one estimated that “one-third” of fish
populations died in irrigation ditches yearly. 14 As the extensive western irrigation infrastructure
pulled fish from rivers and dried up waterways—legitimized under prior appropriation—fish
interests did not necessarily view the seemingly opposing water uses (water for fields, water for
fish) as incompatible.

Like western irrigation, fish culture and the transformation of Rocky Mountain fisheries
relied on an optimistic view of western aridity and humans’ ability to improve nature. Both failed

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11 Jordan, 5; 30.
12 Photocopy of Charles H. Arbuckle, First Biennial Report of the State Fish and Game Warden of the State of
Idaho, 1900 (n.p.: December 20, 1900), 9, Box 3, Folder Fish and Game Department [folders unnumbered], AR
2/17: Governor C. A. Bottolfsen Records, Idaho State Historical Society, Boise [hereafter ISHS].
13 John F. Sharp, Fourth Biennial Report of the State Fish and Game Commissioner, To the Governor and the Fifth
Session of the State Legislature of Utah, For the Years 1901 and 1902 (Salt Lake City: Star Printing, 1903), 30.
to consider the natural limits of western water. One federal hatchery superintendent exemplified these beliefs: “Our ‘Great American Desert’ is being rapidly irrigated out of existence. Where it once stood, we now find prosperous agricultural communities, supporting thriving towns and cities.” To him, irrigation and hatcheries represented progress. With proper measures, both could flourish. Other settler societies also held firm in their opinions that environmental realities could be mastered. In Canada, the Dominion Commissioner of Fisheries noted that irrigation and fish was a “grave question” for western states and provinces in the 1920s. Using Australia as an example, he argued that with proper planning, dams and irrigation schemes could benefit fish in western North America. Settlement, as well as state resource planning, represented a faith in progress and optimism in science. These fish culturalists continually promoted better protection of fish under the law and worked to remedy irrigation woes.

In the nineteenth and early twentieth centuries, many westerners agreed that, with the right measures, quality trout fisheries could exist alongside dams and irrigation ditches. The earliest attempts to reconcile the two water uses focused on placing screens or barriers in irrigation ditches to prevent trout from being siphoned out with the water. Starting in the territorial period and continuing throughout the twentieth century, both regulations and volunteers worked to save fish from irrigation systems. One of the first territories to act, Wyoming passed territorial laws and later state laws designed to prevent fish loss from small diversion dams and irrigation. The 1879 territorial law required fishways for dams and irrigation canals. The 1884 law directed irrigators to place screens over irrigation ditches, with a stiff

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penalty of a $10-100 fine or thirty days in jail for failure to do so.\textsuperscript{17} Utah enacted a similar law in 1880, which required screens for irrigation ditches, but irrigators often disregarded this law, mirroring the enforcement problems surrounding other early state regulations dealing with environmental degradation.\textsuperscript{18} Other states found it difficult to pass legislation despite efforts from fish culturalists and managers.

During the early twentieth century, Idaho and Montana did not have irrigation screen laws. In Montana, James A. Henshall failed twice to have the provision included in state laws. In his typical Victorian verbosity, Henshall brought the problem before the American Fisheries Society: “there is a source not generally suspected that is the cause of untold havoc and destruction, whereby millions of fish and fry perish annually. This is all the more lamentable as it could be so easily prevented. I allude to the wholesale destruction of fish life through the operation of irrigation ditches.”\textsuperscript{19} After being reassigned from Bozeman to a Mississippi station, Henshall continued his work promoting irrigation screens, this time at a national level. Like others, Henshall sought to reconcile irrigation and fish uses of water. In the region’s trout culture, popular sporting clubs backed state and national efforts for fish screen legislation, while working locally alongside of irrigators to find solutions and screen canals.

Anglers constantly tried to maintain good relations with landowners for fishing access and promoted good relations among ranchers and farmers, some of whom belonged to the same sporting clubs. Based out of Missoula, the Western Montana Anglers’ Association offered a $10 reward for information leading to the conviction of anglers who commitment depredations on

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\item[\textsuperscript{17}] Photocopy of the Laws of Wyoming, 1879, Chapter 42-“An Act to Provide for the Propagation and Culture of Fish Throughout the Territory of Wyoming,” and Photocopy of the Laws of Wyoming, 1884, Chapter 44-“An Act to protect fish,” Box 16, Folder 9, Collection #10483: Neal L. Blair Papers, American Heritage Center, University of Wyoming, Laramie [hereafter AHC].
\end{enumerate}
lands adjacent to fishing waters in Missoula County. The Western Montana Anglers’ Association and other sporting clubs throughout the Rocky Mountains promoted goodwill by helping irrigators install screens on their canals. In Utah, the Cache County Fish and Game Protective Association cooperated with ranchers and the fish and game department, donating both time and money to screen irrigation canals. Such collaboration illustrated the popularity of maintaining strong relationships with irrigators in addition to sustaining good fishing in the region. The extensive irrigation system, however, made the work never ending.

Despite early laws requiring fish screens and the optimism of fish managers and anglers, fish loss through irrigation ditches continued throughout the twentieth century. In 1914, the Wyoming state game warden lamented that the earlier laws had been unenforced and his department continued to search for an efficient screen. Almost thirty years later, his successor echoed the same sentiments, stating the department “found it impossible to enforce” the irrigation screen laws, calling for urgency since “the greatest single loss of fish is through irrigation ditches.” Other areas also experienced continual problems, including Indian reservations.

On reservations, irrigation ditches took the same form and created similar problems, even though water use fell under the Winters Doctrine, rather than prior appropriation, in which water

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20 Western Montana Anglers’ Association Minutes, 22 April 1915, Series IV, Box 2, Folder 27, MSS 213: Western Montana Fish and Game Association Records, Archives and Special Collections, Maureen and Mike Mansfield Library, University of Montana-Missoula [hereafter UMM].
21 Fred W. Chambers to Ira Lambert, 17 April 1911, Box 2, Letterbook 4/12/1911-7/5/1911, Series 1068: Fish and Game Commissioner, Correspondence sent, Utah State Archives and Research Center, Salt Lake City.
23 Robert Grieve, Biennial Report of the Wyoming Game and Fish Commissioner 1939-1940 (Cheyenne: Wyoming Game and Fish Department, [1941?]), 38.
rights were reserved with the creation of reservations.24 Wilderness advocate and Bureau of Indian Affairs forester Bob Marshall wrote in the 1930s that fish were “still swimming in the fields” at the Uintah and Ouray reservations. He complained that no action had been taken from the year before and noted that other reservations had similar grievances.25 Fish continued to die in irrigation ditches into the 1960s on the Flathead Reservation. In response, the tribal council of the Confederated Salish and Kootenai Tribes called for solutions to address the fish loss. The tribal chairman saw the annual losses as a waste: “If the fish are caught for human consumption it is not too bad, however, the many fish that are left to die is something else.”26 Western tribes continued to face problems with fish loss, dewatering, and other irrigation issues in the twentieth century. Likewise, the ongoing fish loss during the twentieth century prompted many anglers and fisheries managers to take a more pragmatic approach in reconciling an emergent trout culture and economy with an entrenched irrigation system.

Many westerners used the drawdowns of reservoirs or the fish in irrigation canals as an opportunity for food and sport. In the early twentieth century, one Utah official deplored the collection of fish from irrigation canals: “In many localities the farmers get their supplies of trout from the irrigating ditches, and on their land after irrigating, and depend largely on these destructive conditions for fish food…”27 The collection of fish from canals and irrigated fields became a yearly ritual for many westerners. Locals near Mountain Home, Idaho, took advantage, one observer reported that “many are secured by parties who are on the watch for the annual

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25 Photocopy, Robert Marshall to A. L. Wathen, 22 July 1936, Box 13, Folder 1, RS 266: Montana Governor’s Office: Montana Indian Historical Jurisdiction Study Records, Montana Historical Society, Helena [hereafter MHS].
26 Walter W. McDonald to George Moon, 12 October 1964, Series IV, Box 4, Folder 7, Western Montana Fish and Game Association Records, UMM.
destruction of these fish.” Likewise, the late summer drawdown of the Mission Reservoir on the Flathead Reservation furnished the opportunity to easily catch fish. The reservation superintendent noted that before fishing closures, locals took advantage of the low water conditions: “both Indians and whites were taking these fish by the basket full.” Dewatering nourished a festive fishing (or catching?) atmosphere at times. Other anglers turned the irrigation infrastructure into a place for sport. In Idaho, local sporting clubs stocked fish in drainage ditches or farmers themselves fished in the canals. While some anglers embraced the environmental changes created by the western irrigation system and incorporated them into regional fishing traditions, state agencies pragmatically dealt with fish loss through salvage operations.

To save fish from irrigation canals and dewatering, state agencies annually embarked on rescue work during the mid-twentieth century. With prior appropriation ingrained into western water law, state fish agencies raced to save fish from irrigation canals and dewatered reservoirs and streams every year in the late summer and fall. For instance Utah officials put back almost thirty-five hundred trout into rivers after the canal waters were shut off in 1908. The numbers grew by midcentury. Wyoming workers saved over three hundred thousand fish from reservoirs and streams in the low water years of 1939 and 1940. In 1958, the state salvaged almost ten thousand fish from two canals alone. In a similar fashion, Idaho hatchery workers retrieved about ninety-three thousand game fish from Lake Lowell canals in 1951. They used the

28 Carter Tobey to Moses Alexander, 11 August 1916, Box 4, Folder 15, AR2/11: Governor Moses Alexander Records, ISHS.
29 Photocopy, L. W. Shotwell to the Commissioner of Indian Affairs, 5 November 1936, Box 13, Folder 1, Montana Governor’s Office: Montana Indian Historical Jurisdiction Study Records, MHS.
30 Fiege, 63; 49.
31 H. B. Cromar, Biennial Report of the State Game and Fish Commissioner and the Commissioner of Hatcheries of Utah (Ogden: State Industrial School, 1908), 23.
32 Grieve, 37.
33 Louis S. Pechacek, comp., Summary of Fish from Cody Canal and Lakeview Canal, November, 3-6, 1958, Box 2, File M-122, RG 40: Game and Fish Department, Administration, 00.01 Attorney General Files (AS 5209), Wyoming State Archives, Cheyenne [hereafter WSA].
opportunity to sort out the coarse fish, trucking game fish to nearby ponds, reservoirs, and creeks with more water and feeding the coarse fish to trout in nearby state hatcheries. These managers tried to make the best of the situation by eradicating disliked trash fish and attempting to save trout. By the mid-twentieth century, salvaging fish became a standard part of management operations. While initially optimistic about western irrigation systems, anglers and managers learned hard lessons in their attempts to combat fish loss through irrigation canals and the low water conditions in lakes and rivers caused by irrigation.

During the late nineteenth and early twentieth centuries, anglers and fisheries managers optimistically set off to address fish declines caused by western irrigation and water law. The continued problems with fish loss and dewatering, however, prompted the incorporation of irrigation realities into sport and management. Anglers, farmers, and others began to see irrigation ditches as a place for sport and food, while state officials reluctantly integrated salvage work into their yearly fisheries management operations. These views of remaking constructed environments into fisheries that could serve multiple users expanded with the continued environmental changes of the twentieth century. In the years following World War II, the increase in western dam building provided a solution. Certain inland dams helped managers in their manipulation of western fisheries by ironically creating ideal trout habitat in many western rivers.

