

A TURBULENT UPRIVER FLOW: STEAMBOAT NARRATIVES
OF NATURE, TECHNOLOGY, AND HUMANS
IN MONTANA TERRITORY

by

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ABSTRACT

For a 25 year period in the second half of the 19th century, steamboat travel was a critically important transportation technology which influenced the material, social, and cultural existence of people and landscapes in the Montana region. Building on methodological approaches developed in New Western History and Environmental History, this study argues that steamboats in Montana played a significant role in shaping cultural, demographic, and environmental changes in the area. Steamboats and their crews shaped the dynamic exchange of cultures, materials, and energy between people, landscapes, and technologies. This project stresses that the changes in human-environment relationships in the region influenced people in different ways depending on their race, class, gender, and ethnicity. This thesis argues that steamboats and their crews tapped-into and altered existing systems of material and energy exchange, reshaping energy regimes and augmenting environmental realities in the region. At the same time, steamboats influenced human actions and perceptions of the world around them.

The layout of this project begins with an introduction chapter articulating methodological approaches and frameworks used in this analysis. The second chapter provides background on the changing natural and human geographies of the region, while the third chapter provides a history of steamboat technology as well as an overview of the labor, materials, and auxiliary technologies required to operate steamboats. Chapters four through seven present four chronologically organized case-studies and these narratives are used as lenses through which the broader implications of steamboat transportation in the region are examined. The final chapter briefly examines the steamboat *Montana* and the decline of steamboat travel in the early 1880s before offering a summary and conclusion of findings.

CHAPTER ONE

INTRODUCTION

1859 – Steamboat *Chippewa* at Fort Brulé

On the first day heading up the Missouri River from Fort Union, at the mouth of the Yellowstone River, an officer on the steamboat *Chippewa* got his foot stuck in the whirling machinery of an auxiliary steam-pump. It was a bloody affair that cost him part of his big-toe. At the time of the accident he had been busily conducting an orchestra-of-labor, shouting orders at the ninety-five deckhands under his command,. A few crew members were occupied testing the depth of the river from a small row-boat, while others were working to pull two support barges upstream by hand from shore. These un-motorized barges had been lashed to either side of the steamer, but a narrow section in the river proved too tight to admit all three boats together.¹ As the *Chippewa* steamed through the pinch-point, the loud moans and cries from the injured mate were a stark reminder of the dangers faced at the intersection of body, machine, and the natural world.

Two weeks later, at 3pm on the afternoon of July 17, 1859, the steamboat *Chippewa* pulled over to the shore of the Missouri River at Old Fort McKenzie. The fort

¹ Weber, Charles, H. "Journal of a Trip to Fort Benton and Back on Board the 'Spread Eagle,' May 28 to August 18, 1859," 10-11. Photocopy of original. Miscellaneous Manuscripts Collection A-15-34. *Library of Congress Manuscripts Division*, Washington D.C. [Cited hereafter as: Weber, "Trip to Fort Benton."]

had been put to the torch in 1846, earning it the nickname Fort Brulé (the Burnt Fort). By 1859 only its stone chimneys remained and there was no usable firewood to be scavenged from the structure.² The *Chippewa* and its crew had labored ceaselessly through the rapids and shallows of Montana's Missouri River and the nominal goal of the expedition was close at hand. Fort Benton was only a further fourteen miles upstream by river, just ten miles by land, but the *Chippewa* had burned all of the available firewood on the landscape and the level of the Missouri River was falling quickly.³ The expedition would proceed no further for the season. In the seven weeks since they had left St. Louis, the crew of the *Chippewa* had covered 2,273 river miles, and set the record for the furthest steamboat journey from the ocean.⁴

If any boat on the Missouri River stood a chance of making the remaining miles to Fort Benton, it was the steamboat *Chippewa*. Owned by the American Fur Company (AFC) and piloted by the experienced John La Barge, the *Chippewa* was an agile steamer specially built to negotiate the swift, shallow currents of mountain rivers. Over the previous weeks, as the *Chippewa* had wound its way through the convoluted river channel above the mouth of the Yellowstone River, a combination of environmental, technological, and cultural challenges had pushed the vessel and its crew to their limits.

² Weber, "Trip to Fort Benton," 15-16.

³ Weber, "Trip to Fort Benton," 15-16.

⁴ Lass, William E. *A History of Steamboating on the Upper Missouri River*. Lincoln: University of Nebraska Press, 1962, 1-2.

But Fort Benton would have to wait another year to see a steamboat dock directly at its gate.

The crew unloaded the *Chippewa*'s cargo onto the shore of the river; the goods would be transported the rest of the way to Fort Benton by wagon. The 160 of cargo contained fur trading materials and supplies for the AFC, food and manufactured goods to fulfill treaty obligations to the Blackfeet tribe, and military supplies for the US Army's ambitious road-building project to Washington Territory known as the Mullan Road. The next day the *Chippewa* and its crew started back downstream at 1:30pm in the afternoon with barely enough firewood to run their engines for an hour.⁵

Boats and Water Travel

A boat traveling across the surface of water often triggers human feelings of independence and freedom from earthly bonds. Boats are perceived as insular and disconnected from the mainland. They ride the tides and currents of the liquid realm and leave only ripples to remind the world of their passage. But boats, like any other man-made object, are products of the landscape where they were built and the regions with which they interact. Boats are connected to their origins, destinations, and ports-of-call, along with the landscapes attached to these places. They transport materials, peoples, cultures, and ideas, influencing the human and natural history of areas along their shores.

⁵Weber, "Trip to Fort Benton," 16.

Far from being adrift and independent of worldly connections, boats are intimately linked to a variety of material and cultural landscapes, both influencing and being-influenced-by those landscapes. From the smallest canoe to the largest oil-tanker, boats cannot escape the reality of their physical construction or their various material and cultural influences.

The 1859 journey of the *Chippewa* inaugurated the steamboat era in Montana by showing that steamboat travel in the region was physically possible and financially profitable. Over the next thirty years steamboats operating on the Far Upper Missouri River played a pivotal role in the history of the Northern Rocky Mountains. These influences stretched from the waning days of the Rocky Mountain Fur Trade, in the late 1850s, to the arrival of the railroads in the 1880s and the creation of the state of Montana in 1889. Throughout this thirty year period, steamboats functioned as an invaluable logistical tool in the movement of people, ideas, and materials to and from the landscape that came to be called Montana.

The use of steamboat transportation on the Far Upper Missouri River was closely connected with various human, environmental and technological factors that existed in the Northern Rocky Mountains, the broader North American continent, and the world at large. Steamboats interacted with these elements in dynamic and changing ways. While the human, environmental, and technological elements can be examined separately, to truly understand the impact of these different forces it is important to study the interplay between them and how they related to one another.

Purpose

This study argues that steamboats in Montana played a significant role in shaping demographic and environmental changes in the area through the dynamic exchange of cultures, materials, and energy between people, landscapes, and technologies. It explores the varied and nuanced ways that the use of steamboat technology in the basin of the Upper Missouri River influenced humans and environments in the region. This analysis contextualizes and deepens the story of human history in the region, informing a realistic portrayal of lived experiences in Montana Territory as the region moved towards statehood and the start of the 20th century. The changing connections between humans, environments, and steamboat technology are used to analyze how these three factors influenced peoples' interactions with each other and with their shared landscape.

This study posits that the developing relationships between human, environmental, and technological forces changed the way that individuals and groups of people associated with their landscape and the ways that they envisioned possibilities and dangers in their surroundings. Long before the arrival of steamboats in Montana, the Upper Missouri River Basin was a dynamic landscape where human and non-human actors engaged in complex systems of material and energy exchange. This thesis project argues that steamboats and their crews tapped-into and altered these exchange systems, reshaping energy regimes and augmenting environmental realities on the ground. At the same time, steamboats influenced human actions and perceptions of the world around them. This project stresses that the changes in human-environment relationships in the

region influenced people in different ways depending on their race, class, gender, and ethnicity.

This study interprets the use of steamboats in Montana as the creation a safe-space for people of Euro-American descent, a physical place where there was the perception of security and distance from the dangers of the northern plains. This perceived safe-space helped to spur and increase the mass movement of Euro-American materials, peoples, and cultures into the region. It was particularly important in facilitating the movement of the 19th century women's sphere into Montana, changing the regional Euro-American *modus operandi* from an imperialist orientation to more of a settler-colonialist dynamic.

For Native Americans, the impacts of steamboat travel in Montana were extensive, influencing Indigenous individuals and societies in ways both subtle and overt. Broadly speaking, the use of steamboat technology on the Yellowstone and Far Upper Missouri Rivers changed navigable riparian environments from places of Indigenous security into places of uncertainty. The river valleys mutated from a source of wintertime shelter and ecological oases, into a turbulent upstream flow of Euro-American materials and cultures. These included trade and treaty goods, foodstuffs to replace traditional food sources, US military might, and Euro-American settlers of all backgrounds. The impact of these material and cultural movements were distinct for different tribes and they changed over time. One goal of this thesis project is to disentangle the way that steamboat influence in Montana varied temporarily and geographically, from tribe to

tribe and region to region, striving to understand how these different experiences influenced tribal realities during and after the Montana territorial period.

Historical Methodology

In endeavoring to explore the substance and importance of steamboat travel in the Montana landscape between 1859 and 1889, this project builds on theoretical frameworks put forward by New Western Historians and the field of Environment History. These frameworks incorporate interdisciplinary perspectives and integrate a mixture of historical sources, human psychology, hard sciences, and the humanities to foster a broad and through understanding of a subject. The following chapters utilize these theoretical approaches to explore the relationship between human beings, the natural world, and technology. This study emphasizes the exchanges of energy, materials, and cultures occurring in Montana between people and their surrounding environments during a critical 30 year period and examines how steamboats were intimately intertwined with these exchanges.

Social History

On the surface, this project examines the lived experiences of individuals in Montana and the Upper Missouri River borderland using first-person accounts and primary sources. The stories and journeys of steamboats in Montana reveal real people of the American West, not two dimensional figures passively letting the waves of history wash over them. This study focuses on how the lives of these individuals, and the landscapes they inhabited, were influenced by steamboat technology and travel in the

region. In the process, this project strives to fracture stereotypical binaries of the American West (white vs. Indian, human vs. nature). Instead it presents the Montana landscape as the multicultural and multiethnic place that it was, where different groups of people benefitted from natural elements as much as they contended against them.

Throughout the process of re-imagining the Montana borderlands during this period, the theoretical frameworks of historians Patricia Nelson Limerick and Richard White were an essential starting point.

Limerick and White developed their methodological approaches and analytical perspectives, in part, as a reaction Fredrick Jackson Turner's interpretation of the western American history. Through the lens of Turner's Frontier Thesis, which has been heavily criticized as simplistic, racist, and sexist, the Missouri River and the Montana settlements of the 1860s and 1870s were part of the American Frontier. They were places on "the outer edge of the wave [of American expansionism]-- the meeting point between savagery and civilization."⁶ From Turner's perspective, it was along these frontiers of settlement that the American character was being continually forged and re-forged. The frontier was "the line of most rapid and effective Americanization," a place that "strips off the garments of civilization and arrays [the colonist] in the hunting shirt and the moccasin" to rebuild him in a uniquely American way.⁷

⁶ Turner, Frederick Jackson. *The Significance of the Frontier in American History*. Madison: State Historical Society of Wisconsin, 1894.

⁷ Turner, Frederick Jackson. *The Significance of the Frontier in American History*.

Historian Patricia Nelson Limerick countered Turner's perspective in her 1988 publication, *The Legacy of Conquest*, in which she posited that instead of looking at the frontier as a receding line on the map, readers should "think of the West as a place rather than a process; look at it as a meeting point of many ethnic and racial groups, all tied together by the theme of conquest."⁸ The landscape of Montana in the second half of the 19th century was just such a place. It was an area possessing a long *durée* history where natural and human forces had interacted for millennia. It was a real place of physical substance, not simply a passive stage for the acting out of human dramas, as portrayed by Turner's Frontier Thesis. Instead of Turner's two-dimensional image of newly arrived 'colonists' being converted to Americanness by the struggles of the frontier, the reality on the ground (and on the river) was an intercultural space in which give-and-take relationships developed and evolved between the landscape and the groups of people who used that landscape. Whether these interactions were violent or peaceable, they were always complex and seldom as simple as man-versus-nature or white-versus-Indian.

Richard White's 1991 publication, *The Middle Ground: Indians, Empires, and Republics in the Great Lakes Region*, provided another important framework for examining the lived experiences of people in the American West. In *The Middle Ground*, White moved beyond simple dichotomies of Indian and white, civilized and savage, and

⁸ Limerick, Patricia Nelson. *The Legacy of Conquest: The Unbroken Past of the American West*. 1st ed. New York: Norton, 1987, 26.

sought out a “more complex and less linear narrative.” To White, the middle ground was “the place in between: in between cultures, peoples, and in between empires and the nonstate world of villages [...] It is the area between the historical foreground of European invasion and occupation and the background of Indian defeat and retreat.”⁹ The steamboat borderlands along Montana’s Missouri River and the greater Montana hinterland were places akin to the middle ground as described by White. They were places where the disparate worlds of Native American tribes and Euro-American cultures overlapped and competed for limited resources, forming a “new systems of meaning and of exchange” where cultural misunderstandings led to the formation of “new meanings and through them new practices.”¹⁰ The influence of steamboats in Montana’s Missouri River borderland, both their physical passage and the goods their transported, created an array of cultural misunderstandings which stimulated changing significance of objects and places in the material landscape. In the process, steamboats altered land-use practices for both the Native peoples in the region and the Euro-Americans settlers pouring in from all directions.

While embracing and applying White’s *Middle Ground* model as a place where new meaning and new practices developed through cultural misunderstandings, this project endeavors to incorporate more-recent perspectives on White’s framework. In his

⁹ White, Richard. *The Middle Ground : Indians, Empires, and Republics in the Great Lakes Region, 1650-1815* (New York: Cambridge University Press, 1991), X.