**Tailwaters**

An obsessive fly fisher and innovator, Gary LaFontaine wrote his master’s thesis in behavioral psychology on selective feeding in trout and based his seminal book *Caddisflies* (1989) on years of research and experiments like scuba diving in a river to see how insects and

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fly patterns looked to fish. LaFontaine also described how the environmental changes generated by the Yellowtail Dam on Montana’s Bighorn River created a “Disneyland for fly anglers.” The postwar construction of bottom-release dams throughout the West transformed water temperatures and stream flow, changing aquatic insect life and allowing trout populations to explode in these tailwater fisheries. While dam builders unintentionally developed near-perfect environmental conditions to grow trout, fisheries managers took advantage of the resulting ecological changes below large dams to plant millions of trout. The same dams that anglers once protested, then, oddly became a fishing destination for many. Bottom-release dams not only modified the fisheries below them, but also standardized fly patterns and fishing techniques for tailwaters across the country. In the same way that anglers previously adapted their sport to environmental changes, tailwaters cultivated a conformity that replaced local and regional variations of fly fishing. Hence, Gary LaFontaine called the Bighorn River a “Disneyland for fly anglers,” because although he enjoyed catching the large trout, it offered a “cheap thrill” in a crowded, unnatural environment. Like Disneyland, fishing tailwaters can provide a lot of fun despite the manufactured feel, but expect to wait in line, since these fisheries have drawn large crowds since the 1960s and 1970s. Tailwaters, however, represented a continuation of earlier policies in which anglers and fish managers—sometimes catering to tourists—manipulated rivers and fish in a Rocky Mountain trout culture that relied on widespread environmental change. In this case, they transformed trout habitat accidentally brought into existence by postwar dam building.

Although federal involvement in irrigation dated back to the National Reclamation Act in 1902, the large-scale construction of dams started during the New Deal and occurred primarily in

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the postwar era. The Army Corps of Engineers and the Bureau of Reclamation built numerous
dams along all of the West’s major rivers: the Columbia, the Colorado, and the Missouri.\textsuperscript{38} But
the dam building did not stop there. The agencies then moved to the major tributary rivers,
damming an astounding number of rivers. On the Columbia and its tributaries, the Army Corps
of Engineers and various public utility districts erected thirty-six dams, mostly for
hydroelectricity and flood control. Likewise, the Bureau of Reclamation constructed hundreds of
irrigation dams in western states.\textsuperscript{39} The ability of these dams to control water gave rise to the
modern West. That is, the sweeping dam system enabled the shift of American economic and
political power from the Rust Belt of the northeast toward the Sunbelt of the West and South.
Dams allowed urban growth by providing water and electricity for new Sunbelt cities like
Phoenix, powered industrial and military manufacturing, and watered extensive agriculture.\textsuperscript{40}
The water that made it possible—trout water—flowed from headwaters and snow in the Rocky
Mountains, filling slack water reservoirs to be pumped onto fields, into growing urban and
suburban communities, and through turbines to power the electrical needs of new
industrialization and urbanization. The immense environmental, economic, and social changes
wrought by Army Corps of Engineers and Bureau of Reclamation dam building also met
resistance from the growing environmental movement in the postwar era. Anglers often
contributed, playing key roles in the grassroots opposition to dams.

Many anglers believed that dams caused the death of a river, a common analogy
employed during in the fights against dams. They saw dams as detrimental to both fish and
scenery after learning lessons from earlier dam building on eastern coastal rivers as well as other
larger rivers around the nation. For example, the Wyoming Division of the Izaak Walton League

\textsuperscript{38} Worster, 276.
\textsuperscript{39} Reisner, 164-166.
\textsuperscript{40} Worster, 260-261.
of America worried about the scenery and fish that would be “destroyed” due to dam building, passing a resolution in 1939 that stated “broad public values” should be considered in the decision-making process. Other opposition employed similar language of death and destruction. When fly tying innovator, guide, and writer Dave Whitlock spoke out against a revised proposal in the 1970s to dam Montana’s Big Hole River, he made a comparison to the nearby Beaverhead River: “In recent years I have had the opportunity to witness the damming and death of the Big Hole’s sister river the Beaverhead. I look at the silt filling impoundment and ditch below and I cannot rationalize the worth of such a project and the death of the Beaverhead.” Anglers were not just being overly dramatic when they connected dams to the death of rivers.

Dams often killed fish life, especially along coastal rivers and anadromous fish runs. Dams additionally hurt inland fisheries and freshwater fish. After the construction of Clark Canyon Dam on the Beaverhead, one state wildlife official described the problems: “…there has been an almost complete elimination of fish from the 1¾ miles of Beaverhead River immediately below the dam. Vegetation inundated by the reservoir is decaying. This results in a lethal hydrogen sulfide concentration in water released into the river from the dam. We do not know how long this condition will exist.” Due to the environmental problems created by dam construction, like the fish kills in the Beaverhead, many anglers spoke out against proposed projects on their local waters. Dams, however, did not necessarily spell the death of rivers.

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41 Resolution No. 7, Wyoming Division of the Izaak Walton League of America, 12 August 1939, Sub-series 3, Box 286, Folder Fish Hatcheries, 1939 [no folder number], Collection #275: Joseph C. O’Mahoney papers, AHC.
43 Paul Schullery has observed that dams “are about the most technologically effective anti-salmon/shad/steelhead weapon that humans have ever perfected.” Schullery, 90.
44 Frank H. Dunkle to Cecil Gubser, 10 March 1965, Series IV, Box 5, Folder 3, MSS 213: Western Montana Fish and Game Association Records, UMM.
Despite the fears of anglers, over time, inland rivers like the Beaverhead could be remade into Disneylands with trout. Fly-fishing environmentalist Gary LaFontaine acknowledged early on this paradox of tailwaters: “Let me admit a bit of hypocrisy: whenever a dam is proposed I try through individual effort and membership in conservation organizations, to stop its construction; but if I had to make a list of my favorite trout fisheries it would include many tail-water rivers—some of them resulting from the very dams I worked hard to prevent.”

To the dismay and strange approval of LaFontaine and other anglers, dams refashioned many western rivers into popular attractions. In these tailwaters, the toxicant use on coarse fish, intensive trout stocking, and other trout management practices forced anglers like LaFontaine to reluctantly come to terms with the unnaturalness of the region’s trout culture.

The construction of bottom-release dams, mostly during the 1950s and 1960s, although entirely unplanned by the Bureau of Reclamation, eventually offered some great trout fishing. The environmental changes stemming from dam construction prompted Paul Schullery to call tailwaters “ecological palimpsests” because new ecosystems have been written over the top of older ones. Those Disneylands replaced earlier fisheries. Massive environmental changes regenerated tailwater fisheries, promoting western trout fishing. Some of the West’s most productive trout fisheries, such as the Bighorn and Beaverhead rivers in Montana, Wyoming’s so-called “Miracle Mile” on the North Platte, the Green River in Utah and Wyoming, and Colorado’s South Platte and Frying Pan rivers, occur below dams. All made possible, ironically, by the dams, western tailwater fisheries represent some of the top fishing destinations because of

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45 LaFontaine, *Caddisflies*, 197.
46 Ken Owens has observed the unintended nature of dam building: “Before construction, however, no one—not civil engineers, not fisheries biologists, and certainly not fly fishers—had an inkling of what impact these dams would have on downstream fisheries.” He noted that agency officials usually focused on the fishing opportunities the impoundments would create (the still water, warmwater fisheries that the dam opposition despised). Owens, 2.
48 Schullery, 93.
their high populations of large trout. Dammed western rivers may not have died, but they were transformed, integrated into a regional trout culture known for its environmental consequences.

As a manifestation of this Rocky Mountain trout culture, these river Disneylands required extensive environmental change to produce trout. Dams transformed the stream flows, water temperatures, and nutrient loads of the rivers below them, which in turn reshaped aquatic life. The best tailwater trout fisheries occur below high, large-storage capacity, bottom-release dams. The dams’ controlled releases stabilized stream flows, providing more water during the hot, late summer months, as well as mitigating the large spring runoffs. This promoted more streamside and aquatic vegetation, helping trout and insects (trout food) grow. Dams also regulated fluctuations in water temperature throughout the seasons. Lastly, the impoundments trapped sediment and nutrients, so the water flowed from the dams clear, oxygenized, and nutrient rich, yielding higher growth rates for vegetation, insects, and fish. In essence, these conditions prompted abnormal growth rates for trout. Anglers sometimes call large trout “hogs,” “footballs,” or “lunkers.” Unprecedented numbers of football-shaped fish live in tailwaters. At its peak, the Bighorn River boasted twelve thousand fish per mile, an unnaturally high population that could not exist without the Yellowtail Dam and Afterbay. Larger numbers of large trout exemplified these new tailwaters, allowing the expansion of a western trout culture and crowds of postwar anglers to escape the growing urban and suburban West to enjoy nature in the Rockies.

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As ecological palimpsests, tailwaters replaced earlier environments, creating coldwater fisheries in river sections that historically held warmwater species. Bottom-release dams have produced more trout habitat in places where they could previously not survive, like the semi-arid, sagebrush- and yucca-filled landscape surrounding the Bighorn River. Before the construction of Yellowtail Dam, the river held warmwater and coolwater fish. Seasoned Jackson Hole fishing guide Jack Dennis remembered catching northern pike from the undammed Bighorn in college with a Crow friend on his baseball team. Dennis recalled: “If someone had told me this was going to be a great trout fishery, I’d have laughed.”

Like the Bighorn in south central Montana, trout fisheries now exist in unlikely places like many of the southern states.

The South’s tailwaters brought both trout and new fishing and management strategies to the region, while many southerners reluctantly embraced trout fishing methods and ethos. By 1950, dams remade over three hundred miles of southern rivers into trout fisheries in places like Tennessee, Arkansas, and numerous other states. The White River drainage in Arkansas alone boasts four major trout tailwaters. In these places, the West’s trout and fly fishing traditions and management came up against the South’s bass and warmwater fishing culture. When these fishing cultures met, southern anglers often rejected the catch-and-release values so prevalent in the Rocky Mountains. Southern tailwaters enlarged an already vibrant western trout culture, while creating conformity in terms of ecosystems and the way people fished.

Dam building transformed insect life as well, a significant factor that standardized fishing techniques and fly patterns along the nation’s tailwaters. In constructing the ever-important bug

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50 Bantjes, 21.
52 Behnke, 43-44; Helmer, 4.
53 Behnke, 44.
puppets, fly fishers recreate nature at the tying vise. They wrap feathers, fur, and other materials around a hook, trying to match sizes and colors and looks, all in the attempt to tie a perfect little insect doppelganger to catch trout. Fly tiers base this craft on streamside observation and sometimes the collection of insects. Or, through years of fishing the same waters, they have gained an intuitive knowledge of the types of patterns that might work for the season’s various hatches. English poet John Gay nicely summed up the whole process centuries ago in *Rural Sports* (1713):

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He shakes the boughs that on the margin grow,
Which o’er the stream a waving forest throw,
When, if an insect fall, (his certain guide,)  
He gently takes him from the whirling tide,
His gaudy vest, his wings, his horns, his size;
Then round the hook the chosen fur he winds,
And on the back a speckled feather binds;
So just the colors shine in every part,
That nature seems to live again in art.  
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Dependent on nature’s creatures, this art reacts to environmental changes. Tailwaters, then, caused massive changes to fly fishing, as fly tiers shifted their art in order to catch lunkers.

The varied stream flows, nutrients, and water temperatures downstream from dams created new insect life. Fewer insect species, mainly midges, scuds, sowbugs, aquatic earthworms, and BWOs, inhabited the river sections near the dams, but they existed in high concentrations and tended to be tiny. In the 1970s, one Colorado fly fisher and his fishing partners started to realize their traditional fly patterns did not work so well on the South Platte tailwater. As passionate fly fishers, they attempted to get a copy of entomologist J. V. Ward’s

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55 Owens, 5.
1973 University of Colorado dissertation (imaginatively entitled “An Ecological Study of the South Platte River below Cheesman Reservoir, Colorado with Special Reference to Microinvertebrate Populations as a Function of the Distance from the Reservoir Outlet”) in order to learn more about what types of bug puppets might work better. Unfortunately, it had “disappeared mysteriously” from the library shelves.56 He and his friends discovered—albeit a little late, as shown by the stolen dissertation—that tailwaters rendered big trout and different aquatic insects, thereby requiring new fishing methods and flies. Just as the small changes to gear during the nineteenth-century tackle revolution gave rise to dry fly fishing, new tailwater environments demanded larger changes to the sport.

Changes to insect life—Ward’s “microinvertebrate populations”—happened in all tailwaters, largely standardizing the tailwater fly fishing across the country. Fly patterns that work well along the Beaverhead, such as simple black midges and amber scuds tied on hooks only a few millimeters long, could catch trout in any tailwater, anywhere. These patterns represent this standardization of tailwater fishing, where fly fishers usually dead drift tiny nymphs deep underwater, the fly patterns for which remain remarkably similar across the country. Born on Colorado’s South Platte tailwater, the weighted nymph fishing technique (sometimes called the “South Platte technique”) became popular in the 1960s.57 Gary LaFontaine described the later conformity on the Bighorn, as this method spread to Montana and other tailwaters around the nation: “Guides in drift boats continually pass in copy-cat flotillas, every angler in every boat seemingly dangling a nymph pattern below a brightly colored bobber.”58

While insect diversity and more traditional fishing methods returned further downstream from

56 Engle, 30.
57 For more information, see Gary LaFontaine, Challenge of the Trout (Missoula, MT: Mountain Press, 1976), 198-199. LaFontaine observed that “On Colorado streams, the art of the deep nymph is a cult akin to a religion. Anglers of the region are masters of the technique.” LaFontaine, 198.
the dams, the surprising lack of variation in fishing methods has been embraced by many anglers searching for gigantic tailwater trout.\(^59\) As Disneylands with trout, tailwaters at once paid homage to the inescapably large dams looming upstream while obscuring the constructed environment of the rivers themselves. Despite the lunker trout, the new trout fisheries, and the standardized techniques, these Disneylands began to efface the environmental and social problems supplied by this latest incarnation of the Rocky Mountain trout culture.

**Trouble in Paradise**

Many bottom-release dams produced outstanding trout fishing in the last fifty years, but they engendered a host of environmental and social problems. Like Disneyland’s potential to hide reality in its celebrated imaginary world, tailwaters have enveloped native fish declines, crowding, and user conflicts within allure of fishing for lunker trout. Tailwaters destroyed natural rivers and native fish as state agencies used them to expand a regional trout culture. Likewise, the fights over the Bighorn River tailwater eventually extinguished Crow rights to regulate non-Crow fishing within their own reservation, with the Supreme Court case *Montana v. United States* (1981). The lack of control over the water itself also proved to be a major problem in the management of tailwaters. Despite the perfect factors for trout growth like the abundant insects, regulated releases and uniform water temperatures, tailwaters, as “fortunate accidents” remained dependent upon the designed dam uses like irrigation and hydroelectricity.\(^60\)

The Army Corps of Engineers and the Bureau of Reclamation built dams for irrigation, flood control, and hydroelectricity, thus water storage and stream flows were not allocated to maintain fisheries below the dams. These uses translated into “wildly fluctuating flows” that

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\(^59\) Engle, 33.

\(^60\) Behnke, 43.
many tailwaters have suffered.\textsuperscript{61} Water shut offs and irregular flows worked against those excellent conditions that produce those gigantic trout. The North Platte’s Miracle Mile, for instance, experienced fish kills in the early 1960s due to low water flows and, in some cases, water shut offs. The populations only returned after the Wyoming Game and Fish Department worked with the Bureau of Reclamation to try to establish minimum flows.\textsuperscript{62} One Wyoming angler, after having some nice fall fishing in 1963 below Glendo Dam, arrived at the river one day to find pools of dead and dying fish, as the water had been shut off. He described one scene: “In the one pool there must have been 200 rainbows 17-20 inches long, all dead and many, many more smaller dead rainbows.” Upon complaining to Bureau of Reclamation workers, they told him by law, they could not “waste water” for the fish.\textsuperscript{63} The same arid conditions during the early 1960s caused fish kills in Idaho reservoirs. Officials reported the worst problems below Magic Dam: “large numbers of trout died due to overcrowding and suffocation after the water was turned off.”\textsuperscript{64} Similar scenes played out on other tailwaters since dam construction, illustrating the problems with conflicting western water uses within the limits of a semi-arid climate. Even with optimal stream flows, the construction of dams led to other environmental problems. This expansion of a western trout culture relied on the manipulation of new habitats and trout stocking, causing difficulties for native ecosystems.

As constructed trout fisheries, tailwaters required a considerable amount of management. The new trout fisheries throughout the West and the nation did not spring up overnight and in some locales only occurred in close proximity to the dams and their coldwater flows. Fishery

\textsuperscript{61} Behnke, 43.
\textsuperscript{63} William O. Nord to Milward L. Simpson, 29 October 1963, Series III, Box 356, Folder 11, Collection #26: Milward L. Simpson senator’s office files, AHC.
\textsuperscript{64} Idaho Fish and Game Department, \textit{Twenty-Ninth Biennial Report of the Fish and Game Department of the State of Idaho, July 1, 1960 to June 30, 1962} ([Boise?], 1962), 63.
agencies had to supplement the new, yet barren, cold water habitats with trout stocking (managers described this as “put-grow-and-take” stocking). After the fish-killing hydrogen sulfide subsided from the Beaverhead’s Clark Canyon Dam, the Montana Fish and Game Department planted trout with good results. Other agencies similarly introduced trout into tailwaters. On the White River in Arkansas, the cold water temperatures killed most of the warmwater species except suckers below the dams, requiring the planting of trout species. As stocking gave new life to trout fisheries, warmwater and coolwater fishes declined.

Tailwaters spelled the decline of certain native fish species, as cold water temperatures ruined their habitat or fish managers eradicated them with the widespread use of fish toxicants during dam construction. Before being dammed, the Bighorn River did contain some trout, but the dam created the phenomenal trout fishery that amazed Jack Dennis. Downstream from Hardin, the river became warmer and reverted back to its pre-impoundment form. Warmwater species comprised most of the fish population in these lower stretches, with the majority being goldeneye. In the case of the Colorado River, a variety of factors caused the endangerment of the river’s endemic fish species. Earlier habitat change, introductions of nonnative species, and water pollution from industrial and urban sources, along with later dam building and toxicant applications led to native fish declines. While native fish populations started to decline earlier, the closing of the Colorado’s upstream dams in the 1960s meant many native fishes could not

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65 Pfitzer, 27.
66 In 1965, the Montana Fish and Game Department took over responsibility for state parks and, in 1979, became known as Montana Fish, Wildlife and Parks, although the latter sometimes appeared earlier in publications. Both are used in the text, depending on what was listed in the sources used.
67 Helmer, 61. Unsurprisingly, southern tailwaters relied more on trout stocking than western ones because of the almost complete lack of natural reproduction. Pfitzer, 26.
68 John Peters, Southeast Montana Fishery Study, Job No. 1, Inventory of the Waters of the Project Area, May 1, 1959-April 30, 1960, Job Completion Report, F-20-R-4 (Montana Fish and Game Department, May 1, 1960), 2.
adapt to or spawn in the new coldwater habitat. The Flaming Gorge Dam on the Green River alone destroyed sixty miles of spawning habitat for native species.\(^1\) Fisheries managers from Utah, Wyoming, and the US Fish and Wildlife Service also used the opportunity to treat the Green River and its tributaries with fish toxicants.\(^2\) They aimed to exterminate maligned trash fish to plant nonnative rainbow trout, a common management move at many western dam sites during construction. In the wake of this manipulation, good trout fishing could reportedly be had by 1964 and 1965.\(^3\) Native fish population declines followed; by the early 1970s, scientists believed that four of the Colorado’s endemic fish to be endangered.\(^4\) In order to become Disneylands with trout, however, native fish had to be removed—naturally or unnaturally—from tailwaters. Anglers searching for large trout did not necessarily worry about native fish declines in the mid-twentieth century. Instead, they flocked to these trout rivers.

Crowding marked the tailwater fishing experience, just as it characterized amusement parks. Fly fishing humorist John Gierach has called this crowding at good fishing spots “hog-hole mob scenes,” observing that in most cases they take place at a tailwater fishery: “The local wildlife agency probably describes it in florid terms—‘a jewel in the crown of the state’s fisheries,’ or something like that. It’s also public, easily accessible and every fisherman in a three- or four-state area knows about it.”\(^5\) Big trout attracted big crowds at most tailwater fisheries. In 1965, anglers fished the Missouri River below Holter Dam more than any other river section in Montana. Montana Fish, Wildlife and Parks reported that the stretch supported “over

\(^4\) Holden and Stalnaker, 217.
40,000 fisherman days per year." By the late 1970s, Wyoming officials likewise observed the popularity of the Miracle Mile, stating that it “supports over 25,000 fisherman days with an average catch rate of .5 trout per hour.” The congestion magnified user conflicts. Some agencies have attempted to control overuse through special regulations. On the Beaverhead River, guide trips and out-of-state float fishing on certain stretches one day a week have been prohibited. More recently, the overcrowding on the San Juan River—which brings $20-40 million to the state’s economy each year—prompted the New Mexico legislature to propose a user fee specifically for the river. The environmental changes of tailwaters precipitated these and other user disagreements, illustrating economic importance of large trout in the Rocky Mountains. In certain cases, the significance of trout clashed with other users.

Years of environmental change and conflicts culminated in an important case that exemplified the new power of the region’s outdoor recreation and tourism industry to control both nature and people. On the Bighorn River, friction between the Crow Tribe and the state of Montana, which represented non-Indian anglers, ended with the 1981 Supreme Court case *Montana v. United States*. The verdict took away Crow ownership of the Bighorn riverbed, effectively also eliminating their rights to regulate non-Indian fishing on a river than ran right through the reservation. The case can only be understood in terms of the trout culture and economy that had developed around the new Bighorn tailwater. Had the river still been filled with goldeneye, northern pike, and other warmwater fish, the case would have been unlikely. If

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77 Fishery Management Investigations, Project Statement Amendment No. 2, Multi-species Management of the Lower Platte River System, Federal Aid in Fish and Wildlife Restoration, Project No. F-44-R, Box 1, Folder Fisheries Management Investigations-Project Amendments [no folder number], RG 40: Game and Fish Department, 00.16 Federal Aid Projects (AS 5019), WSA.
tailwaters can be compared to Disneylands with trout, the conflicts surrounding the Bighorn River in the 1970s and 1980s can be likened to the somewhat disturbing “It’s a Small World” ride, with its racialized undertones and inescapable creepiness. Just as issues of race hovered beneath the surface of seemingly perfect places, the fights over the Bighorn implicitly involved racial tensions created by the crowds of white anglers drawn to the tailwater trout.

_Montana v. United States_ revolved around ownership of the Bighorn riverbed as well as non-Indian hunting and fishing on non-Indian lands within the Crow Reservation. After the creation of Yellowtail Dam, the Crow Tribe sought to prohibit non-member hunting and fishing within the reservation through a tribal resolution passed in 1973.79 To do so, they claimed ownership of the riverbed and the right to regulate non-Indians on non-Indian land held in fee simple. Dismayed the ban, Montana Fish and Game Department officials bemoaned that “many miles of good trout waters are located on tribal lands with fishing restricted to Indians.”80 After the official tribal resolution, the state of Montana asserted its authority to regulate the hunting and fishing of non-Indians on the reservation. Acting on Crows’ behalf, the federal government responded by filing an action to seek a judgment over ownership of the riverbed and who held the authority to regulate hunting and fishing within the reservation. The resulting legal battles took years to decide.

The case eventually reached the Supreme Court in 1981. In a 6-3 decision, the high court reversed the court of appeals decision and held earlier treaties with the Crows said nothing of riverbeds and that Montana gained ownership when it was admitted to the union. Justice Stewart’s opinion maintained that the treaties failed to define Crow ownership of riverbeds: “The

79 Megan Benson, “Damming the Bighorn: Indian Reserved Water Rights on the Crow Reservation, 1900-2000” (PhD diss., University of Oklahoma, 2003), 177. For an in-depth study of the case and the Crow reaction, see Benson, ch. 5.
80 Peters, 2.
Crow treaties in this case, like the Chippewa treaties in *Holt State Bank*, fail to overcome the established presumption that the beds of navigable waters remain in trust for future States and pass to the new States when they assume sovereignty.” The decision agreed that tribes can control hunting and fishing on tribal lands, including the regulation of non-Indians within those lands, but “that power cannot apply to lands held in fee by non-Indians.” In addition, the court found two exceptions to this rule (now known as the Montana exceptions). The first stated if non-Indians held a contractual relationship with a tribe, that tribe had the right to regulate activities in those lands. The second rule declared that a tribe may have authority over non-Indian, fee simple land when the owner’s conduct threatens the tribe: “A tribe may also retain inherent power to exercise civil authority over the conduct of non-Indians on fee lands within its reservation when that conduct threatens or has some direct effect on the political integrity, the economic security, or the health or welfare of the tribe.” In the decision, Justice Blackmun dissented (joined by Justices Brennan and Marshall), claiming the court must interpret treaties how the tribes would have construed them. In this case, the Crows would have construed the treaty to include ownership of the riverbed. Blackmun argued, “Because I believe that the United States intended, and the Crow Nation understood, that the bed of the Bighorn was to belong to the Crow Indians, I dissent from so much of the Court's opinion as holds otherwise.” Despite going against its own principles, the court took away Crow rights to regulate one of the nation’s most famous and most crowded tailwaters. The case indicated that seemingly beneficial environmental change often lacked social justice in the 1970s and 1980s.