¹⁰ White, *The Middle Ground*, X.

2015 publication, *Masters of Empire*, Michael A. McDonnell posited that White had “alienated [tribes] from their own historical context.”¹¹ McDonnell attempted to present the indigenous tribes of the region as people with deep history as well as physical strength of arms. McDonnell argued that understanding the cultural and political realities of Indigenous history was critical to intruding Euro-Americans. The settler-colonialists had to learn about and recognize these Indigenous factors in order to survive in the region. In this way, McDonnell employed a ‘looking east’ perspective which prioritizes an Indigenous viewpoint. This is an approach which the present Montana steamboat project embraces as a way to establish the agency and historicity of Native peoples. This is in opposition to the traditional Euro-American perspective of the ‘Trans-Mississippi West,’ a mindset which privileges the ‘looking-west’ viewpoint as the one of authority.

Elliot West’s 1998 publication *The Contested Plains: Indians, Goldseekers, and the Rush to Colorado* provides an environmental history model of analysis that is especially applicable to understanding the influence of Montana’s steamboats. Historians of the Colorado Gold Rush have traditionally focused on changes over time in the mountains of Colorado during the era, focusing on “what was rushed *to* rather than what was rushed *over*,” while West instead directed his attention to changes to landscape and

¹¹ McDonnell, Michael A. *Masters of Empire: Great Lakes Indians and the Making of America* (New York: Hill and Wang Publishing, 2015), 333 nb. 6, 7.

human geographies along the emigrant routes to Colorado through the Great Plains.¹² West's model has several parallels to the study of steamboats in Montana; his approach will be used to analyze what was rushed *over* and *through* (i.e. Montana's Missouri River borderland) while also looking at the effects these steamboat journeys had on what was rushed *to*, Montana's growing hinterland of Euro-American settlements. West revealed three broader themes of his research: first, "the ancient past of the plains and the mountains," second, "the dense connections between Indian and white histories," and third, "the continuous conversation between human actions and its wondrously varied environment."¹³ These three themes also run through the study of steamboats in Montana from 1859 to 1889, and are useful lenses through which to understand the changes to Montana landscapes and cultures during this time.

One major purpose of re-examining the influence of steamboats in Montana is to develop a greater understanding the physical and cultural changes in the region generally. Steamboats were a significant factor that influenced shifting human demographics in the area and had a huge impact on how diverse cultures interacted with each other and the landscape of Montana. Raising awareness of the important role played by steamboats in Montana between 1859 and 1889 is essential to recognizing the diverse force that shaped the region during the Territorial period and into Montana statehood. Acknowledging the

¹² West, Elliott. *The Contested Plains: Indians, Goldseekers, & the Rush to Colorado* (Lawrence, Kan.: University Press of Kansas), 1998, xvi. (emphasis added)

¹³ West, *The Contested Plains*, xviii.

human, environmental, and technological forces behind these large-scale changes during the second half of the 19th century helps to contextualize the complicated human geographies in Montana today.

Materials Level: Nature and Technology

To flesh-out the intertwined narratives of humans, landscapes, and technologies, this project endeavors to show the influence of physical materials and non-human actors on individuals and groups of people in the Montana landscape during the steamboat era. While Timothy LeCain's 2017 publication *The Matter of History* explored these types of relationships through the study of non-human elements like minerals and insects, this steamboat project embraces the model of historian Richard White's 1995 publication, *The Organic Machine*.¹⁴ It builds off of White's model to study the interactions of technologies, landscapes, and people, integrating these erstwhile disparate histories and establishing the centrality of non-human actors to the human story. Careful study of the steamboat narratives in Montana stresses how environmental and technological components, mountains and rivers and hull designs and paddlewheels, all factored into the lived experiences of people in the region. The stories emphasize the influence that environmental and technological factors exerted on the *mélange* of human cultures

¹⁴ LeCain, Timothy J. *The Matter of History: How Things Create the Past*. Cambridge University Press, 2017; White, Richard. *The Organic Machine*. 1st Hill and Wang Pbk. ed. New York: Hill and Wang, 1996.

present in Montana during the second half of the 19th century. This steamboat project helps to reveal the truth in Whites statement that “we cannot understand human history without natural history and we cannot understand natural history without human history.”¹⁵

Working to move away from traditional tropes in western American history, White’s *Organic Machine* dispelled the false dichotomy separating man from nature, and instead entreated his readers to explore the nuanced space where these theoretical boundaries were blurred by reality. In *The Organic Machine*, White examined the real-world existence of salmon and hydroelectric dams on the Columbia River, entreating his readers to “look for the natural in the dams and the unnatural in the salmon.”¹⁶ In doing so, White inverted “the machine in the garden” literary trope, a trend in 19th century literature which lamented the invasion of industrial machinery and human technology into the seemingly natural, pastoral landscapes of American.¹⁷

Like the salmon and dams in White’s narrative, steamboats in Montana operated in the blurry, grey area bridging the human, the natural, and the technological realms. In his introduction to *Organic Machine*, White paraphrased Donald Worster and built upon Worster’s definition of nature, stating: “Nature [...] is salmon swimming, the river

¹⁵ White, *The Organic Machine*, IX.

¹⁶ White, *The Organic Machine*, XI.

¹⁷ Marx, Leo. *The Machine in the Garden; Technology and the Pastoral Ideal in America* (New York: Oxford University Press, 1964), 376-7.

flowing,” to which White added “humans fishing.”¹⁸ In the study of steamboats in Montana, the question becomes whether, beyond salmon swimming, rivers flowing, and humans fishing, can elements of human technologies, such as steam engines and paddlewheels, be added to the list of natural elements? It is a quest to find the garden within the machine.

To better understand the relationship between people, landscapes, and technology, White utilized the concepts of ‘energy’ and ‘work’ as analytical tools to study the interplay between human and non-human actors. According to White, rivers and humans and mechanical technologies were all connected by their ability to accomplish physical work through the use of energy.¹⁹ In analyzing the experiences of steamboats in Montana, White’s analytical lenses of energy and work are applied to the dynamic three-way relationship between human labor, industrial technology, and environmental forces. As steamboats pushed farther up the Missouri River into Montana, the physical characteristics of the environment challenged the mechanical technologies onboard and the human workers that operated those technologies. To contend with these challenges, the quantity and character of human physical labor changed to meet the new demands. Steamboats navigating into Montana required significant material inputs in order to operate, firewood above all else, and necessitated additional labor to harvest and

¹⁸ White, *The Organic Machine*, X.

¹⁹ White, *The Organic Machine*, X.

utilize those materials. At the same time, the steamboats were modified and evolved to meet the environmental demands of shallow, rocky rivers. As the designs and auxiliary technologies changed, they in-turn influenced the way steamboat workers and the river itself interacted with the boats. Ebbing and flowing much like the river itself, this three-way relationship between the river, the workers, and the technologies on western steamers was a nuanced cycle of energy exchange similar to the models of human-nature energy exchange as explored in numerous publications by Vaclav Smil.²⁰

Related to this energy exchange was the concept of knowing nature through work, another major theme explored by Richard White in *The Organic Machine* as well as in his 1996 piece “Are You an Environmentalist or Do You Work for a Living?”²¹

Technological advancements like the steam engine and the bucketed-paddlewheel were innovative tools used to further the human ability to do work, a way to augment their own physical labor in trying to overcome the forces of the river. This way of understanding the relationship between human labor and technologies is used to examine how the physical labor performed by steamboat workers was directly related to environmental factors and various technologies. Through physical work, through tactile interaction with the mechanical and natural world, steamboat workers became physically and culturally

²⁰ Smil, Vaclav. *Energy in Nature and Society: General Energetics of Complex Systems*. Cambridge, Mass.: MIT Press, 2008; Smil, Vaclav. *Energy and Civilization: A History*. Cambridge, Mass.: MIT Press, 2017.

²¹ White, Richard. “‘Are You an Environmentalist or Do You Work for a Living?’: Work and Nature.” *Uncommon ground: Rethinking the human place in nature* 172 (1996).

connected to the many intricate technologies onboard the vessels as well as the river itself. Far from disconnected, these individuals created unique bonds between each other, the technologies they operated, and the environment they interacted with. Together they reinforced White's point that "labor [...] involves human beings with the world so thoroughly that they can never be disentangled."²²

The intrinsic interconnectedness of human and natural histories was tested and reinforced by Mark Fiege's 2012 publication *Republic of Nature*. Throughout his narratives, vignettes of diverse episodes from American history, Fiege modeled ways of viewing the American past from an environmental history perspective. He accomplished this by examining the intertwined stories of humans and their elemental surrounding, focusing on the influence natural factors had on human history and vice-versa. Fiege did not argue for environmental determinism, but rather that the influences of nature help shape the range of human visions and possible human actions. This was certainly true on steamboats in Montana, where environmental factors like winter snow and sufficient timber didn't ultimately determine the success of a journey but were certainly strong controlling factors. According to Fiege: "The difference between what people think and what nature allows them to do is the difference between agency and determinism."²³

²² White, *The Organic Machine*, 7.

²³ Fiege, Mark. *The Republic of Nature: An Environmental History of the United States* (Seattle: University of Washington Press, 2012), 11.

Through the process of tracking and documenting relationships between people and their environment, historians foster greater understanding of how environment influences human decisions and actions. Fiege's analytical frameworks are used as methodological guides in examining the environmental history of steamboats in Montana. Especially relevant is Fiege's study of the Transcontinental Railroad's construction, a detail-oriented exploration of the relationship between materials, workers, and technologies that went into taking the Transcontinental Railroad from vision to reality. Fiege argued that "American history is the story of a nation and its nature," where "people have arranged their societies to turn [nature] into food, clothing, warmth, shelter, weapons, art, architecture, and many other things."²⁴ The study of steamboat travel in and out of Montana presents a new vignette of American history by examining the ways that steamboats were one of the "many other things" into which human societies had molded nature for their use.

While at first glance studying the relationship between people, technology, and the environment on 19th century steamboats may seem anachronistic, it still has implication for the modern planet. The astounding rate of technological development in the world today is only matched by the rapid degradation of Earth's climate and ecosystems resulting from human activities and the energy exploitation patterns in the American West continue to influence public land-use policy. Much like western

²⁴ Fiege, *The Republic of Nature*, 9-10.

steamboats, technological innovations such as the internal combustion engines and plastics-production were developed to meet human needs and desires, to augment human labor and improve human lives. But these technologies also have dire ramifications for people and the planet, spawning unforeseen consequence that will influence human relationships with the landscape for generations to come. By understanding the many unintended impacts that steamboat technology had on the lands and peoples of Montana, readers are presented with another cautionary tale of technology. It is a story which shows the sprawling consequences, both intended and unintended, that human innovation can trigger.

Transportation Technology

In studying the nuanced repercussions of steamboat travel in Montana, the specific role of steamboats as a transportation technology can be distinguished from the broader examination of technology-human-landscape relationships. As a transportation technology which specialized in the physical movement of materials between landscapes, this study views steamboats as part of a larger urban-hinterland system akin to that presented by William Cronon in his 1991 publication *Nature's Metropolis*. In studying the development of Chicago during the mid-19th century, Cronon emphasized how the city and countryside are intimately interconnected; he showed how one defined the other

and that cities would not exist without the hinterlands that supplied them with materials and people.²⁵

Cronon chronicled the interactions between environments and economies by tracking the flow of commodities between rural and urban settings. For the study of steamboats in Montana, similar analysis of material movement is utilized to better understand that way that steamboats connected Montana with the broader American economy and landscape. By efficiently moving people, commodities, and ideas between the rural Montana setting and the urban centers of St. Louis and Chicago, steamboats were a critical logistical link in this exchange network between landscapes.

In order track the material and cultural influence of steamboats on different geographies on the northern plains and mountains of Montana, the following chapters use specific geographic terminology to address different (but related) landscapes in Montana and the way they related to steamboats. For this research, the term Montana steamboat borderland refers specifically to the Missouri and Yellowstone Rivers, including their water, streambeds, and shores, as well as the landscapes immediately abutting the rivers. In this way, the steamboat borderland encompasses Native and Euro-American settlements in the river valleys, the natural resources found on shorelines, and the steamboats themselves. This project utilizes the term Montana hinterland to identify a separate geography: the landscapes of Montana that are physically remote from the river

²⁵ Cronon, William. *Nature's Metropolis: Chicago and the Great West* (WW Norton & Company, 2009), XVI.

but which were influenced by the people, materials, and cultures transported by steamboats. While these two geographies are related, they are differentiated in unique and meaningful ways.

Time and Space

Transportation technologies like the steamboat not only engaged people and environments in a physical, material-sense, they also had perceptual influences. Steamboats facilitated movement across landscapes and in the process they changed people's spatial and temporal relationship with the physical world. By reducing the amount of time required to get from one point to another, steamboats influenced how individuals perceived distance and time. With changes in transportation technology, new landscapes became accessible and daunting journeys that had taken months could now be accomplished in weeks or days. This, in effect, changed the size of the world and brought places closer together. This aspect of analysis is built upon Mark Fiege's study of the Transcontinental Railroad in *Nature's Republic*, as well as Elliot West's portrayal of horses in *The Contested Plains*, and Christopher Wells' 2012 environmental history of automobiles in America, *Car Country*.²⁶

When looked at from a modern perspective, transportation technologies continue to shape how people see the world around them. Historical transportation revolutions

²⁶ Wells, Christopher W. *Car Country: An Environmental History*. University of Washington Press, 2013.

such as the reintroduction of the horse to North America, the expansion of railroad systems, the bicycle and the automobile, all had drastic effects on people of the time. Learning how transportation technologies, like the steamboat, influenced human relationships to a particular landscape, like Montana, leads readers to a broader understanding of the way technology impacts the human perception of time and space. Understanding these relationships can have further implications as transportation technologies continue to develop. Airplanes and space shuttles are the vanguard of transportation technologies today, while subterranean Hyperloop tubes and space travel for the general public may be just around the corner. All of these transportation technologies will change the way that humans of the day perceive and relate to the world (or worlds) that they encounter.