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82 *Montana v. United States*.
83 *Montana v. United States*. 
After the verdict, many tribal members lamented the loss of the river. In response to the
decision and the opening of the river, Crow activists immediately launched a protest. Using
American Indian Movement actions of the 1970s as examples, they briefly occupied a bridge. At
one point, a tense confrontation broke out between a BIA policeman protecting protestors with
his gun drawn and a sheriff from a neighboring county (far from his jurisdiction) ready to sic
dogs on the Crow protestors that included children and tribal elders. The alarming standoff
quickly died down, but the resentment lasted for years. Since the opening, the Bighorn River has
become a top destination for non-Indian anglers and tourists seeking those monstrous tailwater
tROUT. The whole affair showed the controversial and unsettling aspects in manufacturing place
and trout in the Rocky Mountains. The state officials, outfitters, anglers, tourists, and boosters
who made a regional trout culture held the power and political sway to control fisheries in a way
only imagined by earlier government officials and fish culturalists in the rise of state
conservation.

Conclusion

Dam construction and the consequences of building a massive irrigation infrastructure
revealed a complicated history of environmental change, proving both problematic and beneficial
to the region’s fisheries and people. In the nineteenth and twentieth centuries, anglers and
fisheries managers first rallied against, and then somewhat reconciled, irrigation canals draining
water and fish from streams and lakes. The construction of bottom-release dams throughout the
arid West created remarkable tailwater trout fisheries by the 1960s. These dams forced fly fishers
to tie new fly patterns adapted to the remade river environs, creating a new type of
interchangeability within fly fishing techniques. Disneylands with trout produced assorted
ecological and social problems as much as they cranked out lunkers. The new environments

84 Benson, 208-210.
turned out deadly for many native fish species. Additionally, the crowding and popularity brought forth user conflicts like those surrounding Crow rights to the Bighorn River. In the postwar era, control over those outside of this trout culture became more pronounced with the rising importance of conservation to the western tourist economy. Yet the sobering realities of troubles along tailwaters failed to diminish the cultural and economic importance of western trout in the twentieth century that pushed out certain groups like the Crow. In some ways, tailwaters epitomized all the historical changes and environmental manipulations ignored in the mythology of fly fishing and trout.

The next chapter illustrates how western anglers and some state agencies started to reject the artificiality of tailwaters and the modern world to celebrate the wild qualities of Rocky Mountain rivers and trout. Within a growing environmental movement, they stood up against water pollution, habitat degradation, and the well-established western hatchery system. The shift to “wild trout” marked the enduring effects of the West’s entrenched trout culture.
CHAPTER SIX
WILD TROUT AND WILD RIVERS

In the early 1970s, a dentist and a plastics salesman with hobbies in entomology revolutionized American fly patterns with their book *Selective Trout*. Authors Doug Swisher and Carl Richards conducted not-so-amateurish scientific studies on Michigan’s Au Sable River that formed the basis of the book, which reads as part fly-tying manual, part entomology textbook. After meticulously collecting, categorizing, and photographing insects, they developed new fly patterns designed to more accurately imitate mayflies and other insects. The book transformed dry fly fishing with the simple, no-hackle (no feathers wrapped around the hook) patterns, quickly gaining popularity across the United States. In the Rocky Mountains, the dressed-down bug puppets became especially prevalent on waters like the Henry’s Fork of the Snake River and Armstrong Spring Creek along the Yellowstone. As *Selective Trout* refashioned fly fishing on certain waters, it exemplified the wild trout era of the 1960s and 1970s. Swisher and Richards argued that fly fishers needed better patterns to trick trout, believing trout had become more and more selective with the rise of catch-and-release fishing as well as the growth of fly fishing.

In the wild trout era, many anglers rejected the plasticity of the put-and-take fishing experience on western rivers, especially on tailwaters. For all the new and unintended trout

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2 Doug Swisher and Carl Richards, *Selective Trout: A Dramatically New and Scientific Approach to Trout Fishing on Eastern and Western Rivers* (New York: Crown Publishers, 1971), 1. For more on Swisher, Richards, and their no-hackle flies, see Joe Brooks, *Trout Fishing* (New York: Outdoor Life, 1972), 272-280. Gary LaFontaine placed the no-hackle patterns within a long dry fly tradition dating back to the nineteenth century: “The dry fly as a flush imitation is as old as the practice of ‘cracking’ the wet fly free of excess moisture, thereby momentarily achieving a surface drift.” Gary LaFontaine, *Challenge of the Trout* (Missoula, MT: Mountain Press, 1976), 47-48. For the growth of fly fishing during the 1970s, see Paul Schullery, *If Fish Could Scream: An Angler’s Search for the Future of Fly Fishing* (Mechanicsburg, PA: Stackpole Books, 2008), 8-9. George Grant also noted that many patterns were lost during the postwar popularity of spin fishing: “many of these old patterns were lost because they were unknown to a new generation of fly-tyers and fly fishermen when the fly resurgence occurred.” George F. Grant, *Montana Trout Flies* ([Butte?]: privately printed, 1972), no pagination.
fishing fabulousness birthed by postwar dam building, Disneylands with trout produced
crowding and serious conflicts in an economically-important regional trout culture. Yet not all
anglers and fisheries managers embraced the manipulation of natural systems, even if it had
created rivers filled with lunker trout. In illustrating the shift in values that privileged wild trout
(self-sustaining native and nonnative populations) over hatchery varieties, this chapter serves as
the logical, if unnatural, end to the history of Rocky Mountain trout. Nonnative trout held a
central position in these new conceptions of place that privileged “wild,” while obscuring the
environmental costs of the Rocky Mountain trout culture and creating a lasting blind spot in
western river and fish conservation.

While western anglers had a history of advocating for wild trout under a larger American
celebration of untamed nature, during the 1960s and 1970s, they started the slow dismantling of
the western hatchery system that had made trout fishing so popular and accessible, along with
some willing biologists and fish managers. Preference for wild trout, then, defined both the
shifting values of many anglers and the changing management techniques. Responding to
scientific studies and demands from anglers, fisheries managers realized widespread hatchery
upkeep of Rocky Mountain trout was detrimental to trout populations as well as expensive.
Angler-conservationist support, however, made possible the more restrictive regulations for trout
(but not coarse fish species) and decline of planting millions of catchable-sized trout yearly.
Selective Trout reflected these significant changes. Swisher and Richards pragmatically created
their more realistic fly patterns amidst both a fly fishing boom and the growing popularity of
catch-and-release. Like Swisher and Richards, many anglers saw wild trout as harder to catch,
enjoying the challenge compared to hatchery copies. Anglers’ concerns over catching wild trout
also translated into better environmental protections, strengthened by mainstream environmental
concern of the 1960s and 1970s. In rejecting the absurdness of hatchery stocking, wild trout meant wild rivers as the shift away from reliance on hatcheries made healthy habitat all that more important in sustaining regional trout fisheries.

During the wild trout era, the region’s trout culture reached its apex. Over a century of environmental change led to self-sustaining (defined as “wild” by fish managers) populations of trout throughout western waters. The central irony, however, was that they focused mostly on nonnative species. During the 1970s, anglers and state agencies naturalized this history of trout introductions and fish stocking as they looked beyond hatcheries to mount significant movements to save local and state fisheries. The wild trout era solidified the continued economic and cultural importance of western trout, creating the Rocky Mountain trout culture that exists today. Many westerners and tourists still enjoy—or confront—trout fishing in the Rocky Mountains while grassroots constituencies of anglers, guides, outfitters, local business owners, and conservationists have worked to address continued and significant environmental problems surrounding regional rivers and trout. Yet new scientific and ethical ideals of nativeness and the preservation of biodiversity have recently offered new challenges to this western trout culture. For instance, the use of fish toxicants to kill nonnative trout in native fish restoration projects suggests an urgent need to revisit western trout conservation.

This chapter traces the shift to wild trout, first by examining the earlier criticisms of the hatchery system from anglers and ecologists. After illustrating the precursors to the wild trout era, it then focuses on wild trout ethics and management as well as efforts to protect rivers and habitat within the context of the modern environmental movement during the 1960s and 1970s. Previous to this wild trout era, anglers embraced the wild characteristics of trout and nature, while fish agencies sporadically managed for wild trout.
Wild Trout Precursors

Long before the wild trout era, some anglers valued native fish and wild trout, in a strand of angling culture that has always been present in the Rocky Mountains, even if just a small minority. Adding to the traditions of wild nature, anglers’ experiences on their local waters played an important role in rethinking the western hatchery system. Many detested catching hatchery trout, which translated into increasing attacks on hatchery management. Certain agencies, namely the National Park Service, as well as western state officials occasionally managed for wild trout even during the prime of put-and-take stocking and Disneylands with trout.

During the nineteenth century, many Americans began to see the wild qualities of nature in a more positive light. Influenced by Romanticism, evangelical revivalism, and nationalism, many Americans connected nature to God, redefining the sublime to appreciate the awe of wild landscapes. Holding a sort of collective amnesia in regards to dispossession, western industrialization, urbanization, and environmental change, the conception of wild nature shaped angling and recreational experiences. This aspect of angling culture proved central to the later shift to “wild” trout.

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Influenced by a reverence for the wild, some anglers criticized the western hatchery system in the late nineteenth and early twentieth centuries because they disliked catching fish that had become accustomed to humans. In a nineteenth-century fish culture handbook, Livingston Stone pondered the consequences of artificial propagation to the character and temperament of fish themselves, wondering if trout would become domesticated like horses and farm animals.\(^4\) Future generations noticed these changes to trout; hatchery trout acted tamer than wild trout. “This is the last generation of trout fishers. The children will not be able to find any,” Denver angler and socialist preacher Myron W. Reed lamented in the late nineteenth century, “Already there are well-trodden paths by every stream in Maine, New York, and in Michigan. I know of but one river in North America by the side of which you will find no paper collar or other evidence of civilization. It is the Nameless River. Not that trout will cease to be. They will be hatched by machinery and raised in ponds, and fattened on chopper liver, and grow flabby and lose their spots.”\(^5\) Other anglers echoed these criticisms of hatchery trout. Adapted to human feeding and artificial environments, hatchery trout often approached humans, the creatures they associated with food. Anglers found the willing prey a little too easy to catch. After easily hooking fish, anglers complained hatchery fish did not fight as hard. Anglers detested that the characteristics that made catching hatchery trout just a little too easy. In addition, the altered appearances and comparatively dull colors of hatchery fish did not exactly please the senses of anglers who valued the beauty of trout. Anglers had developed a substantial critique of hatchery fish by the start of the wild trout era. Only during the 1960s and 1970s did fish agencies start to


scale back their hatchery work. Before then, fisheries managers often brushed off critics and continued their heavy reliance on hatcheries to maintain a regional trout culture.

Hatchery stocking represented an ingrained part of twentieth-century fish management. Managers focused on regulations and some habitat improvement, but only slowly overturned their confidence to control nature. By the 1920s and 1930s, some fish managers felt they needed to respond to angler criticisms, justifying the expensive and widespread hatchery activities. Federal and state agencies often touted public demand and support from conservation organizations in validating their hatchery policies.\(^6\) The political aspects of fisheries management guaranteed that federal and state agencies would only change slowly, as the hatchery system juggernaut remained hard to criticize.

In the 1930s, one US Bureau of Fisheries scientist conducted experiments with hatchery brook and rainbow trout to prove anglers wrong about their poor opinions of hatchery fish. He addressed numerous concerns, arguing that hatchery trout were “about as pretty as any fish had a right to be”; they even tasted better than wild trout; they fought well; they ate natural insects; they provided sport; and they were difficult to catch.\(^7\) After finishing the angling experiments, the fish culturalist concluded that hatcheries did not change trout behavior. His almost absurdly reactionary response revealed the entrenched hatchery use in the era’s fisheries management practices. Accordingly, the scientist thought that trout would act wild just by being stocked in natural waters: “When trout that look like real trout are put out in trout waters for trout fishermen

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\(^6\) For instance, one US Bureau of Fisheries manager stated in 1931 that “It is the policy of all conservation organizations throughout the United States that the public waters shall be kept as well stocked as possible with game fishes because of the values of these fish in the recreational life of the people.” Glen C. Leach, “Propagation and Distribution of Food Fishes, Fiscal Year, 1931,” in US Bureau of Fisheries, Report of the United States Commissioner of Fisheries for the Fiscal Year 1931 with Appendixes (Washington, DC: GPO, 1932), 668, http://docs.lib.noaa.gov/rescue/cof/COF_1931.PDF (accessed January 30, 2011).

to catch, I firmly believe they will act like trout…””

Despite problems with hatchery trout, fish culturalists continued to search for better management solutions within hatcheries themselves. In 1929, one federal manager observed that parasites “only rarely” attacked wild trout, whereas hatcheries constantly dealt with disease and parasites due to the unnatural environment and crowding. Yet, the solutions centered on continued manipulation of hatcheries and fish, illustrating the ingrained optimism placed on human supremacy over nature present within modern fisheries management. By the mid-twentieth century, these ideas started to change. The quiet rise of ecology profoundly altered the western world’s ideas of nature, bringing with it criticisms of modern scientific management.

In speaking of the sea change needed for a more ethical and ecological concern for nature, Aldo Leopold once said, “Perhaps such a shift of values can be achieved by reappraising things unnatural, tame, and confined in terms of natural, wild, and free.” Leopold knew that the concept of “wild” could only exist as a dichotomy that compared wild to domesticated, or civilized, or hatchery, or tailwater. No wonder then, in the midst of postwar trout stocking that planted millions of catchable-sized trout in western waters, ecologists and anglers started to denounce hatchery trout and modern fisheries management techniques.

The ecological viewpoint conceptualized the environment as a biotic community that included humans as both a member of the community and its moral protector. By the mid-twentieth century, “natural resources” became ecosystems, as this frame of reference abandoned

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8 Lord, 345.
the optimistic and controlling attitudes of modern fish culturalists.\textsuperscript{11} The focus on ecosystems rather than single species did not entirely transform scientific thinking and management, as the continued trash fish eradication programs revealed, but did erect a framework for criticisms of hatcheries. Central to the conversion, Aldo Leopold’s and others’ early concerns for native fish criticized the often haphazard nature of western trout introductions and hatchery management. In his seminal \textit{A Sand County Almanac} (1949), Leopold wrote eloquently about a land ethic, developed in the years since his defense of native western fish in 1918. Leopold placed humans in a community of life—expressed so simply and profoundly—marked the rise of ecology and the biocentric ethics it championed.\textsuperscript{12} Modern resource management did not fit in this community and land ethic.

At the height of put-and-take fishing and catchable-sized trout stocking, Leopold and others began to question the unnaturalness of it all. He promoted sporting values that brought people closer to nature and wildlife, and had ingrained ethical considerations as a “sport.”\textsuperscript{13} Leopold believed the manipulation of natural systems created second-rate aesthetics and poor management practices that ignored environmental degradation:

Consider, for example, a trout raised in a hatchery and newly liberated in an over-fished stream. The stream is no longer capable of natural trout production. Pollution has fouled its waters, or deforestation and trampling have warmed or silted them. No one would claim that this trout has the same value as a wholly wild one caught out of some unmanaged stream in the high Rockies. Its esthetic connotations are inferior, even though its capture may require skill….several over-fished states now depend almost entirely on such manmade trout. All intergrades of artificiality exist, but as mass-use increases it tends to push the whole gamut of conservation techniques toward the artificial end, and the whole scale of trophy-values downward.\textsuperscript{14}

\textsuperscript{12} Worster, 284.
\textsuperscript{13} Leopold, 177-178.
\textsuperscript{14} Leopold, 169-170.
From Leopold’s viewpoint, hatcheries could never provide quality fishing experiences, in large part, because they failed to address important conservation issues. Leopold voiced a growing concern from anglers and new generations of fisheries biologists.

Other writers likewise began to rethink the hatchery system around the same time. In *Fishing in the West* (1950), Arthur Carhart addressed conservation issues in a fishing manual that capitalized on the growing numbers of Rocky Mountain anglers in the postwar era. After chronicling the history of the degeneration of western waters from gold mining, poor forestry practices, overgrazing, and dam building, Carhart observed the problems with contemporary hatchery work. Western states continued stocking catchable-sized trout, despite earlier studies that found the practice expensive and not necessarily a good fix for declining fish populations. He then called for more habitat protection rather than the hatcheries so prevalent in the time period: “The fundamental salvation of trout fishing in the West, or anywhere, lies in the maintenance of environment…” Optimistically ending with the hope of anglers working together on habitat problems, Carhart foresaw the later shift to wild trout ethics and management in the 1960s and 1970s. State and federal agencies, however, also sporadically managed for wild trout previous to the wild trout era, as the influence of anglers’ appreciations of wild trout and nature helped shape changing management practices.

Even in the early and mid-twentieth century, at the western hatchery system’s height, fish managers still governed some wild trout streams. First, despite the millions of fish poured into regional lakes and river each year, state and federal agencies still did not have the resources to annually stock every single body of water. These waters inadvertently became wild trout rivers. Conversely, fish managers intentionally left some rivers alone. In the 1940s, Wyoming officials

16 Carhart, 134.
shifted stocking practices to reflect anglers’ dislike of hatchery trout, observing that anglers favored “wild fish to the hatchery-reared variety.”17 A decade later, the agency sought to preserve cutthroat trout fishing in the Snake River, one of the few places the native fish still existed. As such, they opposed a proposed federal hatchery near Jackson Hole, worried that the nonnative rainbow trout from it would threaten the holdout position of the Snake River cutthroat. One official noted a divide between locals who liked wild fish and tourists who wanted the easier, catchable-sized hatchery fish stocked: “The idea that large fish should be stocked in the Snake River as a tourist attraction is not well taken since most people that fish that area are looking for wild trout rather than the hatchery-reared variety and unfortunately, unless hatchery-reared fish of this size are caught within a week or two of their planting they do not survive any better than small fish. On the other hand, the cost of their production is significantly greater.”18 Like certain employees of the Wyoming Game and Fish Department, locals contested monetary and environmental costs of the largely unchecked trout stocking widespread in the mid-twentieth century. Similarly, the National Park Service increasingly managed for wild trout at the same time other western agencies ramped up their hatchery stocking programs.

The National Park Service had already curtailed nonnative trout stocking in the 1930s and began to focus on maintaining native fish within park borders. The agency diverged from other management units due to its mandate to preserve the unique flora and fauna of the parks. In trying to promote the unique fish life of national parks, the park service represented the only federal or state agency that refused to stock catchable-sized trout in the Rocky Mountains. Instead, they became more concerned with native fish. Consequently, they continued with some

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native fish “maintenance stocking,” mostly under the erroneous belief that it could help maintain native fish populations. But even native fish stocking declined within various park boundaries by the mid-twentieth century. NPS, for instance, ended maintenance stocking of cutthroat in Yellowstone Lake during the 1950s.\(^\text{19}\) By 1960, the National Park Service entirely shifted their focus to the restoration of native fisheries, by regulating catches with more restrictive creel limits.\(^\text{20}\) Unique among western fish management agencies, the park service did not cater solely to anglers and included non-game fish (aka trash fish) in their management plans. One official observed non-game fish held other values besides game: “Species which are of little interest to the angler may be of greater significance ecologically and biologically than sport fishes.”\(^\text{21}\) With a progressive policy, the park service helped usher in a widespread critique of hatcheries and the hubris of many management practices.

The wild trout era, however, could only take place within the context of postwar put-and-take fish stocking and the Disneylands with trout fishing experiences that pushed many anglers to seek more natural experiences. The modern environmental movement gave power to these ideals of anglers and managers and provided significant legitimacy to Rocky Mountain wild trout conservation.

**Catch-and Release Fishing and Wild Trout Ethics**

Wild trout ethics and management gained ground in the midst of the 1960s and 1970s modern environmental movement. With the force of mainstream environmental concern and consensus, some anglers and managers rejected the hubris of earlier generations’ reliance on hatcheries and fish stocking. Anglers contributed to this growing concern, responding to habitat


\(^\text{21}\) Wallis, 237.
change in the postwar era as well as the intensive manipulation of trout fisheries. The rise of catch-and-release fishing made possible these shifts, as this conservation- and sport-oriented technique became a mantra for fly fishers and some spin fishers in the 1960s and 1970s.

While catch-and-release has an extended history, it became an ethos to growing numbers of anglers, particularly fly fishers by the 1970s, as they rallied against postwar environmental degradation and tried to embrace a more natural fishing experience. Purposefully releasing fish dates back centuries to both the sporting ideals of the English leisure class and the more practical consideration of all anglers that small fish were often not worth the effort to clean or were too small to eat (and became illegal to keep during the rise of state conservation). Above all, ethics defined sporting values over time and place. When British angler Humphry Davy warned in the early nineteenth century of “an end to the sport in the river” if fellow anglers kept too many fish, he extolled the virtues that remained surprisingly static over the years. Master fly fisher Lee Wulff (who else could tie a size 28 fly—smaller than a pencil tip—with no vise?) helped popularize the concept of catch-and-release fishing among mid-twentieth century Americans in his *Handbook of Freshwater Fishing* (1939) as well as his other writings. In the book, Wulff observed a blossoming catch-and-release sentiment: “There is a growing tendency among anglers to release their fish, returning them to the water in order that they may furnish sport again for a brother angler. Game fish are too valuable to be caught only once.” In that last sentence, the oft-repeated words of the value of game fish defined the fly fishing ethos for many of its twentieth-century practitioners.

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While catch-and-release fishing was not unique to the Rocky Mountains, it did have numerous homegrown advocates. For instance, Ted Trueblood frequently promoted catch-and-release in his column by the 1950s. The values, however, appeared much earlier in his fishing journal. In 1930, just short of his seventeenth birthday, Trueblood talked about putting back numerous smaller fish. Several weeks later, he related some problems with barbed hooks and releasing fish, writing “I think from now on I will use barbless hooks altogether…” These early instances became more refined over the years, while Trueblood’s writing influenced anglers on a national level. During the 1960s and 1970s, the Rocky Mountain trout culture combined with these ethics to create a growing concern for wild trout and river conservation. Of course, more pragmatic concerns guided catch-and-release in the West. A century of mining poisoned numerous western rivers, as new concerns over human health and mercury, lead, and other heavy metal poisoning marked the age of ecology and motivated anglers to release more fish. For a variety of reasons, then, catch-and-release fishing became more popular on Rocky Mountain rivers. A late 1970s study on Montana’s Big Hole River illustrated these changes. Despite a ten-pound limit for trout, over 60 percent of anglers released all their fish and only less than 1 percent kept the entire limit. (Incidentally, Norman Maclean once complained that “The Big Hole used to be home, sweet home for every son-of-a-bitch from Butte…” ) These profound shifts within the growing popularity of fly fishing in the 1970s mirrored the environmental consciousness of the era and ushered in the shift to wild trout management.

25 May 17, 1930 and June 29, 1930 entries, Ted Trueblood notebook excerpts, Series VI, Box 21, MSS 89: Ted Trueblood Collection, Boise State University, Boise, Idaho.
By the 1960s and 1970s, the modern environmental movement coalesced, centering on health and the human environment, in part thanks to the science of ecology. The movement connected humans and nature, focusing on quality of life issues and standards of living. They renounced the artificialness of the modern world—or at least its resulting environmental degradation. With the publication of Rachel Carson’s *Silent Spring* (1962), environmental activists found a powerful and growing force.