Power of Human Vision

As steamboats changed human understandings of time and space in North America, they also changed the way that individuals perceived opportunities and dangers in the landscapes they encountered. The influence of steamboat travel in Montana highlighted the power of human perception and vision to alter landscapes. In *The Contested Plains*, Elliot West emphasized the power of human vision and used it as an analytical tool to dissect human understandings of the world around them. West described how “humans are set apart in their environmental exchanges because they

consider and think about their environment as nothing else apparently can.”²⁷ Humans perceive the world around them, sometime correctly sometimes incorrectly, but they “use their brains to create mental variations of the places they observe, variations that exist only inside their heads.” It is the power of these mental variations, possible imagined alternatives, that give agency to humans in their relationship to the landscapes they encounter. West writes: “Only people have tried on a massive scale to move imagined environments out of their heads and to duplicate them in the world where others live” and that it is “imagination [which] gives humans by far the greatest power to alter established arrangements and conditions.”²⁸ Mark Fiege took a similar perspective on the power of human vision in *Republic of Nature* when he described “the efforts of [American] citizens to shape nature in the image of their ideals.”²⁹

In analyzing the impact of steamboats in Montana, this study embraces the above concepts of human vision and imagined possibilities as a way to understand how steamboats influenced peoples’ changing understanding of the Montana landscape. Euro-Americans came to see steamboats as a type of safe-space which facilitated their passage through a dangerous landscape, while it dramatically influenced Native American relationships with their surrounding environments. These dynamic visions incorporated both technology and environment, and deeply influenced how people related to and

²⁷ West, *The Contested Plains*, xviii-xix.

²⁸ West, *The Contested Plains*, xx.

²⁹ Fiege, *The Republic of Nature*, 6.

understood the land around them. By examining how individual perceptions of the landscape changed over time for both Native peoples and Euro-Americans, a broader understanding can be gained about the ways steamboat transportation technologies influenced how people related to the lands and rivers of Montana and understood their life there.

Understanding the power of human beings to envision landscape changes, and to will those imagined alternatives into being, continues to be a relevant factor in today's world. As the human population of the Earth expands through the 21st century, there are many competing visions of what the planet's future looks like. Environmentally, socially, and politically, the possible permutations of the future are all the versions of competing human visions. What visions people chose to enact upon the landscape remains to be seen.

Historiography of Steamboats and American Rivers

While there have been many books and articles written on the history of steamboats in the American West, and on the Missouri River specifically, this Montana steamboat project differentiates itself from the existing historiography by approaching the subject of steamboats in the Upper Missouri River basin through the lenses of Environmental History and Social History of Technology. Earlier publications on the subject of steamboats on the Upper Missouri River have relied heavily on analytical frameworks derived from the fields of economic history and history of technology. Biographies of famous steamboat pilots and entrepreneurs is another way that historians have told the story of steamboat travel on the Missouri River, with authors examining the

lives of ‘great-men’ and the ‘great-events’ of the time. There have also been several works of environmental history that have addressed different aspects of steamboat travel on rivers of the American West, but none of these works have provided an in-depth examination of the give-and-take relationship between the landscapes, technologies, and cultures in Montana through the lens of steamboat technology in the region.

Two of the earliest historical analyses of steamboats on the Upper Missouri River were great-men style biographies focusing on riverboat pilots and captains. The first of these was Hiram Chittenden’s 1903 publication *History of Early Steamboat Navigation on the Missouri River; Life and Adventures of Joseph La Barge*.³⁰ This was an as-told-to biography following the life and river experiences of steamboat pilot Joseph La Barge from the 1830s till the 1860s. Building on the great-man approach to steamboats, in 1909 biographer Joseph Hanson published a similar volume about pilot Grant Marsh, entitled *The Conquest of the Missouri: Being the Story of the Life and Exploits of Captain Grant Marsh*.³¹ While both of these publications are useful sources filled with detail and captivating stories about steamboat travel on the Missouri River, they are also problematic in a modern light. The focus of each of these texts is heavily Euro-American centric; biased perspectives that embody the late 19th and early 20th century concepts of

³⁰ Chittenden, Hiram Martin. *History of Early Steamboat Navigation on the Missouri River; Life and Adventures of Joseph La Barge*. New York: F. P. Harper, 1903.

³¹ Hanson, Joseph Mills. *The Conquest of the Missouri: Being the Story of the Life and Exploits of Captain Grant Marsh*. Gretna, Louisiana: Pelican Publishing, 1909.

Euro-American ethnic and cultural supremacy shine through both publications. In these texts, Native peoples are often represented as two-dimensional individuals and are referred to as savages and uncivilized. These ethnocentric biases prevented the authors from exploring the ways that steamboat travel in the region shaped and influenced the lived experiences of Native individuals in the region. Akin to the Turnerian Frontier Theory, these biographies portray Native peoples as stagnant and non-dynamic ahistorical figures. Likewise, these texts portray the Missouri and Yellowstone Rivers as objects of conquest and domination, natural forces to be overpowered by the will and determination of Euro-American progress. Neither book examines the intricate energy-based relationship of human, nature, and technology and the many ways that actions of human and non-human actors combined to make steamboat travel in the region possible.

Another important text in the historiography of steamboats on rivers of the American West was Louis C. Hunter's 1949 book *Steamboats on the Western Rivers; an Economic and Technological History*.³² As can be inferred from the title, Hunter explored the economic and technological history of steamboats on the North American interior rivers, especially the Ohio, Mississippi, and Lower Missouri Rivers. In his encyclopedic publication, Hunter highlighted the structural and mechanical evolution of steamboats, common experiences of crew and passengers, and the business dynamics of

³² Hunter, Louis C. *Steamboats on the Western Rivers; an Economic and Technological History*. Studies in Economic History. Cambridge: Harvard University Press, 1949.

the steamboat industry in the 19th century. In the descriptions of construction and materials, Hunter enumerates the technical component of various steamboat technologies but does not sufficiently analyze the energy regimes and energy conversion systems of these technologies as part of a continuum of changing transportation technologies. Hunter also did not provide critical analysis of the physical and cultural relationship between technology, nature, and humans. Understanding and developing the link between these interrelated factors is one way that this study of steamboats in Montana builds on the descriptive information presented by Hunter. The influence of steamboats on Native peoples is another point of departure from Hunter's extensive research in *Steamboats on the Western Rivers*, which has a dearth of analysis relating to Native peoples and the many ways they interacted with steamboats.

Looking at steamboat use on the Missouri River specifically, William Lass has written two insightful books highlighting the economic history of steamboats in the drainage. His first book on the subject, *A History of Steamboating on the Upper Missouri River* (1962), focused specifically on the economic impact of steamboats on the Upper Missouri River (i.e. above Sioux City).³³ While filled with relevant contextualizing information and business dynamics, Lass focused primarily on the economic factors stimulating steamboat travel and the intricacies of the rise and fall of specific steamboat

³³ Lass, William E. *A History of Steamboating on the Upper Missouri River*. Lincoln: University of Nebraska Press, 1962.

companies. He also highlighted the transportation role of expanding railroad lines and the ways these rail lines influenced the physical location of steamboat company offices and augmented the pattern of transportation into the Upper Missouri River valley. More than forty years after his 1962 book, Lass returned to the subject of steamboats on the Missouri River with his 2008 publication *Navigating the Missouri*.³⁴ This second book was also an economic history of the Missouri River, but with an expanded geographical focus. While his first book centered on the Upper Missouri valley, *Navigating the Missouri* applied the economic analytical lens to steamboat travel on the entire Missouri River, not just in the Dakotas and Montana. The economic analysis that Lass presented on the lower Missouri River was insightful, but his treatment of the Upper Missouri River in the more recent publication was basically a re-statement of the same economic analysis presented in his first work. As with the technological information presented in Hunter's publication, Lass' economic analysis of steamboats on the Upper Missouri River is used as contextualizing material for this environmental and social history of steamboats in the Montana.

Moving away from technological and economic steamboat histories, there have been several more-recent publications which added to the historiography of American rivers from an environmental history perspective. Two environmental history

³⁴ Lass, William E. *Navigating the Missouri: Steamboating on Nature's Highway, 1819-1935*. Norman, Okla.: Arthur H. Clark, 2008.

books especially relevant to the Missouri River were Robert Kelley Schneiders' 1999 publication *Unruly River: Two Centuries of Change Along the Missouri*, and his 2003 publication *Big Sky Rivers : The Yellowstone and Upper Missouri*.³⁵ In *Unruly River*, Schneiders focused on changes and influences along the Lower Missouri River between Sioux City, Iowa and St. Louis. Schneiders' treatment of the Upper Missouri in this volume skipped the 19th century and jumped into the 20th century, looking at the impact of dam construction in Montana and the Dakotas during this period. Schneiders' *Big Sky Rivers* (2003) moved the analytical focus to the Upper Missouri and the Yellowstone Rivers, interpreting the different energy regimes in the region (sun, grass, water, bison) as well as the impacts of dam construction and river channel augmentation on these regimes. Much of Schneiders' analysis focused on the dynamism of natural ecosystems and the changing relationships between people, bison, and running water in the Montana landscape. *Big Sky Rivers* does provide some commentary on the environmental influences of steamboats on the Upper Missouri, specifically their role in deforestation and disrupting bison herd migrations, as well as presenting an in-depth analysis of the Upper Missouri River as a living ecosystem. Schneiders also analyzed how Euro-American migration to the region influenced the Teton Sioux's relationship to the

³⁵ Schneiders, Robert Kelley. *Big Sky Rivers: The Yellowstone and Upper Missouri*. Lawrence: University Press of Kansas, 2003; Schneiders, Robert Kelley. *Unruly River: Two Centuries of Change along the Missouri*. Lawrence: University Press of Kansas, 1999.

landscape in the Missouri and Yellowstone valleys, but does not emphasize the role played by steamboats in this process.

Another volume of environmental history that is methodologically related to the environmental and social history of steamboats in Montana was Robert Gudmestad's 2011 publication *Steamboats and the Rise of the Cotton Kingdom*.³⁶ While the general details and specific impacts of steamboat travel in the divergent geographies were often unique, Gudmestad's focus on the relationship between steamboats, laborers, and environmental factors is the type of analysis that this environmental and social history of steamboats in Montana seeks to emulate. The way that Gudmestad frames the importance of steamboat travel on the rivers of the American South provided a useful model and point of comparison for the influences that steamboats had on the Montana landscape. Gudmestad's study of the influence steamboats had on demographics (Euro-American, African American, and Native American), economics (trade, commerce, and agriculture), and the environment (timber, coal, and river improvement) in the American South mirrors the ways that steamboats on the Missouri and Yellowstone Rivers influenced the Montana landscape.

This study of steamboats in Montana seeks to apply Gudmestad's model to the influences and impacts of steamboat travel on the Upper Missouri and Yellowstone

³⁶ Gudmestad, Robert H. *Steamboats and the Rise of the Cotton Kingdom*. Baton Rouge: Louisiana State University Press, 2011.

River. Using narrative storylines from journals, diaries, and biographical sources, this project strives to integrate and build upon the existing historiography of steamboats in the region to construct a holistic picture of the many ways that steamboats connected people and environments in Montana through a changing network of physical materials, cultural traits, energy exchange, and conceptual ideas.

Notes on Sources

This study of steamboats in Montana draws on primary source accounts and biographies of steamboat journeys, using the experiences of specific individuals and expeditions as windows into the broader implications of steamboat travel in the region. The first two case studies utilize personal diaries to provide narrative for analysis and investigation, while the third case study incorporates an autobiographical memoir, and the fourth case study integrates information from an as-told-to biography. The personal accounts of onboard experiences are analyzed using the theoretical and methodological approaches detailed in the Methodology section. These methodological approaches are employed to bring new analytical perspective to the incidents and events of the journeys and to highlight broader themes running through the narratives. Secondary historical sources bolster and contextualize the experiences and themes present in the journeys, facilitating a more holistic portrayal of the different factors influencing and being influenced by steamboat traffic on the Missouri and Yellowstone Rivers.

The 1859 journey of the steamboat *Chippewa*, featured in both Chapters 3 and 4, is drawn from two primary source journals of the trip. The first journal of the 1859 American Fur Company expedition is from Charles H. Weber, a resident of St. Louis

who traveled as a passenger on the journey and recorded his experiences in a diary. The original manuscript of this diary is held in the Library of Congress, while two typed copies are also held by the Library of Congress and the National Archives.³⁷ The second journal of this expedition is that of Dr. Elias Marsh, a St. Louis medical professional who accompanied the expedition in the capacity of doctor and surgeon. Marsh's account of events were originally published in 1936 in the *South Dakota Historical Review*, and the original is held at the Missouri Historical Museum of St. Louis.³⁸ Both of these journals were presented in a 2010 publication of documentary history called *Steamboats West: The 1859 American Fur Company Missouri River Expedition* by Lawrence Larsen and Barbara J. Cottrell.³⁹ In *Steamboats West*, Larson and Cottrell present the full and unedited journals of both Marsh and Weber with added historical context but without significant interpretative analysis. While the contextualizing information presented by Larson and Cottrell is generally informative, this master's thesis focuses on the experiences and documentation of events found specifically in the diaries of Marsh and Weber. Their personal perspectives and descriptions frame the experiences and implications of the steamboat *Chippewa* as it journeyed up and down the Missouri River.

³⁷ Weber, Charles, H. "Journal of a Trip to Fort Benton and Back on Board the 'Spread Eagle,' May 28 to August 18, 1859," Photocopy of original. Miscellaneous Manuscripts Collection A-15-34. *Library of Congress Manuscripts Division*. Washington D.C.

³⁸ Marsh, Elias J. "Trip Up the Missouri River from St. Louis to Fort Benton: June & July & August 1859 on the Steamers 'Spread Eagle' & 'Chippewa,'" *Collections of Historical Missouri History Museum*, St. Louis.

³⁹ Larsen, L.H. & B.J. Cottrell. *Steamboats West : the 1859 American Fur Company Missouri River Expedition*. Norman, Oklahoma: Arthur H. Clark Co, 2010.

In Chapter 5, the experiences of James Harkness and the steamboat *Emilie* are narrated through Harkness's own words and observations as he and his business partners ventured up the Missouri River to engage in trade with Native Americans and to supply the growing number of gold miners venturing into the Montana hinterland in 1862. The Montana Historical Society published Harkness's diary in 1896 as part of the *Contributions to the Historical Society of Montana Vol. 2* and the Montana Historical Society still holds the original copy of this diary.⁴⁰

The 1869 journey of Serena Washburn, found in Chapter 6, draws from Washburn's typed autobiographical remembrances in 1903.⁴¹ There are two existent copies of her autobiography, one in the Yellowstone National Park Research Library in Mammoth, Wyoming and another in a privately held collection in New York. In 1999 and 2000, *Montana: Magazine of Western History* published a two-part article with a verbatim reproduction of Washburn's 1869 journey from the autobiography.⁴² The editor of this autobiographical publication, Aubrey Haines, provided general contextualizing information on Serena Washburn and Montana Territory. While Haines provided

⁴⁰ Harkness, James. "Diary of James Harkness, of the firm La Barge, Harkness, and Company: St. Louis to Fort Benton by the Missouri River and to the Deer Lodge Valley and Return in 1862." *Contributions to the Historical Society of Montana*, Vol. 2. Helena: State Publishing Company, 1896, 343-61.

⁴¹ Washburn, Serena J., "Autobiography of Serena J. Washburn," *Yellowstone National Park Research Library*. Typed reminiscence bound in green suede, two copies, fifty-four pages each, 1903.

⁴² Haines, Aubrey L. "A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, Part 1." *Montana; The Magazine of Western History* 49, no. 4 (1999): 16-29; Haines, Aubrey L. "A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, Part II." *Montana; The Magazine of Western History* 50, no. 1 (2000): 18-27.

important and meaningful background on these topics, this present study of steamboats in Montana utilizes the personal experiences of Washburn as she remembered them and described them in her autobiography.

The narrative substance for Chapter 7, which explores the experiences of riverboat pilot Grant Marsh on the Yellowstone River in 1873 and 1875, is derived from an as-told-to biography about Grant Marsh. In 1909, author Joseph Mills Hanson published *The Conquest of the Missouri: Being the Story of the Life and Exploits of Captain Grant Marsh*, which was a biographical study of Marsh himself and his experiences as a riverboat pilot.⁴³ Hanson based this biography on interviews with Grant Marsh, along with documentary evidence furnished by Marsh. Hanson went to great lengths to verify Marsh's information with official documentation and through correspondence with others involved in the incidents. Particularly relevant for the reliability of information presented in this study was Hanson's practice of vetting and verifying Marsh's remembrances by sending copies of chapters and manuscripts to knowledgeable individuals in the steamboat industry and the US military to insure the accuracy of the accounts.

Layout of Chapters

⁴³ Hanson, Joseph Mills. *The Conquest of the Missouri: Being the Story of the Life and Exploits of Captain Grant Marsh*. Pelican Publishing, 1909.

The format of this Montana steamboat study proceeds as follows. Chapter Two is an examination of the natural and human geographies critical to understanding steamboat stories in the Montana. The first half of the chapter looks at the physical creation of the Rocky Mountains and the Great Plains, the influence of global ice ages in forming the Missouri River, and the environmental dynamics encountered by steamboats in Montana. It then examines the human geography of Montana and the northern plains, emphasizing both the continuity and flux of Native American peoples in the region and their cultural connections to the landscape at the start of the Montana steamboat era. Following the natural and human geographies, Chapter Three provides a crash course on steamboat construction and operation using the steamboat *Chippewa* as a quintessential example of the mountain steamboats that plied the waters of the Missouri River in Montana. Chapters Four through Seven are the heart of this project, the analysis of four chronological case studies examining the influence of steamboats in Montana at different periods. Each vignettes focuses on a particular steamboat and individual, drawing on the stories of these boats and people to highlight changes and influences in the borderland and hinterlands of Montana. Progressing chronologically between 1859 and 1889, each case study provides a synchronic view of an individual steamboat journey. Taken together, these individual journeys create a diachronic view which emphasizes the changing influence of steamboats in Montana over time.

The first case-study (Chapter Four) focuses on the steamboat *Chippewa*'s 1859 expedition up to Fort Brulé, becoming the first steamboat to negotiate the rapids of the Missouri River and inaugurating the steamboat era in Montana. The second case study

(Chapter Five) focuses on the journey of James Harkness and the steamboat *Emilie* in 1862, at the very beginning of the Montana Gold Rush and the start of the Minnesota Sioux Uprising. The third case-study (Chapter Six) follows Serena Washburn on her ill-fated journey into Montana during the summer of 1869 as the Montana Gold Rush continued to drive settlement into the newly created Montana Territory. The fourth case study (Chapter Seven) examines the use of steamboats on the Yellowstone River through the experiences of riverboat pilot Grant Marsh and the steamboat *Josephine* between 1873 and 1875. This chapter examines the ways steamboats in Montana were integral logistical tools of both the US Army and the Northern Pacific Railroad during the violent conflicts with plains tribes during the 1870s. The concluding chapter of this Montana steamboat study (Chapter Eight) briefly examines one final case-study set at the end of the Montana steamboat era. The conclusion delves into the steamboat *Montana*, one of the few floating ‘crystal palaces’ that plied the waters of Montana in the early 1880s. The steamboat *Montana* was emblematic of the end of Montana’s steamboat era as Missouri River transportation companies struggled to compete with the railroads. Throughout the arc of these narratives the case studies build on each other, chronicling how steamboat travel in Montana thrived, changed, peaked, and finally dwindled as the rail road tracks approached from the east.

CHAPTER TWO

NATURAL AND HUMAN GEOGRAPHIES

This chapter explores the natural and human geographies of the northern Rocky Mountains and Great Plains to provide an understanding of the physical and cultural realities in the region and to underscore the existing human-landscape relationships and energy dynamics present in the area over the millennia. While steamboats travel on the Missouri and Yellowstone Rivers was a new use of technology, the efforts of steamboat crews to access energy from the landscape was simply another phase of the ongoing human-environment interactions in the region. This chapter emphasizes the intertwined, long dureé histories of environments, people, and their technologies in Montana long before the arrival of steamboats in the Upper Missouri River basin. The natural and human history of Montana is the story of intricate energy exchange systems.⁴⁴ The rise and fall of sea levels, the collision of tectonic plates, the expansion of ice shelves, and the changing shape of rivers were all different forms of these energy exchanges in the natural world. The activities of flora and fauna provided other aspects to this energy exchange system, ranging from the growth of grasses and trees, to the migrations of buffalo and elk across the land and fish swimming through the river. When early *Homo Sapians* arrived

⁴⁴ Smil, *Energy and Civilization: A History* (Cambridge, MIT Press, 2017), 1-3.

on the landscape, they attempted to access parts of these energy systems. They followed and hunted large mammals like the bison, tapping into the protein and caloric energy stored in the animals' flesh.⁴⁵ This was part of an ongoing cycle. The bison had derived their own caloric energy from grasses and other plants, which had obtained their energy from the light of the sun and the nutrient content of the soil.⁴⁶ When steamboats began plying the waters of the Upper Missouri River Basin, the crews engaged with these energy systems to provide fuel for the technology and food for the workers, all while trying to negotiate and overcome the downstream energy of the river itself.

Natural Geographies

Lakes, Mountains, and Rivers

During the Cretaceous Period, ranging between 144 to 65 million years ago, much of the interior of present-day North America was submerged beneath the Western Interior Seaway, also known as the Stable Interior Craton Sea, a massive shallow body of water connecting the Gulf of Mexico to the Arctic Ocean which left deposits sandstone, shale, and limestone.⁴⁷ The Rocky Mountains were gradually formed along the western shore of the inland sea during the Laramide Orogeny, approximately 80-55 million years ago, a

⁴⁵ West, *The Contested Plains*, 50-51.

⁴⁶ West, *The Contested Plains*, 50-51.

⁴⁷ Da Gama, Rui, et al. "Integrated Paleoenvironmental Analysis of the Niobrara Formation: Cretaceous Western Interior Seaway, Northern Colorado." *Palaeogeography, Palaeoclimatology, Palaeoecology* 413 (2014): 66-80; McPhee, John. *Annals of the Former World*. 1st ed (New York: Farrar, Straus and Giroux, 1998), 283-5.

result of energized plate tectonic movement, the Pacific Plate moving north and encountering the westward-moving North American Plate.⁴⁸

The Western Interior Seaway eventually receded and the recently formed Rocky Mountains, the new spine of the continent, developed river systems which delivered precipitation and runoff back to sea level. On the eastern slope of the Rocky Mountains, the majority of the river systems flowed northward, and ended in the cold waters of Hudson's Bay. It was only through the forces of a global climate shift, and the resulting ice age approximately 1.5 million to 10 million years ago, that the waters of this ancient river were diverted by the line of glaciation.⁴⁹ Impeded by the glaciers, the river tried flowing eastward, following the front line of the ice-sheets, until striking a large river valley and heading south, co-opting the course of the Big Sioux River down to the Gulf of Mexico.⁵⁰ The ancient river had abandoned its northerly route and the modern incarnation of the Missouri River was born. Over time, its actual length has continued to change as the living river created meanders and short-cuts, changing its physical reality year to year and decade to decade.⁵¹

⁴⁸ McPhee, *Annals of the Former World 1st ed.*, 309-313, 383-386; "Laramide Orogeny." Britannica Online Academic Edition, 2019, Encyclopædia Britannica; Smil, *Energy and Civilization: A History*, 1.

⁴⁹ Moak, William. "Pleistocene Glaciation and Diversion of the Missouri River in Northern Montana". *Department of Geography and Geology*. University of Nebraska, Omaha. Retrieved Oct 20, 2019.

⁵⁰Bluemie, John. "How the Missouri River Formed." *North Dakota Geology*: May 23, 2015; Moak, "Pleistocene Glaciation and Diversion of the Missouri River in Northern Montana."

⁵¹ Schneiders, *Big Sky Rivers*, 4.

Missouri River: Rocky and Sandy Sections

Flowing from high valleys in the northern Rocky Mountains, the first miles of the Missouri River descended quickly in a pool-drop cycle of rapid and calms, averaging a steep 7-feet-per-mile of elevation loss.⁵² After passing the Great Falls of the Missouri, the river continued to run amidst layers of hard rock as it found its way out of the mountains, through the foothills of the Rockies, and out onto the northern plains. The river remained turbulent as it transitioned from the mountains to the high prairie and badlands.

The 172-mile section from Fort Benton down to Cow Creek, dubbed the ‘Rocky River’ by the 1893 US Army Corps of Engineers’ survey, contained the rapid and shallow stretch of water coursing through the present-day Missouri River Breaks region.⁵³ In this Rocky River section, the Missouri dropped an average of 2.07 feet per mile and presented some of the most difficult obstacles faced by steamboats and other rivercraft in the area.⁵⁴

After passing Cow Creek and exiting the Rocky River section, the remaining 2,113 miles down to St. Louis, Missouri were designated the ‘Sandy River.’⁵⁵ It was in the Sandy River section that the Missouri passed into the fertile and undulating northern

⁵² Lass, *A History of Steamboating on the Upper Missouri River*, 1-2.

⁵³ Lass, *A History of Steamboating on the Upper Missouri River*, 1-2.

⁵⁴ Lass, *A History of Steamboating on the Upper Missouri River*, 1-2.

⁵⁵ Lass, *A History of Steamboating on the Upper Missouri River*, 1.

plains, where the Western Interior Seaway had deposited layers of sedimentary rock. In this stretch, the river possessed a low incline which averaged only 8.5 inches per mile as it continually wound its way through the landscape.⁵⁶ During the two high water times of year the meandering nature of the Sandy River ate away at the river banks around it, eroding the shore line and transporting tons of sediment and up-rooted trees in its currents.

Badlands and the Missouri Breaks

Winding along on its course through the mountains and plains, both the Sandy and Rocky sections of the Missouri River flowed through various stretches of *les mauvais terres*, the badlands. These were zones of dry, broken terrain where the sedimentary rocks and clay-filled soils deposited by the Western Inland Sea eroded with the forces of wind and water into unique and dramatic rock formations.⁵⁷ This created starkly beautiful landforms but the lack of groundwater and the nutrient-poor soil meant that badland areas were also relatively devoid of flora and fauna.⁵⁸

One section unique badlands topography is today encompassed by the Upper Missouri River Breaks National Monument. These badlands were created by the same

⁵⁶ Lass, *A History of Steamboating on the Upper Missouri River*, 1-2; Schneiders, *Big Sky Rivers*, 14.

⁵⁷ Schneiders, *Big Sky Rivers*, 27; "Geologic Formations," Badlands National Park South Dakota. April 12, 2015.

⁵⁸ Parsons, A.J. and A.D. Abrahams, Eds. *Geomorphology of Desert Environments 2nd ed.* (New York: Springer Science Publishing, 2009), 199-209.

glacial ice blockages that changed the course of the ancient Missouri River; the glacial front created temporary ice dams which caused river waters to pool. When these massive pools broke through their glacier dam they drained quickly, carving river new courses and carrying nutrient-rich soils away in the fast-paced floods.⁵⁹

Climate and Weather

Climate and weather patterns were two influencing factors for the hydrological dynamics of the Missouri River drainage. Forces like the El Niño/La Niña effects caused cyclical changes to the weather systems that reached the Northern Rocky Mountains controlling the amount of moisture content that these storm systems brought with them. The amount of snow that fell in the mountainous headwaters of the Missouri River basin directly correlated to the amount of water present in the upper river during the year, while the length and intensity of the spring and summer runoff was then influenced by the timing and intensity of rising spring temperatures. The Sandy River section of the Missouri River typically went through two seasonal high water periods, while the Rocky River stretch (as well as the entire Yellowstone River) experienced one period of high water.⁶⁰ The April Rise was caused by spring rains on the Great Plains and the meltwater of snows on the foothills of the mountains and affected the lower river, while the June Rise was directly caused by the melting of snows in the high Rocky Mountains and

⁵⁹ Moak, William. "Pleistocene Glaciation and Diversion of the Missouri River in Northern Montana."