Rachel Carson’s thoughtful criticisms of DDT and modern pesticide use in *Silent Spring* helped launch the modern environmental movement in the United States. Carson started the book dramatically by warning of a “spring without voices,” that is, sickness among humans and birds and nature in an imaginary town with all too real health and environmental maladies. She then catalogued the numerous consequences of DDT use, from birds and fish to humans. Carson’s narrative ebbed and flowed with lyrical descriptions of a pastoral nature alongside disturbing premonitions of the future. The results? A bestseller, the *Common Sense* pamphlet that sparked an American environmental revolution. *Silent Spring* had immeasurable influence, not only on postwar chemical use, but also on the environmental movement as a whole.

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Western trout and river conservationists joined a varied group of environmental activists responding to numerous postwar changes from suburbanization, nuclear testing, and toxics. Their work became mainstream by the first Earth Day on April 22, 1970; legislation and consensus marked the 1970s, the so-called “environmental decade” or the “age of ecology.” A series of improved endangered species acts in 1966, 1969, and 1972 sought to protect species in danger of extinction and became particularly important from western native fish. These environmental concerns prompted catch-and-release fishing and wild trout ethics.

During the age of ecology, anglers promoted—and sometimes disagreed—over the value of wild trout. Butte working-class conservationist George Grant fished the nearby Big Hole for over fifty years, cherishing the experience of pursuing wild trout: “The fascination or allure of this unusual river was not merely in the pursuit or killing of its wild trout, or later in the taking and releasing of them, but equally so in the appreciation of nature’s contribution to the pleasures of man’s existence…Few men have ever been so rich.”

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33 Numerous federal laws codified the growing environmental concerns of Americans. In late 1969, Congress passed the National Environmental Policy Act (NEPA), which addressed environmental quality at a national level, requiring federal agencies to consider the environment in their work through environmental impact statements. President Nixon also signed a variety of environmental initiatives, including the Clean Air Act (1970), Clean Water Act (1972), and the creation of the Environmental Protection Agency, which started operations in 1970. Gottlieb, 124-129. Legislation profoundly changed environmental politics, while the movement itself continued on a variety of levels. By the 1970s, environmentalism, broadly defined, became a sentiment shared by many throughout the world, from religious groups and United Nations programs to movements in various nations like India. See McNeill, 336-340. Environmental concern shaped local legislation as well. On a state level, Montanans took advantage of a constitutional convention in 1972 to include a “right to a clean and healthful environment” clause in the state’s constitution. For more information, see Harry W. Fritz, “The 1972 Montana Constitution in a Contemporary Context,” *Montana Law Review* 51, no. 2 (Summer 1990): 270-274 and C. Louise Cross, “The Battle for the Environmental Provisions in Montana’s 1972 Constitution,” *Montana Law Review* 51, no. 2 (Summer 1990): 449-457.

34 Hays, 112-113.

rainbow trout fishing of the midcentury Big Hole River. Many other anglers enjoyed both native and nonnative varieties of wild trout, as one conservationist observed: “There is a significant number of anglers who not only delight in ‘wild trout’ but also in that species, and if possible, that strain, which is indigenous to a particular body of water.” Finding relict populations of native trout revealed the era’s increasing concern for nativeness and naturalness, yet nonnative wild trout still overshadowed native fish in the 1970s. Many anglers revered wild trout and despised hatchery trout. Always concerned about the artificiality of fishing experiences, in 1976, environmentalist Gary LaFontaine described hatchery trout as “super-market rainbows.” David Quammen likewise has derided fish planting as “an Easter egg hunt for tourists with fishing rods.” Many of the same anglers who championed wild trout ethics formed new conservation groups like Trout Unlimited and the Federation of Fly Fishers in the 1960s, institutionalizing catch-and-release and wild trout ethics throughout the Rocky Mountains and the nation.

Wild trout management proved successful because of the ideals imparted by TU, FFF, and other sporting organizations that grew out of the modern environmental movement. Both organizations had a western focus and promoted sport fishing, conservation, and catch-and-release. They worked closely with management agencies and pressed for wild trout, a dramatic shift in policies compared to previous generations of conservationists who promoted fish culture. Ennis, Montana, fly fisherman Dick McGuire, for instance, complained in 1960 to the Montana Fish and Game Department about the declining fishing on the upper Madison River. McGuire blamed the stocking of catchable-sized rainbows, stating there was “only one reason for the poor

37 LaFontaine, 130.
fishing...the planting program.” His concern for wild trout and wild rivers prompted McGuire and others to later found the Southwestern Montana Fly Fishers, a club affiliated with the Federation of Fly Fishers. By the decade’s end, scientific studies proved McGuire right. Anglers’ advocacy lent itself well to an already vibrant Rocky Mountain trout culture, yet not all anglers wholly supported wild trout ethics.

Sporting culture has always remained contentious; some anglers saw little aesthetic difference between hatchery and wild trout. In The Sportsman’s Notebook (1964), outdoor writer H. G. Tapply noted a disdain for hatchery trout: “many fishermen still hold man-reared trout in contempt. Stocked fish are too easy to catch. They can’t fight. They taste like liver. They are but pale copies of the real thing.” Tapply, however, pragmatically defended hatchery fish, seeing no alternative solution: “Trout are trout. And since today it’s pretty much a choice of fishing for hatchery-produced trout or not fishing for trout at all, the tolerant fisherman will be grateful for what he has and not care whether the trout he catches was born in the rubble of the stream bottom or in an egg tray under electric lights.” Like Tapply, some anglers continued to demand hatchery stocking, although this viewpoint became less prevalent over time. Even if incomplete, the acceptance of catch-and-releasing fishing and wild trout among many fly fishers created some interesting consequences for fishing and fish like changing fly patterns and meeting the same individual fish on a regular basis.

Wild trout ethics partially transformed fly fishing starting in the 1970s. First, fly patterns changed to reflect that fish became more selective after being released again and again. Doug

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40 Quoted in Dick Vincent, “The Catchable Trout,” Montana Outdoors 3, no. 3 (May/June 1972): 25. In 1965, the Montana Fish and Game Department took over responsibility for state parks and, in 1979, became known as Montana Fish, Wildlife and Parks, although the latter sometimes appeared earlier in publications. Both are used in the text, depending on what was listed in the sources used.
43 Tapply, 45.
Swisher’s and Carl Richard’s book *Selective Trout* pioneered this new fishing philosophy. On the water, their no-hackle patterns looked remarkably real. Returning to that old fly fishing debate of imitators v. attractors, however, attractor patterns still proved effective. Fly fishers continued using older patterns and methods with frequent success while adding the new patterns to their fly boxes. And some anglers refused to even accept the premise behind selective trout, as Tom McGuane illustrated. “We like to think of the idea of selective trout,” he later wrote, “it serves our anthropocentricity to believe that we are in a duel of wits with a fish, a sporting proposition.” Wild trout also changed this sporting proposition. In attempts to keep fish alive when released, the fight became less important than the ability to quickly land and release the fish. Additionally, catch-and-release fishing has given anglers an added familiarity with individual fish, an unsettling intimacy according to fly fishing philosopher and historian Paul Schullery. Schullery observed that the continued release of fish has made wild trout fishing not-so-wild: “I’m not sure I’m interested in fishing for a fish I know I’ve caught three times before, named Orville, who resides just under that bush, and who demands a 5X tippet. That’s too tame a situation, whether the trout is wild or not.” The Orvilles of the trout world have reminded many anglers that wild trout can sometimes be boring too.

Despite the sometimes unintended consequences of catch-and-release and wild trout ethics, anglers continually pressured state agencies for more wild trout opportunities throughout the 1960s and 1970s. In response to this growing ethos, many state agencies offered more wild trout fishing opportunities.

**Wild Trout Management**

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45. For more information, see Schullery, *If Fish Could Scream*, 160-166.
Many fisheries managers scaled down their hatchery work by the 1970s, influenced by anglers’ criticisms of hatcheries as well as the growing influence of ecology and the modern environmental movement. During the age of ecology, Rocky Mountain states still concentrated mostly on game species and trout, but some states shifted more and more to wild trout management. A pioneering study on Madison River provided much of the impetus for Montana’s shift to wild trout management. On the Madison, biologists found that hatchery fish led to wild trout declines. As new angling ethos reject the artificiality of planted trout, scientific expertise lent credence to the declining use of hatcheries. Total acceptance of wild trout management, however, remained incomplete, creating an odd mix of practices that has continued to today.

Montana Fish, Wildlife and Parks led wild trout management during the 1960s and 1970s. In 1967, one agency official observed that many anglers believed wild trout to be “an essential part of a ‘quality’ fishing trip.” In response to angler demands as well as the prohibitive expenses of stocking catchable-sized trout, the agency set aside certain waters as wild trout streams. The official noted that good fishing existed in sections of streams, like the lower Madison River, that had not been planted in years, a sort of default wild trout management that justified current actions.47 Throughout this time period, the agency promoted the importance of water quality, water quantity, and healthy habitat. Wild trout management, then, came as a natural extension to these policies. The most important factor in Montana’s shift to wild trout management, however, was a pathbreaking study on the Madison River near Ennis.

From 1967 to 1971, Montana Fish, Wildlife and Parks biologist Dick Vincent conducted his now-infamous study on the Madison River that led to a wholesale shift to wild trout management on all Montana rivers starting in 1972. Now known as the “godfather” in some

FWP circles, Vincent initially started his study in an entirely different direction. Worried about wild trout populations in the Madison and its tributary O’Dell Creek due to Hebgen Reservoir flows, Vincent realized that in good water years, the fishing still suffered. He then shifted the study to look at the impacts of stocking catchable-sized rainbow trout on the Madison’s populations of wild rainbow and brown trout.\footnote{E. Richard Vincent, “Effect of Stocking Catchable Trout on Wild Trout Populations,” in Proceedings of the Wild Trout Management Symposium, 88. See also Vincent, “The Catchable Trout,” and Halverson, ch. 9, esp. 118-122.} Local anglers, including Dick McGuire’s Southwestern Montana Fly Fishers, supported the study.\footnote{Brooks, 134-136.} The study concluded that catchable-sized fish adversely affected wild trout populations, making hatchery stocking an expensive way to yield even worse fishing.

While earlier studies only showed the inefficiency and high costs of stocking catchables, Vincent’s study definitively demonstrated the environmental tolls of reliance on hatcheries.\footnote{See, for instance, Robert J. Domrose, Northwest Montana Fishery Study, Job No. 1, Inventory of Waters of the Project Area, July 1, 1966 to June 30, 1967, Job Completion Report, F-7-R-16 (Montana Fish and Game Department).} After ending stocking of catchable rainbows in 1969, the wild trout population in the popular Varney section exploded. In two years, the wild trout population grew by 180 percent.\footnote{Vincent, “Effect of Stocking,” 88-89.} By 1975, wild brown and rainbow trout populations in the Varney section had grown tremendously, as Vincent later reported: “By September, 1975, the number of two-year-old and older brown trout had increased 159% from the 1967-69 stocking years and the total pounds increased 103%. Wild rainbow trout have shown even more significant increases, as the number of two-year-old and older rainbows increased 1087% and the total pounds increased 828%.”\footnote{E. Richard Vincent, Southwestern Fisheries Inventory, Job No. 1-a, Inventory and Survey of the Waters of the Project Area, February 1, 1975 through January 31, 1976, Job Progress Report, F-9-R-24 (Montana Fish, Wildlife and Parks),12.} In short, Montana Fish, Wildlife and Parks quickly learned that no hatchery activity produced more and larger fish.

With Vincent’s Madison River study, the department had the definitive evidence needed to start
wild trout management. Starting in 1972 and complete by 1975, the agency ended hatchery stocking in all the state’s rivers. Wild trout proved wildly successful in Montana, creating better fishing opportunities and strengthening the state’s tourist economy. Other Rocky Mountain states incorporated some wild trout management, but not on a statewide scale, showing the entrenched use of hatcheries within fisheries management.