⁶⁰ Lass, *A History of Steamboating on the Upper Missouri River*, 3; Schneiders, *Big Sky Rivers*, 20.

flooded the channels of the upper and lower rivers alike. If the spring and early summer were consistently hot then the snow in the mountains would melt quickly, providing a very high-water season over a short period of time. If the temperatures were more varied in the spring and early summer, the runoff could be more tempered and provide a high-water season that was longer in duration but without as dramatic of a rise in water level.⁶¹

Flora and Fauna

Climate and weather influenced the types of flora and fauna present in the Missouri River borderlands. The desiccated and heavily scoured landscape of the Missouri River Breaks supported very little plant life and the contained little game. For grasses and trees trying to grow in these region, the lack of mineral nutrients was compounded by the presence of the Rocky Mountains themselves, which stripped water-laden eastern-bound clouds of their precious moisture. This cast a rain shadow over the eastern slope of the Rockies, including the Far Upper Missouri River basin, limiting the amount of precious moisture that reached the area.

In some sections of the Missouri River, where the soil and water conditions were better suited to supporting life. There was plentiful timber with groves of cottonwoods towering over the banks of the river, creating open forest settings that were perfect for big game animals like deer, elk, and buffalo.⁶² These oases of material plenty supported non-

⁶¹ Schneiders, *Big Sky Rivers*, 20.

⁶² Schneiders, *Big Sky Rivers*, 36-37.

human life, trees and game, and contributed to the overall ecological dynamic of the region. Even the presence of smaller life-forms along the shores of the river, creatures such as fish, rattlesnakes, and mosquitos, played a role in the biomes of the Montana Missouri River landscape.⁶³

All of these various and interrelated environmental forces at work in the western lands of the North American continent contributed the different environmental dynamics of the Great Plains and Rocky Mountains with which steamboats eventually contended. These were landscapes in flux. They were dynamic and changing sets of different terrains and biomes that had been experiencing geological, hydrological, and ecological changes for eons before a single human being walked along the surface of the land. While it is important to examine the human history of the area, it is equally important to examine the underlying landscape itself and its energy exchange systems: the morphing and mutable rocks, trees, storms, snakes, and bison. Studying how these elements interacted with each other before the arrival of human beings, helps cultivate a holistic view of the real-world interactions on the ground when *Homo sapiens* eventually immigrated to the North American continent.

Human Geography of Montana

⁶³ Schneiders, *Big Sky Rivers*, 33-34.

Myriad were the forces that influenced human movement over landscapes, and these forces were at work shaping Native cultures and practices in North America for over 10,000 years before the first influences of the European continent were felt. Studying the intertwined narratives of North American lands, peoples, and technologies helps to elucidate the dynamic ways that Native societies grew and changed as a result of environmental, cultural, and technological stimuli. Early Native American communities were not static in a Marxist sense; their cultures and societies changed, developed, grew, merged, fought, died, and lived.⁶⁴

Energy systems influenced how people were drawn by resources and pushed by environmental circumstances. They adapted to meet the changing dynamics of the landscape. They developed new technologies like improved projectile points for accessing the energy stored in the buffalo, or incorporated gathering and agriculture into their seasonal rounds to integrate energy from the soil and sun.⁶⁵ Conflicts over territory and land-use erupted into violence, expanding a victor's territory while driving the defeated into new lands, further disrupting the human and natural systems in those new regions. The human geography of the Great Plains and northern Rocky Mountains had been a changing mix of peoples and cultures for thousands of years before Spanish, French, English, and eventually American interlopers triggered changes that would echo

⁶⁴ Marx, Karl, and David. McLellan. *Karl Marx : Selected Writings*. 2nd ed. (Oxford: Oxford University Press, 2000), 105-10.

⁶⁵ Smil, *Energy and Civilization: A History* (Cambridge, MIT Press, 2017), 24.

through Native cultures and land-use practices from the Atlantic to the Pacific. When steamboats arrived in the region in the mid-19th century, they entered into this ever-developing human-landscape energy relationship and attempted to tap into the natural and human energy systems.

First Migrants

Just as mountains rise and fall, as rivers alter their courses, so too do human beings respond to changes in their landscapes and surrounding environments. Based on findings from archaeological sites in North and South America, theory suggests that the first human beings traveled to the North American continent at least 14.7 thousand years before present.⁶⁶ Evidence from these sites indicates that the occupants were of Asian ancestry, leading to theories of boat migration from northeastern Asia along the Pacific Coast.⁶⁷ These were likely some of the first migrants to call the Americas home.

Waves of other human migrants followed, some possible coming overland several thousand years later between receding ice-sheets at the end the Last Glacial Maximum.⁶⁸ These migrants could have traveled through a steppe ecosystem with grasses, bison, and mammoths approximately 12,600 years before present, when glacial melt waters had

⁶⁶ Pedersen, Mikkel W., et al. "Postglacial Viability and Colonization in North America's Ice-free Corridor." *Nature (London)* 537, no. 7618 (2016): 45-49.

⁶⁷ Calloway, Colin G. *One Vast Winter Count: The Native American West before Lewis and Clark* (Lincoln: University of Nebraska Press, 2003), 31; MacDonald, *Montana Before History*, 31.

⁶⁸ Pedersen, "Postglacial Viability and Colonization in North America's Ice-free Corridor," 45-49.

receded.⁶⁹ This human migration to North America would have proceeded slowly, unfolding over multiple generations as different groups expanded their home-territories farther south to new landscapes. Many would have followed herds of megafauna like mammoths and the massive *Bison Antiquus* through the ice corridors into the plains and mountains of that now make-up western Canada and the state of Montana.⁷⁰ Some of these groups stayed in the lands they encountered, putting down physical and cultural roots. Others would continue moving in all directions, generation after generation, millennia after millennia, creating new cultures and new civilizations in their path.

Early Humans in Montana

Montana has some of the oldest archaeological evidence of humans in North America, including the Anzick Site of the Clovis culture, which radiocarbon dating has shown to be approximately 11,040 years old.⁷¹ Clovis sites are identifiable by their the presence of large, lance-like projectile points, technologically adapted hunting tools specially designed for the megafauna they hunted.⁷² The site divulged tools made from bone and antler, along with stone knives, fluted projectile points and pieces of a spear-

⁶⁹ Pedersen, "Postglacial Viability and Colonization in North America's Ice-free Corridor," 45-49.

⁷⁰ MacDonald, *Montana Before History*, 33-4.

⁷¹ MacDonald, *Montana Before History*, 35.

⁷² Calloway, *One Vast Winter Count*, 33.

throwing device called an atlatl.⁷³ These were technological adaptations to access the energy of the buffalo meat.⁷⁴ Approximately 10,800 years ago there was a the mass extinction event of the North America's megafauna and the human-environment dynamic shifted.⁷⁵ The single species of megafauna to survive, *Bison antiquus*, became the game of choice for the hunters of the Folsom culture, which emerging around 1,000 years after the Clovis.⁷⁶ The people of the Folsom culture built upon the projectile-point technology of the Clovis, and crafted some of the finest points ever made.⁷⁷ They used these technologically innovative points for their pursuit of the *Bison antiquus*. This continued until the start of the Altithermal period, a three-thousand-year long dry spell, stretching from 8,000 to 5,000 years ago, which changed the relationship again; within that same period the *Bison antiquus* had gone extinct.⁷⁸ Its smaller relative, the *Bison bison*, emerged as the dominant hoofed animal on the North American Continent.⁷⁹

Buffalo Hunters and Farmers

Though the *Bison bison* had long been dwarfed by their megafauna relative, *Bison antiquus*, the smaller species engulfed the plains and hill countries of North America.⁸⁰

⁷³ Calloway, *One Vast Winter Count*, 35; MacDonald, *Montana Before History*, 35.

⁷⁴ Smil, *Energy and Civilization: A History*, 26.

⁷⁵ MacDonald, *Montana Before History*, 35; West, *The Contested Plains*, 19-20.

⁷⁶ MacDonald, *Montana Before History*, 3, 39-40.

⁷⁷ MacDonald, *Montana Before History*, 39-40.

⁷⁸ MacDonald, *Montana Before History*, 5; West, *The Contested Plains*, 20-21.

⁷⁹ MacDonald, *Montana Before History*, 3.

⁸⁰ Calloway, *One Vast Winter Count*, 38.

This is the species of buffalo still present on the plains today, though diminished to a tiny fraction of their original range and population size. Over the next thousands of years, the pursuit of the buffalo continued, as it was the best way to get necessary protein in grassland ecosystems.⁸¹ Hunting technologies improved, first with the buffalo jumps and corrals to slaughter their prey, and later, when tribes in Montana began replacing the spear-throwing atlatl with the bow-and-arrow⁸² These were ways to reduce human energy expenditure to access the energy of the buffalo, helping to create a long term and sustainable use of the environment.⁸³ Approximately 1,100 years ago, Native American villages began to develop along the shores of the Missouri River and some tribes integrated corn-agriculture into their subsistence lifestyles.⁸⁴

Native peoples and the buffalo herds of the plains were influenced by the presence and movement of the Missouri River and its tributary streams, which were often the most efficient way for Native peoples to travel for buffalo hunting expeditions. Dugout canoes could be used to navigate either upstream or downstream, providing a versatile vessel for hunting or travelling and some historical evidence points to the use of cottonwood dugouts on the Missouri River possibly as far back as 1,000 years ago.⁸⁵

⁸¹ Smil, *Energy and Civilization: A History*, 31.

⁸² Calloway, *One Vast Winter*, 35; MacDonald, *Montana Before History*, 5.

⁸³ Flores, Dan. *American Serengeti: The Last Big Animals of the Great Plains* (Lawrence, Kansas: University Press of Kansas, 2016), 21.

⁸⁴ MacDonald, *Montana Before History*, 134.

⁸⁵ Wood, Peter H. "Missing the Boat: Ancient Dugout Canoes in the Mississippi-Missouri Watershed." *Early American Studies: An Interdisciplinary Journal* 16, no. 2 (2018): 197.

There is a lack of material evidence to verify this historical theory, but this can also be attributed to the fact that the dugouts were made from wood, and were thus also highly biodegradable.⁸⁶ The Native American use of bull-boats on the Missouri River and its tributaries provides an even better example of the intermingled narratives connecting Native American peoples to the river and the buffalo. Bull-boats were constructed by first weaving a frame of willow branches into a rounded, bathtub-like design. Around this frame was stretched the thick hide of a bull buffalo, creating a lightweight and watertight vessel that could be paddled by a single person and used either to ferry across rivers or to travel downstream with the current.⁸⁷ If tribes hunted the buffalo at locations upstream from their home territory, they could build bull-boats from the hides of the animals they felled and then load the vessels with the meat and other materials harvested from the kill. Other accounts tell of women floating downstream in bull-boats from their homes, harvesting corn from their fields, loading the corn into the bull-boats, and then pulling the bull-boat back upstream from shore.⁸⁸

Horses, Guns, and Disease

The influence of Euro-American cultures and peoples were first felt along the coastlines of the North American continent: the Atlantic seaboard, the Caribbean, and

⁸⁶ Wood, "Missing the Boat," 198-199.

⁸⁷ Gillespie, Michael. *Wild River, Wooden Boats: True Stories of Steamboating and the Missouri River*. 1st ed. (Stoddard, WI: Heritage Press, 2000), 6.

⁸⁸ Wood, "Missing the Boat," 235.

coastal Mexico. Far from these fledgling Euro-American footholds, the northern plains and high Rocky Mountains were remote but they were not completely beyond the pale of Euro-American influence. The tribes of the northern Rockies and plains felt and lived through the first impacts of Euro-American settlement on the North American continent long before they saw European faces or heard the notes of a Romance language. These influences arrived in the form of horses, firearms, and diseases, the combination of which began to influence Native cultures and land-use practices almost from the moment they were encountered. These influences changed the way that Native communities related to the environments and helped reshape the meaning of lands and places.⁸⁹ European diseases were the first forces to impact remote Indigenous communities, spreading overland and by canoe from French, English, and Spanish settlements.⁹⁰ Tribes acquired firearms through trade with the French and English, while horses arrived from the south.⁹¹

Horses had once been endemic to the Great Plains of North America before they died out during the great extinction event that killed off the megafauna.⁹² They were accidentally reintroduced to the continent thousands of years later when the Pueblo Indians

⁸⁹ Calloway, *One Vast Winter Count*, 13.

⁹⁰ Crosby, Alfred W. *Ecological Imperialism: The Biological Expansion of Europe, 900-1900* (Cambridge University Press, 2004), 202, 212.

⁹¹ West, Elliott. *The Contested Plains: Indians, Goldseekers, & the Rush to Colorado* (Lawrence, Kan.: University Press of Kansas, 1998), 71.

⁹² West, *The Contested Plains*, 49.

of Spanish New Mexico revolted against their Spanish colonial overlords in 1680. In the process of driving the oppressive Spanish from the region, the Pueblos killed over 400 Spaniards and unleashed thousands of horses onto the southern Great Plains. Native American tribes in the region quickly took possession of some of the newly-freed horses and in the coming generations the horse herds of Native American tribes on the southern plains grew quickly by feeding on the energy of plains grasses that had long supported roaming bison.⁹³

Over the next hundred years, the horse herds of the tribes on the southern plains grew and expanded due to stewardship from the tribes and the long grasses of the landscape. Through the actions of trade and theft, the presence and influence of horses spread northward from tribe to tribe, region to region. Horses were a transportation technology that changed the way tribes related to their landscapes and redefined the way human being could interact with their environment.⁹⁴ The various Shoshone tribes of the central Rocky Mountains had acquired horses from their southern neighbors. The Shoshone, in turn, traded horses with their neighbors to the north, including the Salish, Kootenai, and Pend d'Orielle, tribes whose home territory ranged westward from the continental divide and encompassed much of western Montana.

Salish, Pend d'Orielle, and Kootenai

⁹³ West, *The Contested Plains*, 49-50.

⁹⁴ Smil, *Energy and Civilization: A History*, 179.

By the time horses started grazing in the home territory of the Bitterroot Salish, the tribe had called Montana home for thousands of years. The Salish origin story, as narrated by tribal oral history, takes place in Montana and describes pre-historic environmental conditions such as glaciers lining the north shore of Flathead Lake and the loss of the continent's megafauna.⁹⁵ Linguistically, the Bitterroot Salish of Montana are related to many tribes further west on the Columbia River plateau, in the areas of present-day Idaho, Washington, and Oregon.⁹⁶ The Salish were closely associated with the Pend d'Oreille and Kootenai tribes, collectively known as the Flathead Nation, and together the groups had long resided in the area around the Bitterroot Valley and Flathead Lake, both west of the continental divide.

Residing west of the continental spine, many of the activities that made up the Salish seasonal-round were finely attuned to the seasonal rhythms and ecosystems west of the Rockies. But the Salish were not stationary throughout the year, and would often venture over to the east side of the Rocky Mountains in pursuit of the massive herds of buffalo on the plains. This way of life, including access to the buffalo hunting grounds of the Great Plains, changed dramatically when the tribes of the Flathead Nation acquired horses from their Shoshone allies farther south in the Snake River plain. The use of

⁹⁵ Juneau, Denise and Julie Cajune, *Montana Indians Their History and Location* (Helena, Montana: Division of Indian Education, 2009), 25.

⁹⁶ Juneau, *Montana Indians: Their History and Location*, 25-28.

horses for buffalo hunts increased the number of people hunting on the plains; between the 1820s and 1850s the population plains buffalo hunters doubled.⁹⁷ This short-term for the Flathead Nation gain quickly reversed and made life more perilous for the Salish, Pend d'Orielle, and Shoshone when the tribes of the Blackfoot Nation acquired horses, likely by raiding them from the Salish and Shoshone. The Blackfoot tribe had long been the Salish's main rival on the east side of the divide, and the Blackfeet soon began to assert their authority throughout the northern plains and Rockies.⁹⁸

Blackfeet

The Blackfeet Confederacy was made up of the Piegan, Blood, and Blackfeet tribes and dominated the majority of Montana's landscape east of the Rocky Mountains by 1859. Around the same time that the Blackfeet acquired their first horses by raiding the herds of their rivals, they also obtained their first rudimentary firearms through trade with the Cree, who had acquired them from the French fur traders in western Canada.⁹⁹ The Blackfeet had deep cultural, social, and material connections to the mountains and plains in the region. The traditional origin story of the Blackfeet takes place in the craggy northern Rocky Mountains, and much of their oral history is focused around the plains of the Missouri River valley and the lands now encompassed within Glacier National

⁹⁷ West, *The Contested Plains*, 67.

⁹⁸ Juneau, *Montana Indians: Their History and Location*, 23-40.

⁹⁹ Donald E Worcester and Thomas F. Schilz. "The Spread of Firearms among the Indians on the Anglo-French Frontiers." *American Indian Quarterly* 8, no. 2 (1984): 110.

Park.¹⁰⁰ Linguistic studies connect the Blackfeet language, stemming from the Algonquian-family, to the region of the northern Great Lakes. Their connections to the landscape of Montana are evident in their terms for the cardinal directions. The Blackfeet word for north means ‘back’ or ‘behind direction’ while South signifies ‘ahead’ or ‘before direction.’ Both of these linguistic markers support the theory that earlier generations of Blackfeet had migrated down from the north plains at some point in generations past. The Blackfeet connection to the Missouri River and the mountains is shown through their words for east and west; all of the rivers that flowed through Blackfeet territory, the Missouri River chief among them, ran from the mountains in the west towards the plains in the east. In the Blackfeet language, west is translated as the ‘up direction’ or ‘uphill’, while east is the ‘down direction’ or ‘downstream.’¹⁰¹

On this landscape that was engraved into their language, the Blackfeet engaged in a seasonal cycle of life: planting tobacco in the springtime, buffalo hunting during the summer months, harvesting berries in the autumn, and wintering in riverbottoms away from the winds and close to timber for firewood.¹⁰² The arrival of the horses and guns to Montana influenced many of these traditional cultural practices, changing the energy regime of Native peoples from their own human muscles to the grass-fed energy system

¹⁰⁰ Calloway, *One Vast Winter Count*, 30.

¹⁰¹ George Bird Grinnell, "Early Blackfoot History." *American Anthropologist* 5, no. 2 (1892): 159.

¹⁰² Juneau, *Montana Indians: Their History and Location*, 5-15.

of horses.¹⁰³ In the early 18th century, the Blackfeet embraced both of these tools to augment their pursuit of the buffalo as well as their intertribal conflicts. The Blackfeet soon became the dominant tribe in the region, ranging on horseback throughout the northern plains during the buffalo hunting season and driving tribes such as the Salish and the Kootenai steadily west, over the continental divide. To the east of Blackfeet territory, the Blackfeet often were allied with the Gros Ventre tribe, speakers of another language from the Algonquin family. To the southeast, the Blackfeet maintained a bitter rivalry with the Crow tribe, while both the Blackfeet and the Crow fought with the various tribes of the Sioux Nation and their Assiniboine allies on the northern plains.¹⁰⁴

Crow

The Apsáalooke people, also known as the Crow tribe or the ‘Children of the Black Bird,’ had called the northern Rockies and plains home for centuries before the arrival of European influence. They had migrated to Montana most-recently from the shores of the Missouri River as it snaked through North Dakota. The spoken language of the Crow is a Siouan dialect and their oral history tradition highlights a centuries-long journey to a prophesized homeland near Cloud Peak in present-day Wyoming. The

¹⁰³ Smil, *Energy and Civilization: A History*, 32.

¹⁰⁴ Juneau, *Montana Indians: Their History and Location*, 5-15.

antecedents of the Crow had long resided in the Great Lakes region, primarily around Wisconsin and the Upper Peninsula of Michigan. Over generations, the ancestral Crow had migrated west across the Mississippi River, headed north towards Lake Winnipeg, before eventually establishing themselves on the Missouri River where they were known as the Hidatsa.¹⁰⁵

Around four hundred years ago, during a time of hunger and starvation on the plains, two brothers among the Hidatsa had competing visions of the tribe's future and this led to a split within the tribe. One brother, Red Scout, was shown a vision of corn and how to cultivate it on the plains. He and his followers, who retained the name Hidatsa, remained on the shores of the Missouri River in North Dakota and pursued an agricultural lifestyle. The other brother, known as No Intestine (No Vitals), was shown a vision of a supernatural being and holy tobacco. He was given tobacco seeds and told, in his vision, to plant the seeds to the mountains in west. No Intestine then led his followers on a long and circuitous route, back and forth across the Rocky Mountains, to find their prophesized homeland. Eventually they worked their way to the base of Cloud Peak, near Sheridan Wyoming, in the Big Horn Mountains. Here they found buffalo, water, grass, game, and berries; here they would plant their sacred tobacco and make their new home. It was the land promised to them in No Intestine's vision. But they had to defend

¹⁰⁵ Juneau, *Montana Indians: Their History and Location*, 16-22.

this homeland from outside invaders, the many different tribes of the Sioux Nation often being their main advisories.¹⁰⁶

Lakota, Nakota, Dakota, and Assiniboine

By the mid-18th century, the tribes of the the Great Sioux Nation were culturally and physically ascendant. Connected by related languages and cultures the Lakota, the Nakota, and the Dakota tribes were collectively known as the Great Sioux Nation by Euro-Americans attempting to categorize the tribes of North America. The word Sioux was an exonym, a name from outside the culture, and was originally derived from the Sioux's main adversary to the east: the Ojibwa (aka the Chippewa). In the Ojibwa language, the Lakota, Dakota, and Nakota were referred as the *Nadowessieux*, a pejorative word meaning "little snakes."¹⁰⁷ The name Sioux was derived from this title and became a general term referring to Native peoples that fall into the different ethnic and linguistic groups under the umbrella term: Great Sioux Nation. After acquiring guns and horses through trade and theft, the Sioux had become a major force of humanity on the northern plains and their home territory was expanding into new lands.¹⁰⁸

The most predominant Sioux tribe in Montana were the Lakota or Teton Sioux, a large group comprised of seven bands: the Oglala, the Sicangu, the Hunkpapa, the

¹⁰⁶ Juneau, *Montana Indians: Their History and Location*, 16-22.

¹⁰⁷ Hamalainen, Pekka. *Lakota America: A New History of Indigenous Power* (Yale University Press, 2019), ix; "The Sioux," *Minnesota Tribes of the 1800s* (Duluth: University of Minnesota).

¹⁰⁸ Hamalainen, *Lakota America: A New History of Indigenous Power*, 62-65, 169-171.

Miniconjous, the Sisasapa, and the Itazipacola. During the 1840s and 1850s, The Lakota had migrated northwest across the plains, following the buffalo herds towards the Yellowstone River basin.¹⁰⁹ To the east of the Lakota/Teton Sioux were the Nakota Sioux, or Yankton Sioux, made up of three bands. The third division of the Great Sioux Nation were the Dakota Sioux, also known as the Santee Sioux. The Dakota/Santee were traditionally the eastern-most tribe of the three groups and consisted of four bands. The Assiniboine tribe of central Montana were a fourth and distant relative of the Nakota/Yanktonai Sioux that had separated from the main Nakota/Yankton tribe sometime before 1640.¹¹⁰ Pushed westward by the same Ojibwa aggression that had driven other Siouan tribes out of the Minnesota forests and across the plains over the previous generations, the Assiniboine established themselves on the northern plains by acquiring horses and taking up the buffalo way of life. During the 18th and early 19th century the Assiniboine ranged between the Saskatchewan River in Canada and the Missouri River in Montana/North Dakota trading and following the buffalo herds.¹¹¹

Gros Ventre, Cheyenne, and Arapaho

The area around the Great Lakes had long been a home territory for many different Native American tribes whose various languages fell into the Algonquin-

¹⁰⁹ Schneiders, *Big Sky Rivers*, 198.

¹¹⁰ Juneau, *Montana Indians: Their History and Location*, 56-62.

¹¹¹ Juneau, *Montana Indians: Their History and Location*, 56-62.

language family. During the early 18th century, the Algonquin-speaking peoples that came to be called the Gros Ventre and the Arapaho, along with their northern plains neighbors the Cheyenne, began migrating westward through the plains towards Montana because of pressure from the Ojibwe (Chippewa) tribe to their east. The ancestors of the Gros Ventre tribe, or the White Clay People, migrated to the plains in what is today north-central Montana to continue their pursuit of the buffalo. The Cheyenne and Arapaho migrated farther, continuing south into the mountains and plains of Wyoming and Colorado to do the same.¹¹²

Euro-American Arrivals

Many different European powers laid claim to the North American continent over the centuries after Columbus arrived in the Americas. But the Rocky Mountains and Great Plains were remote from any direct influence from these competing powers for many years. French and Spanish fur traders explored parts of the mountains and plains during the 17th and 18th centuries, trading with different Native American tribes and attempting to navigate the complicated political networks of alliances and animosities. They also brought diseases with them. Smallpox and other diseases were spread through the continent by trade and war. In the 1780s, smallpox killed thousands of Lakota,

¹¹² Juneau, *Montana Indians: Their History and Location*, 41-62.

Mandan, and Arikara individuals on the northern plains.¹¹³ When the Louisiana Purchase was completed in 1803, the United States of America officially took possession of a huge swath of western lands, including the full breadth of the Missouri River basin and much of the northern Rockies. In 1804-1805, Lewis and Clark explored and documented the route up the Missouri River, over the continental divide, and down the Columbia River to the Pacific, attempting to make good on the United States' claim to the land and giving new place names along the way to cement the claims.¹¹⁴ Throughout this time, the boundaries of Native American territories, and the subsistence activities of tribes, continued to change as the influence of horses, diseases, and firearms caused ripple effects through their societies. The growth of the beaver fur trade in the Rocky Mountains and buffalo robe trade on the northern plains further altered traditional seasonal cycles of tribes, creating material and financial motivation to change land-use practices. In some Native communities, these motivators spurred new interactions with the natural world around them. These new interactions were adaptations of subsistence but could also be seen as the origins of Native American dependency on Euro-American cultures and resources as traditional lifeways were inhibited.¹¹⁵

¹¹³ Fenn, Elizabeth A. *Encounters at the Heart of the World: A History of the Mandan People* (Hill and Wang, 2014), 161-3.

¹¹⁴ Furtwangler, Albert. *Acts of Discovery: Visions of America in the Lewis and Clark Journals* (University of Illinois Press, 1993), 10-11

¹¹⁵ White, Richard. *The Roots of Dependency : Subsistence, Environment, and Social Change among the Choctaws, Pawnees, and Navajos* (Lincoln: University of Nebraska Press, 1983), 317.

Early influences of Steamboats in Montana

The Native populations of Montana felt the influence of steamboats long before the vessels actually arrived in the waters of the Far Upper Missouri River. Starting in 1832 the American Fur Company had run an annual steamboat to Fort Union every year as a way to supply their traders in the area and to transport valuable furs back downstream to St. Louis and the world markets beyond.¹¹⁶ Because of this annual AFC steamboat to Fort Union, the human and material landscapes of Montana's mountains and plains had already been influence by steamboats for over twenty years by the time the *Chippewa* steamed upstream in 1859. The presence of AFC fur traders and steamboat in the Upper Missouri River region impacted tribes throughout the northern plains not only because they supplied important trade goods. They also disturbed bison migrations patterns and changed where they could be found on the landscape.¹¹⁷ They were also important because the US Army and the Bureau of Indian Affairs utilized steamboats as logistical transportation tools in their efforts to pacify, corral, and contain the tribes of the northern plains and Rocky Mountains. Beyond these material supplies, the impact of diseases transported on steamboats was another critical factor to understanding Native American relationships to steamboats on the northern plains.