The shift to wholly wild trout management remained incomplete among western state agencies that continued to partially rely on hatcheries for fisheries management. Some criticisms of the wild trout idea rested on class. Two fisheries biologists attacked wild trout management at the first semi-annual Wild Trout Symposium in 1974, arguing that ending catchable-sized trout stocking entirely was an idea of “some elitist trout fishermen and a few fishery biologists.” These biologists saw a need for continued tailwater stocking, where natural reproduction in certain rivers was impossible. They also contended that wild trout management could not sustain the demand for good trout fishing. While the paper might not have gone over so well at a conference comprised of wild trout anglers, ecologists and biologists, fisheries managers, and conservationists, no state ever entirely abandoned their hatchery work. Other appraisals rested not on class, but on place, portraying wild trout ethics as increasingly popular, at least among locals. Sometimes, local anglers and agency employees aimed their critiques at tourists who demanded hatchery stocking, like the opposition to new hatchery construction at Jackson Hole that threatened Snake River cutthroat. The reproval of “dudes” (which also had a certain class element) implied that tourists could not fish very well and had to rely on easy-to-catch hatchery fish. Even with criticisms and partial acceptance, wild trout still represented an important shift in management.

54 Wiley and Mullan, 28.
Wild trout defenders believed that fisheries management should center on habitat protection. At that first Wild Trout Symposium, for instance, one zoology professor spoke about the restoration of streams or protection of those with already healthy habitats. In doing so, he exemplified the importance of habitat and ecology within wild trout management:

…many anglers and biologists feel that fish stocked from hatcheries, no matter how laudable as a recreational supplement if properly handled, cannot fully substitute for wild trout. Owing to appearance, flavor and behavior, hatchery fish may be unsatisfactory. Moreover, any stocked hatchery fish may represent an injection of artificiality into the natural streamscape which is out of keeping with the spirit of angling practiced by some.55

The growing significance of wild trout in ethics and management made the protection of habitat all that more important during the age of ecology.

**Wild Rivers**

Wild trout ethics and management translated into more concerns for wild rivers and habitat protection during the 1960s and 1970s. Anglers and fish managers increasingly privileged healthy ecosystems over hatchery fish. They rallied against habitat degradation in its many postwar forms, from industrial and urban pollution to highway and dam building. The grassroots political and environmental involvement showcased the regional importance of nonnative trout fishing and its democratic nature. Much of the conservationist focus on habitat started in the 1950s with concerns over increasing water pollution.

In the postwar era, western anglers frequently discovered fish kills from water pollution due to a variety industrial, mining, and urban sources. Throughout the 1950s, Montana anglers came across various fish kills, including ones along Rattlesnake Creek and the Clark Fork River

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near Missoula.\textsuperscript{56} Instances such as these all too frequently occurred in the time period. In 1961 alone, the US Department of Health, Education, and Welfare reported fifteen million fish killed across the nation from a variety of industrial, mining, agriculture, and residential sources.\textsuperscript{57} During the age of ecology, fish kills indicated poor water quality and threats to human health, ensuring diverse political constituencies like the League of Women Voters took up the cause of water pollution. Before the Clean Water Act of 1972, states institutionalized these growing water pollution concerns by charging state agencies—or creating entirely new sectors of government—to oversee and regulate water pollution. Utah, for example, created a State Water Pollution Control Board in 1953, a move welcomed by the Utah fish and game commission.\textsuperscript{58} Anglers’ and fish managers’ fights against pollution reflected the swelling consideration for habitat protection in an era of widespread environmental problems.

Environmental degradation plagued inland waters in the postwar period. In \textit{Wildlife in America} (1959), writer and activist Peter Matthiessen chronicled the richness of the nation’s fish, birds, and wildlife as well as their declining populations. Matthiessen endorsed both wild trout and wild rivers. He admonished the wastefulness of the hatchery system, in what became a critique of Cold War consumerism: “A few upland game birds excepted, the fishes include the only game species which lend themselves readily to the indignities of mass culture, and incredible sums have been poured away in the form of ill-fated fingerlings and fry.”\textsuperscript{59}

Documenting native freshwater fish declines, he blamed humans for habitat damage: “pollution,

\textsuperscript{56} Robert C. Averett, “Summary of Fish-Kills Occurring in Montana During Recent Years,” Montana Fish and Game Department, May 9, 1960, Box 10, Folder Pollution-Water, 1958-1970 [no folder number], Collection #08958: Wyoming Outdoor Council Records, AHC.
siltation, dredging, drainage, damming, irrigation, stream-straightening, and other practices, have been extremely harmful to our native species.” Matthiessen voiced the frequent concerns of anglers and fish managers who became increasingly bothered by a variety of habitat changes in the postwar world.

Highway building destroyed all types of western trout habitat in the 1950s and 1960s, triggering protests and political action from anglers and managers. The passage of the Interstate Highway Defense Act (1956) remade the American landscape, contributing to suburban sprawl, increased oil use and, among other environmental problems, damaged trout habitat. In Montana and other Rocky Mountain states, highway building and resulting trout declines raised the ire of anglers and fish managers. In the early 1960s, Utah officials lamented the losses on numerous rivers, including Logan, Sevier, and Weber rivers. Other western rivers experienced the same loss of habitat during highway building.

During the early 1960s, members of the Montana Junior Chamber of Commerce (Jaycees), a civic organization with separate men’s and women’s branches, began to notice the deterioration of trout fishing around the state due to highway building and launched a state crusade to fix the problem. At the 1962 state convention, the Jaycees adopted a legislative bill to regulate river damage from road construction. Harry B. Mitchell led the campaign while continuing to run the family dairy in Great Falls and serving as a captain in the Montana Air National Guard. During the drive, Mitchell and other Jaycees relied on the value of Montana

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60 Matthiessen, 210-211.
63 Jack Sleight to E. G. Leipheimer, Jr., 14 January 1963, Box 1, Folder 1, Collection 2441: Harry B. Mitchell Papers, Merrill G. Burlingame Special Collections, Montana State University, Bozeman [hereafter MSU].
64 North Central Montana Wildlife Federation Newsletter, April 1963, Box 1, Folder 5, Harry B. Mitchell Papers, MSU.
trout streams. “The crux of the problem is,” Mitchell wrote in early 1963, “our trout streams are expendable, have no legal protection, and their economic and recreational value is not considered in any stream alteration project.”

Due to their political work, the Montana legislature passed Substitute Senate Bill 45 in March 1963 to address trout habitat protection during highway building, and enacted a more thorough version in the 1965 Streambed Preservation Act. Many western state fish and game agencies and national politicians also supported improved legislation to regulate the environmental problems created by road construction.

Wild trout represented a guiding factor in new concerns over environmental protection. Longtime Montana Senator Lee Metcalf promoted the economic value of good hunting and fishing. In his first out of three terms before his death, the Democrat observed tourism had become the third largest industry in the state and used its economic value to promote better conservation measures on a national level, including wilderness and wetlands protection, public access to rivers, and water pollution. Metcalf extended his conservation work to concerns over highway building in the pre-NEPA days, introducing a bill that would have required highway planners to cooperate with the Department of the Interior. Rocky Mountain state fish and game agencies additionally advanced environmental concerns.

In the 1960s and 1970s, state agencies frequently used their publications to promote habitat protection. During the Jaycees’ political work over streambed protection, the Montana Fish and Game Department published an article to support the movement. In “Montana Trout Streams: Will we have tomorrow what we have today?” (1962), the author regretted the loss of trout fishing due to stream rechanneling near places like Philipsburg and Red Lodge. He then

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65 Harry Mitchell to William Browning, 1 February 1963, Box 1, Folder 1, Harry B. Mitchell Papers, MSU.
67 Radio speech transcript, “Trout vs. roads,” 10 February 1962, Box 660, Folder 3, Lee Metcalf Papers, MHS.
noted that road and railroad building caused one half of these damages and that no legislation existed to control the problem. The sport and economic values of trout proved central to the argument: “To help decide, there are many things to consider. One is that almost half of the eligible residents buy a fishing license. Two-third of them fish for trout in streams. Anglers also drop a sizable chunk of money into the state’s economy.”

Other states printed similar tracts. In one Idaho Fish and Game pamphlet, the department provided disturbing numbers of fish loss and habitat alterations, noting that over eleven hundred miles on forty-five of the state’s rivers had been altered in the 1960s. Fish kills followed. The author stated that during the last nine years, water pollution and habitat degradation killed over 1.5 million fish in Idaho, lamenting that in many streams “only trash fish can survive.”

In combating environmental devastation, fisheries managers and anglers often worked together, as in the case of opposition to dam building.

Despite the fact that dams could remake rivers into phenomenal tailwater fisheries, they still represented unwanted environmental development for many anglers who contributed to the growing environmental movement. Dam building became a rallying point for new environmental consciousness in the postwar era. In the Rocky Mountains, anglers played an important role in dam opposition, especially in some of the lesser known battles. One example should suffice. In the 1960s, the proposed Reichle Dam on Montana’s Big Hole River worried fish managers and anglers alike. The Montana Fish and Game Department opposed the project, believing that the new types of recreation created by reservoirs such as waterskiing could hardly replace quality

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68 Montana Fish and Game Department, “Montana Trout Streams: Will we have tomorrow what we have today?” Box 1, Folder 3, Harry B. Mitchell Papers, MSU.
69 Idaho Fish and Game Department, Idaho and the…Vanishing Stream (Boise: Idaho Fish and Game Department, [1970?]), no pagination.
70 For the importance of dam opposition in the growing wilderness movement of the twentieth century, see Mark W. T. Harvey, A Symbol of Wilderness: Echo Park and the American Conservation Movement (Albuquerque: University of New Mexico Press, 1994).
trout fishing and the ten miles of the blue-ribbon Big Hole that would be destroyed. In fight against Reichle Dam, Butte fly fisherman and working-class conservationist George Grant spearheaded a successful coalition of sport fishers and ranchers. The large Western Montana Fish and Game Association joined the campaign, writing “We oppose the damming of a Blue Ribbon trout stream, such as the Big Hole River, and the diversion of water from it to another drainage.” Concerns of trout fishing and Big Hole’s wild qualities drove many anglers and fish managers to reject proposals for new dams. Like the Reichle Dam opposition, sometimes they won.

During the wild trout era, wild rivers and healthy habitats became important in the partial abandonment of the western hatchery system. Anglers and fish managers joined the growing environmental movement to speak out against the vast postwar changes to rivers and the natural world. They criticized water pollution, stream alterations due to road construction, and dam building—and the resulting trout declines caused by all of this. The wild trout era solidified a broad constituency of western anglers that advocated for environmental protection, ironically by naturalizing nonnative fish within the region’s trout culture and illustrating the importance of locals in conservation work.

**Conclusion**

When writer David Quammen moved to Montana in the 1970s for the trout, he explained to friends that trout represented a synecdoche for lifestyle: “Trout were the indicator species for a

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71 Statement Made Before U.S. Senate Select Committee on National Water Resources, Billings, Montana, 9 October 1959, Box 2, Folder 40, RS 261: Montana Fisheries Division Records, MHS and Frank H. Dunkle to Cecil Gubser, 10 March 1965, Series IV, Box 5, Folder 3, MSS 213: Western Montana Fish and Game Association Records, Archives and Special Collections, Maureen and Mike Mansfield Library, University of Montana-Missoula [hereafter UMM]. The Montana Fish and Game Department developed a trout fishery rating system in the postwar era, which considered the best trout streams “blue-ribbon.” Other agencies later adopted this system.

72 Pat Munday, ‘‘A millionaire couldn’t buy a piece of water as good’: George Grant and the Conservation of the Big Hole River Watershed,” *Montana: The Magazine of Western History* 52, no. 2 (Summer 2002): 25-27.

73 Lester R. Rusoff to Chairman, Reichle Dam Hearing, Whitehall, Montana, 9 November 1965, Series IV, Box 5, Folder 3, MSS 213: Western Montana Fish and Game Association Records, UMM.
place and a life I was seeking." Trout also serve as a synecdoche for changes to the Rocky Mountain region in the twentieth century. By the 1970s, trout symbolized more than just popular nonnative game fish; they indicated clean waters, healthy habitats, outdoor lifestyles, and a quality of life cherished by many residents and visitors in the New Rocky Mountains. These developments dated back to nineteenth-century social, economic, and environmental change.