¹¹⁶ Lass, *A History of Steamboating on the Upper Missouri River*, 10-11.

¹¹⁷ Schneiders, *Big Sky Rivers*, 172-3.

In the summer of 1837 the steamboat *St. Peter* had a major outbreak of smallpox onboard. They continued up the Missouri River as far as Fort Union, infecting countless Native American individuals along the way. There is contentious debate over whether this infection was intended or not, with Native American scholars arguing that the crew of the *St. Peter* knew of the contagion.¹¹⁸ It would have been possible to communicate the disease accidentally but historical analysis points to a potentially intentional infection of Native peoples.¹¹⁹ Over the next three years the disease was estimated to have killed 15,000 - 17,000 Native Americans in the region.¹²⁰ Among the tribes affected by the 1837 smallpox outbreak, it was estimated that two-thirds of the entire Blackfeet tribe was killed, along with half of the Assiniboine tribe, half of the Arikaras tribe, a third of the Crow tribe, and a quarter of the Pawnee tribe.¹²¹ As these tribes struggled to recover from these staggering population decreases, trading with fur company representatives for food and supplies became a more important source of material survival. Similarly, goods and services promised by the United States government in return for land cession and promises of peace played a larger role in where and how Native peoples acquired food. But these food sources required cultural and territorial sacrifices, removing or changing

¹¹⁸ Estes, Nick. *Our History Is the Future : Standing Rock versus the Dakota Access Pipeline, and the Long Tradition of Indigenous Resistance* (New York, Verso Publishing, 2019), 86.

¹¹⁹ Fenn, *Encounters at the Heart of the World*, 317-320, 423 fn 35.

¹²⁰ Calloway, Colin Gordon. *First Peoples: A Documentary Survey of American Indian History* (Bedford/St. Martin's, 2004), 297; Fenn, *Encounters at the Heart of the World*, 323.

¹²¹ Calloway. *First peoples*, 297.

the tribes' relationship to the energy dynamics of their landscape, and tribes often resisted giving in to the demands of US treaty-makers.

US Government Policies

Many of the tribes that emigrated to the Montana landscape during the 19th century were pushed there as a result of the primary US government policies at the time: removal and relocation. The federal practice of officially (i.e. through law) removing tribes from their native lands began with the Indian Removal Act in 1830, which forced Indian tribes living within existing states of the union to uproot their lives and migrate west of the Mississippi River.¹²² Forced movement of tribes westward into the southern plains spawned a type of domino-effect, where tribes forced west by the US government then encountered other tribes in the areas they moved into, fueling further tension, intertribal conflicts, and displacement. The 1830 Indian Removal Act was later followed by the formation of the first official reservation system in the US through the Indian Appropriations Act of 1851.¹²³ By confining them to reservations, the US federal government attempted to control and regulate the lives and actions of different tribes, with disastrous consequences for the tribes.

¹²² Prucha, Francis Paul. *The Great Father: The United States Government and the American Indians Volume I* (Lincoln: University of Nebraska Press, 1984), 206.

¹²³ "1851 Congress Creates Reservations to Manage Native Peoples," *Native Voices*, National Library of Medicine.

Fort Laramie Treaty of 1851

For Native Americans living in Montana and the northern plains in the middle of the 19th century, the Fort Laramie Treaty of 1851, also known as the Horse Creek Treaty, had more immediate ramifications than the Indian Appropriations Act from the same year. Peace between tribes was the goal of the Fort Laramie Treaty of 1851. Over 10,000 Native Americans from eight different tribes of the northern plains attended the treaty conference, including most of the dominant tribes on the northern plains: the Arapaho, Arikara, Assiniboine, Cheyenne, Crow, Hidatsa, Mandan, and Sioux.¹²⁴ Together they agreed to “abstain in future from all hostilities whatever against each other, to maintain good faith and friendship in all their mutual intercourse, and to make an effective and lasting peace.”¹²⁵

The treaty established official territories (not reservations) for each tribe and the tribes agreed to allow the US government to establish roads and military post in their territories. According to the language of the treaty: the United States agreed to “bind themselves to deliver to the said Indian nations the sum of fifty thousand dollars per annum for the term of ten years [...] in provisions, merchandise, domestic animals, and agricultural implements.”¹²⁶ By the end of the treaty conference in 1851, the territories of

¹²⁴ “Fort Laramie Treaty of 1851 (Horse Creek Treaty),” *Scott’s Bluff National Monument*, National Park Service.

¹²⁵ “Fort Laramie Treaty of 1851 (Horse Creek Treaty).”

¹²⁶ “Fort Laramie Treaty of 1851 (Horse Creek Treaty).”

each tribe were specifically delineated and the relationship between Native peoples and the landscapes they called home had been altered, divided-up and parceled-out on an American map. The lived reality on the ground was a different story. As steamboats started navigating into the Far Upper Missouri River of Montana, competing territorial claims and ideologies made the region a complicated web of Native American politics. To succeed in traveling through this dynamic region by steamboat, the commanders and crews of vessels needed to understand the intricacies of the region's human geography as much as they did its natural landscapes.

This chapter on natural and human geographies in the northern Rocky Mountains and Great Plains narrated a brief overview of the developments and changes to the lands and peoples of Montana over the proceeding millennia. The Western Inland Sea deposited sedimentary rock layers while plate tectonics caused the Rocky Mountains to rise, giving a new spine to the continent and a new geologic reality to the landscape. The directions of rivers morphed as the global climate changed, and these climate fluctuations also influenced the actions and movements of *Homo Sapiens*. As the human population of North America continued to grow and expand, people developed relationships with the lands, rivers, and animals in the region, tapping into the existing energy systems of the environment to survive and thrive in different landscapes. When the first Europeans and Euro-American arrived in the region they too attempted to access and utilize the natural resources in the area, competing against and trading with the original Indigenous inhabitants for these resources. The arrival of steamboat technology on the northern

plains in the 19th century was simply a new phase of the changing relationship between different human cultures, the landscapes they shared, and the technologies they used to achieve their aims. The next chapter will explore the fundamentals of steamboat construction and operation, highlighting how steamboats and their workers were connected to a variety of different material landscapes and energy regimes of North America and how the Montana region would challenge steamboat technologies and workers in unique ways.

CHAPTER THREE

STEAMBOAT CONSTRUCTION AND OPERATION

This chapter examines the varied material and energy inputs that went into the construction and operation of American steamboats. It delves into the environmental and material realities that made the areas of Western Pennsylvania and the Upper Ohio River an exceptionally good place to build steamers for western rivers. These pages emphasize the ways that materials and human labor in the Ohio River region were integrated in the physical form of steamboats themselves, while boat builders changed the designs and mechanical technologies of the vessels to adapt to the environmental demands of western rivers. This chapter shows how steamboat crews labored to harvest fuel and food sources from various landscapes in order to energize their technologies and their workers. They did this as a way to meet and overcome the downstream energy of the river by tapping into natural energy sources of the land. Using the 1859 journey of the steamboat *Chippewa* as an example, the chapter also explores how different technological and environmental conditions influenced the type of work and energy required to achieve upstream travel, and the ways that changing environmental challenges mutated the amount of energy necessary. River conditions forced crew members to utilize auxiliary technologies, and their own physical exertions, when the main paddlewheel was insufficient, further altering energy dynamics. Lastly, this chapter looks at the general human demographics onboard western steamers like the *Chippewa*, including the officers, passengers, and workers, and the ways that they interacted with steamboat technologies and the landscapes through which they passed.

All boats are materially-connected to the landscapes where they were built and the environments with which they interact; they were assembled and operated with the work of human labor. Before delving into the experiences and implications of individual steamboat journeys in Montana, it is important to first examine the construction and operation of the steamboats themselves. Steamboat construction required many material inputs and industrial processes. Labor and industrial processes were required to harvest natural resources from the land, convert these resources into building materials through milling and forging, and to physically assemble the various components. Once constructed and afloat, steamboats and their integrated technologies required a whole different set of human and environmental inputs in order to operate.

The construction and operation of the steamboat *Chippewa*, the first vessel to navigate the Missouri River deep into Montana, offers a quintessential example of the mountain steamboats that specialized in shallow-water operation on rivers of the American West. As such, it provides an excellent lens through which to analyze the materials, labor, and industrial processes required to build and maneuver steamboats. Understanding the human and environmental elements integral to these pieces of industrial technology emphasizes the interconnected relationship between these forces. The following pages illuminate the materials and labor that went into building the steamboat *Chippewa* in western Pennsylvania and the type of materials and labor required to run steam-vessels on American rivers.

Headwaters of the Ohio River

The steamboat *Chippewa* was built in the small town of Belle Vernon, on the shores of the Monongahela River in 1857.¹²⁷ Originating in the highlands of West Virginia and flowing generally northward towards Pittsburgh, the Monongahela River may seem, at first, an odd location to build steamboats for the Fort Benton trade in Montana. But western Pennsylvania's access to riverine transportation routes, natural resources, industrial production facilities, and plentiful labor made the Monongahela Valley an ideal place to build western steamers.¹²⁸ At Pittsburgh, the Monongahela and Allegheny Rivers combined to form the Ohio River, which flowed for nearly a thousand miles before uniting with the Mississippi River at Cairo, Illinois. This aqueous connectivity gave the seemingly-insular communities in western Pennsylvania access to New Orleans and the Gulf of Mexico, as well as the massive network of water routes comprising the full breadth of the Ohio-Mississippi-Missouri River system.

Nearly all of the steamboats that operated on western American rivers were built on the upper Ohio River and its tributaries. In the 60 year period between 1820 and 1860 there were almost 6,000 steam vessels built for western rivers.¹²⁹ The boat building hubs

¹²⁷ Way, Frederick. *Way's Packet Directory, 1848-1983 : Passenger Steamboats of the Mississippi River System* (Athens, Ohio: Ohio University, 1983), 86.

¹²⁸ Williams, Michael. *Americans and their Forests: A Historical Geography* (Cambridge University Press, 93.

¹²⁹ Hunter, *Steamboats on the Western Rivers*, 105-7.

of Pittsburg, Cincinnati, and Louisville were responsible for constructing three-quarters of them.¹³⁰ Pittsburg alone produced 32% of western steamers.¹³¹ By the mid-19th century, towns along the Lower Monongahela such as Brownsville, Elizabeth, and Belle Vernon had emerged as production centers of shallow-draft steamboats. Combined, they accounted for much of the remaining 25% of steamboat production.¹³² Monongahela River shipyards specialized in the production of small and medium sized steamboats. This was because the US federal government had completed an extensive slack-water system on the Lower Monongahela, creating a network of locks which regulated the river's flow.¹³³ The dimensions of the locks dictated the maximum-size of vessels that could be brought downstream and thus limited the size of vessels that Monongahela River shipyards could produce.

Hull Materials and Design

The hull of the *Chippewa* was 160-feet long by 30-feet wide, and made from timber found in the dense forests of western Pennsylvania.¹³⁴ While some ship-wrights along the east coast favored the stability and strength of iron-hulled vessels, the heavy

¹³⁰ Hunter, *Steamboats on the Western Rivers*, 105

¹³¹ Hunter, *Steamboats on the Western Rivers*, 106

¹³² Hunter, *Steamboats on the Western Rivers*, 107

¹³³ Ellis, Franklin. *History of Fayette County, Pennsylvania: With Biographical Sketches of Many of Its Pioneers and Prominent Men* (Philadelphia: L.H. Everetts and Co, 1882), 262-3.

¹³⁴ Larsen, *Steamboats West*, 16.

weight of iron meant that steamboats for western rivers were built primarily from wood.¹³⁵ The early steamboats that came out of western Pennsylvania used thick, heavy lumber to provide strength; the steamboat *United States* (1819) had timbers and planking that were 20-inches thick to make the hull impenetrable.¹³⁶ While these thick timbered boats were nigh indestructible from impacts with rocks and trees, they were also heavy and cumbersome.

By the 1830s, steamboat builders were reducing weight by using a wide variety of woods in varying thicknesses. Hardwoods like white oak and ash came from deciduous tree which grew slowly but densely, creating strong and rigid lumber. These dense hardwoods provided structural strength, but were also heavy. In places where wood was needed for non-structural roles, lighter-weight softwoods like pine and cedar could be used. These softwoods came from coniferous trees, which grew quickly but less densely than the hardwoods.¹³⁷ A common design from 1830 used pine (soft) and ash (hard), of 1¼-inch and 3½-inch² thicknesses, respectively, to construct a steamboat's bulkheads. The bottom of the boat was made from 2-inch thick planks of oak (hard) and the top deck was made from 1 ¼-inch pine planks (soft).¹³⁸ Combining the natural strengths and

¹³⁵ Hunter, *Steamboats on the Western Rivers*, 79-81.

¹³⁶ Hunter, *Steamboats on the Western Rivers*, 80.

¹³⁷ "Hardwood and Softwoods," *Forest Products Extensions*, University of Tennessee, 2003; "What is the difference between hard wood and soft wood," *New Zealand Wood*"; Williams, *Americans and their Forests*, 77.

¹³⁸ Hunter, *Steamboats on the Western Rivers*, 80

inherent characteristics of wood types, steamboat builders were able to lighten their boats significantly while still maintaining (relative) structural stability. As a writer on steamboats put it in the 1880s, the steamboats of the American West were built as lightly as possible while still maintaining “safety against falling to pieces.”¹³⁹

Steamboats destined for rivers of the American West had drastically different needs than seafaring vessels. While factors like river obstructions and lack of proper wharfs were important considerations, it was the overall shallow nature of western rivers that posed the most consistent problem for early American steamboats. To adapt to this environmental challenge and reduce their drafts, American steamboat designers began to build boats that were longer and wider but with a much-reduced depth of hull. The increased length and width gave the vessels more surface area on which to float, known as the water-plane-area, and enabled them to “sail *on* the water instead of *in* it.”¹⁴⁰ Buoyancy was critical for shallow water navigation with heavy loads, and boat-builders achieved it by sticking closely to the design which provided the most buoyancy: rectangular shape, flat bottom, straight sides, and square ends.¹⁴¹ Steamboat designers stopped using keels on the bottom of the vessels as way to flatten the bottom of the vessels further, and to enable the boats to make tighter turns.¹⁴² While these structural

¹³⁹ Hunter, *Steamboats on the Western Rivers*, 81.