This dissertation has explored how western anglers, fish culturalists, tourists, regional boosters, and local outfitters and businesses created place over time, correlating the Rocky Mountains to nonnative trout fishing. Like the dynamic nature of rivers themselves, Rocky Mountain waters changed starting in the mid-nineteenth century with early trout introductions and fish conservation laws. Attention to different political and geographic scales helps to track these environmental and social transformations of the nineteenth and early twentieth centuries. The rainbow, brown, and brook trout fisheries and the rise of state conservation in the Rockies illustrated that local and regional experiences—in addition to national and transnational ones—shaped national and transnational ideas, fish, and people.

During the nineteenth century, white leisure-class anglers in Europe and the United States contributed to the transatlantic conservation movement by limiting their own catches and promoting hatcheries to repopulate depleted waters. They strove to distinguish their fish catches from those of market and subsistence fishers who came from lower classes, immigrant communities, and other races. To do so, they used constructions of race, gender, and national identity as well as their new consumer gear produced by the era’s world trade and industrialization in attempts to legitimize angling as a leisure-class sport. Yet, as a simple and proven fishing technique, angling boasted a long history and a diverse group of practitioners that could not be controlled by these sporting ideals. While this sporting culture influenced

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conservation, local people and environmental realities also transformed it at a local level. In the Rocky Mountain West, therefore, fish conservation took on a democratic character than recent interpretations of the rise of government-led conservation have allowed. A variety of westerners helped state and federal fish culturalists introduce trout to the region, while the regulations themselves partially rested on community support and ideals. Fish conservation showed not a class-based program but rather a local and regional manifestation of both sport and community conservation ethics. Additionally, many locals of all classes supported fish culture work.

By the early twentieth century, the western hatchery system churned out millions of rainbow, brown, and brook trout, while westerners and tourists alike promoted the region’s nonnative trout fisheries. In this evolution of place, the economic and cultural importance of swimming creatures melded together the material realities and social constructions of the Rocky Mountain trout culture. The emergence of regional fly fishing traditions marked the significance of the outdoor recreation industry in the mid-twentieth century. This democratic pastime and growing economy, however, rested on environmental change and massive amounts of trout stocking. These conceptions of place and region and their accompanying hatchery activities caused devastation of western native fish, both trout and trash varieties.

The codification and amplification of Euroamerican prejudices against coarse fish mirrored the growth of the Rocky Mountain trout culture and the continued assault on native ecosystems and creatures. In the glorification of the region’s charismatic and beautiful trout, anglers and fish managers overlooked—or eradicated—the nonmagnetic and not-so-attractive coarse fish species. The trout-based conception of place sometimes had devastating impacts. Additionally, it remained only one way of knowing the West.
The region’s outdoor recreation and tourism economy often ran up against the region’s extractive economies like mining, timber, and agriculture. In the arid West, anglers and fish managers were forced to reconcile with irrigation use and dewatering in an utterly transformed landscape. Following World War II, the construction of irrigation and hydroelectricity dams sometimes unintentionally manufactured amazing tailwater trout fisheries. The Disneylands with trout offered fishing in a crowded, built environment. Tailwaters also caused major conflicts, like the fight over Montana’s Bighorn River. Simultaneously, many anglers started to reject the artificial aspects of western trout fishing like tailwaters and put-and-take stocking.

During the wild trout era of the 1960s and 1970s, these environmental changes became naturalized as local anglers and fish managers started to tear down the western hatchery system and focus on preserving wild trout and wild rivers. Wild trout likewise obscured a century of environmental change as well as the obsession with nonnative trout put forth by Rocky Mountain anglers, tourists, fish managers, businesses and boosters. This legacy has extended to the present. In reality, Rocky Mountain fisheries continue to be heavily manipulated. Despite substantial scientific and ethical criticisms of hatcheries starting in the mid-twentieth century, it remains a part of fisheries management in many places. Montana has maintained wild trout management on its rivers, but other Rocky Mountain states still rely on hatcheries and trout stocking to varying extents. Sometimes the unnatural, manipulative aspects of the hatchery system continued. Idaho officials recently had to train hatchery rainbow trout used to eating food pellets how to eat worms.75 Hatchery and wild trout management exist simultaneously in this present trout culture that also now includes more concern for native fish.

As much as wild trout perpetuated a deep-seated Rocky Mountain trout culture, wild trout principles proved central to the growing importance of native fish ethics since the 1970s. Native

75 Halverson, 185-186.
fish management and habitat protection sprouted in the midst of the wild trout era, transitioning some anglers and managers to contemporary native fish preservation.\textsuperscript{76} Opposition to hatcheries has characterized these new values. Writer David James Duncan has observed hatcheries and native fish are irreconcilable for many western fly fishers: “For the ‘Average American’—those bland creatures Gallup and Harris always manage to locate before conducting their opinion polls—the opposite of \textit{native} is probably a word such as \textit{foreigner}, \textit{alien}, or \textit{immigrant}. If Gallup interviewed a bunch of Western fly-fishing freaks, though, they’d learn to their amazement that the opposite of the word \textit{native} is a hatchery trout!”\textsuperscript{77} While some contemporary fly fishers and anglers have upheld the values of native fish, it remains unknown whether other western anglers, tourists, state fish agencies, and those who benefit from the region’s outdoor recreation and tourism economy will embrace native fish management and ethics within the Rocky Mountain’s persistent trout culture.

\textsuperscript{76} Schullery, “Closing Summary,” 21.
EPILOGUE

“A map of the world without Utopia is not worth glancing at.”
-Oscar Wilde

“…if the trout are lost, smash the state.”
-Tom McGuane

The environmental history of the Rocky Mountain trout culture and its vast and unintended consequences reminds me of the time I finally discovered my late grandpa’s favorite fishing place. A few years ago while visiting family in Bozeman, some of my cousins and an uncle offered to take my twin sister and me to the spot. We jumped at the opportunity and hopped in my car. Would it be a hidden place on the Gallatin River or some out of the way mountain lake? My imagination went wild trying to imagine the type of secret fishing Eden that my grandpa frequented. My grandparents, wheat farmers on Montana’s Hi-Line, bought a house in Bozeman near the university during the 1960s, presumably so the eight kids (including my mom) could attend college there and they could retire somewhere with milder winters, mountain views, and good fishing.

We had barely left town when they told me to pull over on a busy one-lane highway. A trickle of an irrigation ditch ran beneath it, so small I probably could have jumped across it. Although overgrown with foliage, it still had the trappings of its human creation with headgates and lateral lines. Above it loomed a billboard. Perhaps this was just a little family mischief on our way to the real location, but on my uncle’s first cast up beneath the bridge, he pulled out a rainbow trout. And, upon a closer look, I noticed some nice trout swimming around in this tiny canal. After a few laughs, we spent the rest of the afternoon at the American Legion bar, which

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apparently also was Grandpa’s style—and one of the benefits of having a favorite fishing spot so close to town.

Rarely does the history of environmental change, however, become this obvious to the many anglers conditioned by mythology and their own ostensibly natural experiences catching wild trout from flowing rivers. As historian Paul Schullery has put it, most fly fishers “wouldn’t know history if it came up and bit us on our breathables, but we love to think it’s on our side.”

The history of Rocky Mountain trout started with nineteenth-century industrialization, as anglers and fish culturalists relied on railroads and hatcheries to introduce nonnative rainbow, brown, and brook trout species to the region. Over a century of environmental change birthed new trout fisheries while destroying native fish and ecosystems. And not everyone benefited from this new cultural and economic importance of nonnative trout, as the fishing industry produced new avenues of power and control. In the 1970s, the “wild” trout era naturalized nonnative trout fishing while obscuring the history of the Rocky Mountain trout culture.

Instead of addressing this history, in the continued fights to protect western rivers and trout, conservationists perpetuate a fly fishing mythology. Many fly fishers might know every eddy, rock, and riffle in their favorite stretch of river, but have overlooked the historical transformations of nature. They invoke Norman Maclean, not Lewis B. France. They celebrate mythical fish and rivers, not the polluted stream running through town (or that the film adaptation for *A River Runs through It* had to be filmed on the Gallatin and other area rivers because of pollution and development on the Big Blackfoot River). They often write about destinations, fish sizes, fishing contests, and other self-aggrandized blather, not costs and

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consequences of the sport itself. In some ways, this does little to inform their concern for many of the environmental issues and problems of Rocky Mountain fisheries.

Take, for instance, the recent controversies surrounding native fish restoration in the American West. Rainbow, brown, and brook trout have overrun the vast majority of Rocky Mountain waters. Nonnative trout are permanent, barring pollution, habitat degradation, and things like whirling disease. Dozens of recent native trout restoration projects, however, provide notable exceptions. These efforts all involve the heavy use of fish toxicants to remove nonnative trout—and anything else that swims in the river—then the planting of native cutthroat trout, in most cases, taken from brood stocks maintained by state agencies.

The use of fish toxicants to save native species has become increasingly popular within the last fifteen years. In one case, not too far from Grandpa’s fishing hole, Montana Fish, Wildlife and Parks, in conjunction with Ted Turner Enterprises, sought to bring back westslope cutthroat in Cherry Creek, a tributary to the world-famous Madison River that begins in the Lee Metcalf Wilderness Area and runs through one of Turner’s many ranches. They spent over five years applying toxicants to eradicate the nonnative fish present. The project drew extensive public criticism since its beginning due to the use of Antimycin A, then rotenone as well as the perceived threats to the Madison fishery (and of course not helped by the project’s continued failures). Comparatively, a similar venture on the Comanche Creek in northeastern New Mexico aimed at bringing back Rio Grande cutthroat trout garnered widespread support from a grassroots group of fly fishers, ranchers, and others. These attempts to restore native fish point

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5 For more on the whirling disease epidemic, see Anders Halverson, An Entirely Synthetic Fish: How Rainbow Trout Beguiled America and Overran the World (New Haven: Yale University Press, 2010), ch. 10.
to a present need for more anglers to consider native fish values in the Rocky Mountains that became known for nonnative trout over time. The restoration projects themselves ironically illustrate a continued regional trout culture and collective amnesia.

Despite the recent shift to more scientific and ecological interest in native fish, the restoration projects themselves have all sought to restore native trout and not native suckers, chubs, or other endangered coarse fish. The toxicants themselves do not distinguish between nonnative trout and all of the native coarse fish and minnows present in these rivers. The mountain whitefish and other species in Cherry Creek were also native (did Montana FWP and Turner even bother to conduct DNA studies to see if these species represented genetic uniqueness?). Is the goal nativeness or biodiversity? Fisheries managers have extremely hard jobs in which they are constantly faced with tough decisions along with the small budgets and incessant demands of any state agency. Yet, the history of trash fish reveals that fish managers are often quick to the draw with fish toxicant use, viewing it as a panacea for native fish ills. Their quests to preserve native fish, however, are valiant, even if the means need to be reexamined. As anglers have ignored native concerns in their Rocky Mountains with the big trout, their continued romanticization of western fly fishing has been beneficial for other environmental issues.

Despite the drawbacks of romanticism, the Rocky Mountain troutopia, with its nostalgic and simplified past, has also had real and tangible advantages for river and fish protection. In a recent New York Times article, outdoor writer Rick Bass attributed the success of Montana’s 1998 voter initiative banning cyanide heap-leach gold mining to A River Runs through It: “We never would have won if it hadn’t been for Norman Maclean’s novel and Robert Redford’s

While fly-fishing mythology has been recently evoked to campaign for healthy watersheds, it remains myopic in its focus well-known rivers and their nonnative trout.

When Norman Maclean ended *A River* with “the hope that a fish will rise,” he taught readers that trout waters created hope anew. In a similar fashion, this dissertation concludes with optimism that western anglers, fisheries managers, conservationists, guides, outfitters, local businesses, regional boosters, and tourists will address the history and legacies of their Rocky Mountain trout culture. The willingness to grapple with the complexity of the past and look beyond the romanticized Rocky Mountain trout culture essentially comes down to local anglers whose favorite fishing spots may be in unlikely and seemingly unnatural locations—like an irrigation ditch under a billboard adjacent to a busy highway—that still hold rising trout.

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**THESES AND DISSERTATIONS**