¹⁴⁰ Hunter, *Steamboats on the Western Rivers*, 75-76 fn 45.

¹⁴¹ Hunter, *Steamboats on the Western Rivers*, 77.

¹⁴² Hunter, *Steamboats on the Western Rivers*, 78.

changes to the hull provided the most buoyancy, they also cost the vessels in stability, maneuverability, and strength of structure.¹⁴³

As the hulls of western steamboats evolved to meet environmental constraints, the layout and visual appearance of the vessels changed as well. Steam engines and associated machinery were moved out of the hull and positioned up onto the deck, along with cargo and firewood. Designers built towering wooden superstructures of decks and cabins to make space for people and cargo.¹⁴⁴ The sides of the main deck were often left unenclosed, to help reduce weight, and all of the woodwork on the upper decks was of light-weight wood varieties like white pine and poplar.¹⁴⁵ To deal with the lack of established docks or wharfs on many western rivers, steamboat designers began to integrate a raking, ‘spoonbill’ bow, which allowed the vessels to nose-up onto shore (or sandbars, for that matter) to transfer goods and passengers over gang-planks.¹⁴⁶

In 1859, new mountain steamboat like the *Chippewa* embodied decades of structural and design changes that had resulted from the environmental demands of western rivers. Their hulls were feats of engineering that reflected the height of steamboat design technology at the time. Pilots of mountain steamboats boasted that they could run their vessels “on a heavy dew” and joked that mountain boats had a shallow

¹⁴³ Hunter, *Steamboats on the Western Rivers*, 77.

¹⁴⁴ Hunter, *Steamboats on the Western Rivers*, 89

¹⁴⁵ Hunter, *Steamboats on the Western Rivers*, 82.

¹⁴⁶ Gillespie, *Wild River, Wooden Boats: True Stories of Steamboating and the Missouri River*, 103; Hunter, *Steamboats on the Western Rivers*, 79;.

enough draft that if “the river is low and the sandbars come out for air, the first mate can tap a keg of beer and run the boat four miles on the suds.”¹⁴⁷ Built of Pennsylvanian timber and assembled by knowledgeable carpenters and shipwrights, the hull and above-board superstructure of the steamboat *Chippewa* and its ilk were technological breakthroughs in their own right before the power of steam was even added to the equation.

Engines, Boilers, and Industrialized Pittsburg

To achieve movement, all steamboats relied upon the conversion of liquid water into gaseous vapor by heating. To produce this steam, and to access the energy within, steamboats employed a system of boilers and engines which converted steam pressure into mechanical work. The majority of boilers on western steamboats were long, narrow, cylindrical tubes made of ¼ inch-thick wrought-iron plates that were riveted together to be watertight.¹⁴⁸ On mountains steamboats they were laid out horizontally on the forward section of the main deck to counter-balance the heavy engines and paddlewheel at the stern.¹⁴⁹ When preparing to get underway, the engineers built roaring fires of wood or coal underneath the boilers, which were filled with water. As the water boiled it was converted to a steam which was channeled into the engine, pushing (or pulling) a piston,

¹⁴⁷ Hunter, *Steamboats on the Western Rivers*, 84

¹⁴⁸ Hunter, *Steamboats on the Western Rivers*, 155.

¹⁴⁹ Hunter, *Steamboats on the Western Rivers*, 155.

driving it to do mechanical work.¹⁵⁰ It was a pressure differential between the atmosphere and the hot steam that forced movement of the piston.¹⁵¹ The energy generated by the piston was transferred through a drive-shaft to the vessel's paddlewheel(s), which churned the water and propelled the ship forward. To vent all of the excess steam and sparks from the fires, boilers typically had a firepan with a chimney system.¹⁵²

Like the majority of mountain steamboats at mid-century, the *Chippewa* used high-pressure steam engines to turn its paddlewheels.¹⁵³ Low-pressure devices used a condensing system which cooled steam above the engines, creating a vacuum and pulling the piston of the engine upward, while high-pressure engines utilized the direct force of steam to drive the piston and create mechanical energy.¹⁵⁴ This stronger mechanical force enabled vessels with high-pressure engines to contend with the stiff currents of western rivers like the Missouri. High-pressure engines were also not as heavy as low-pressure devices, always a relevant consideration on shallow western rivers.¹⁵⁵ Because of these factors, steamboats that used high-pressure engines were less likely to bottom-

¹⁵⁰ Hunter, *Steamboats on the Western Rivers*, 123.

¹⁵¹ Fiege, *The Republic of Nature*, 231.

¹⁵² Hunter, *Steamboats on the Western Rivers*, 154.

¹⁵³ Larsen, *Steamboats West*, 16.

¹⁵⁴ Hunter, *Steamboats on the Western Rivers*, 123.

¹⁵⁵ Hunter, *Steamboats on the Western Rivers*, 129.

out reducing the frequency that ship's crews were forced into more labor-intensive alternatives to move the vessel upstream.¹⁵⁶

The *Chippewa*'s high-pressure steam engines and boilers were all products of Pittsburg, Pennsylvania, the industrial city located at the confluence of the Allegheny and Monongahela Rivers. With a plethora of raw materials for industry and an extensive labor force, Pittsburg hummed with activity in its foundries, engine-works, boiler shops, glass factories, and cotton mills.¹⁵⁷ Timber poured down the rivers towards Pittsburg from logging camps upstream; in 1857 there were 660-million-feet of lumber floated down the Allegheny River alone.¹⁵⁸ The hillsides the lower Monongahela River were flush with coal deposits which fueled, literally, industrial development.¹⁵⁹ There were also substantial deposits of crude iron which local entrepreneurs used to produce pig-iron in small blast furnaces to sell to regional foundries.¹⁶⁰ In 1857 there were 16 engine-works in Pittsburg which cranked-out 339 steam engines and by 1860 the Ohio Valley drainage was producing over 40% of the nation's pig-iron.¹⁶¹ Labor in these foundries and engine shops was hard and dangerous skilled-work, but the steamboats of the

¹⁵⁶ Hunter, *Steamboats on the Western Rivers*, 129.

¹⁵⁷ Hunter, *Steamboats on the Western Rivers*, 31.

¹⁵⁸ Hunter, *Steamboats on the Western Rivers*, 58; Williams, *Americans and their Forests*, 93.

¹⁵⁹ Hunter, *Steamboats on the Western Rivers*, 31, 59; McPhee, *Annals of the Former World*, 245-248; Williams, *Americans and their Forests*, 136.

¹⁶⁰ Hunter, *Steamboats on the Western Rivers*, 31.

¹⁶¹ Hunter, *Steamboats on the Western Rivers*, 31, 108.

American West would not have been built without the energy of these manual laborers and the material inputs they harvested and processed from the landscape.

Paddlewheels

Most steamboats that operated in the Montana trade were propelled by a paddlewheel located at the stern of the vessel, commonly called a sternwheeler. The shallow characteristics and environmental obstacles of mountain rivers meant that configuring paddlewheels at the stern of the vessel was beneficial in many ways. Stern-wheel apparatuses were not as heavy as side-wheels, and in shallow conditions stern-wheels were more versatile than side-wheels.¹⁶² Positioning the paddlewheels at the back of the boat also protected them from environmental obstacles like drifting tree-trunks and ice-chunks that often damaged side-wheels.¹⁶³ Sternwheelers had a slimmer profile which could squeeze through narrow channels and tight gaps in the river without reducing the hull-width and sacrificing flotation-surface-area.¹⁶⁴ There was more physical space on the deck of sternwheelers, making loading and unloading cargo, firewood, and passengers easier and creating space for valuable cargo.¹⁶⁵ Additionally, since sternwheels were easily accessible and were constructed primarily of wood, the

¹⁶² Hunter, *Steamboats on the Western Rivers*, 85.

¹⁶³ Hunter, *Steamboats on the Western Rivers*, 172.

¹⁶⁴ Hunter, *Steamboats on the Western Rivers*, 172.

¹⁶⁵ Hunter, *Steamboats on the Western Rivers*, 172.

carpenter or engineer onboard a vessel could repair any damage with simple carpentry tools and wood available from the landscape.¹⁶⁶ While there were indeed some side-wheeled steamboats that made it up to Fort Benton, mostly during high stages of water, the rivers of Montana were generally dominated by stern-wheelers.

Understanding the intricacies of steamboat designs and mechanical technologies are critical to recognizing the many intertwined environmental and human elements that were involved in the production of western steamboats. But appreciating the technological elements, the hulls and boilers and paddle-wheels, does not tell the whole story of steamboats on rivers of the American West. No steamboat journey was possible without an extensive crew of human workers to operate the technologies, and material inputs like food and firewood to fuel them on their journey.

¹⁶⁶ Hunter, *Steamboats on the Western Rivers*, 167.

OperationAmerican Fur Company and the
1859 Missouri River Expedition

In 1834, the aging John Jacob Astor had sold his American Fur Company to Pierre Chouteau.¹⁶⁷ The American Fur Company had been running its small-statured steamboats up the Missouri River since 1832, navigating each year as far as Fort Union at the mouth of the Yellowstone River, and by 1859 the AFC continued to be the dominant fur trading outfit in the northern Rocky Mountains. They were the company of choice for transportation needs into the region.¹⁶⁸ Pierre's son Charles Chouteau was born into the fur trade and grew-up alongside the industry itself. He slowly shouldered more responsibility for the AFC during early 1850s and by the late '50s, with a dozen years of experience in the fur business, he took over all business matters for the AFC from his father, Pierre.¹⁶⁹

There were two steamboats that Chouteau and the American Fur Company employed for their expedition up the Missouri River in 1859: the *Chippewa* and the *Spread Eagle*. The *Spread Eagle* was a large side-wheeler, 210-feet by 36-feet, with a deep draft, while the *Chippewa*, as has been described, was a shallow-drafted stern-

¹⁶⁷ Sunder, John E. *The Fur Trade on the Upper Missouri, 1840-1865* (University of Oklahoma Press, 1993), 4; 132.

¹⁶⁸ Lass, *A History of Steamboating on the Upper Missouri River*, 10-11; 39-42.

¹⁶⁹ Sunder, *The Fur Trade on the Upper Missouri*, 131-2.

wheeled vessel measuring 160-feet by 30-feet.¹⁷⁰ The AFC owned the *Spread Eagle* outright, but they had contracted with a private ship-owner, a former Baltimore physician named Mr. Crabtree, for the use of his new shallow-drafted mountain steamboat, the *Chippewa*.¹⁷¹ In the contract, Crabtree agreed to pilot his vessel as far as Fort Union as a support lighter for the deeper-drafted side-wheeler, the *Spread Eagle*. If the decision was made to continue to Fort Benton, Crabtree was willing to sell the *Chippewa* to the AFC, enabling the fur company to make its intended journey while removing financial liability from Crabtree.¹⁷² The *Chippewa* set out from St. Louis first with Crabtree at the helm; the *Spread Eagle* departed several days later, on May 28, with AFC pilot John LaBarge manning the wheel.¹⁷³ The other individuals onboard the vessels were a mixture of officers, crew members, and passengers.

Officers and Cabin Crew

On American steamboats, the officer corps made up a small, but important, cohort of skilled workers. A steamboats captain was the leader in charge of all matters on-board, excepting the actual steering of the vessel, which fell to the pilots. For the 1859 journey, Charles Chouteau was captain of the expedition. Each steamboat typically carried two pilots who alternated shifts; the pilots were a breed apart and were not

¹⁷⁰ Way, *Way's Packet Directory, 1848-1983*, 148, 431.

¹⁷¹ Sunder, *The Fur Trade on the Upper Missouri*, 202.

¹⁷² Sunder, *The Fur Trade on the Upper Missouri*, 205.

¹⁷³ Weber, "Trip to Fort Benton," 1.

required to listen to anyone, even the captain, when it came to steering the boat.¹⁷⁴ John LaBarge filled the pilot's role on the *Spread Eagle* at the start of the journey before transferring to the *Chippewa* for the final push above the mouth of the Yellowstone River. A ship's clerk was the administrative officer who kept the books for each journey and was responsible for keeping records about passengers and cargo that were onboard. Engineers kept the steam engines running properly, and the ship's mate was essentially a sergeant-at-arms who kept the crew of deck hands in line through strict (and often violent) discipline.¹⁷⁵ Beyond these positions, there were other important AFC officers and agents on board. Chief among these were Alexander Culbertson, the agent in charge of AFC trading with the Blackfeet tribe at Fort Benton.

Passengers

Aside from the officers of the vessel, there were also approximately sixty passengers staying in the cabins on board the AFC's steamboat *Spread Eagle* when they set out from St. Louis.¹⁷⁶ Among the notable individuals along for the journey was a leading scientist and surveyor Ferdinand Hayden, whose various surveys of the American West over the next decade would help Americans conceptualize the distances and places of the northern Rocky Mountains. Also along for the journey in 1859 was influential

¹⁷⁴ Hunter, *Steamboats on the Western Rivers*, 442-460.

¹⁷⁵ Hunter, *Steamboats on the Western Rivers*, 442-460.

¹⁷⁶ Sunder, *The Fur Trade on the Upper Missouri*, 202

painter Carl Wimar, whose landscapes and scenes of intercultural exchanges on the northern plains of the Missouri River Valley would help mythologize the west in the American imagination.¹⁷⁷ There was a Smithsonian taxidermist named John Pearsall, who had promised Chouteau that he would donate many of his natural history specimens to the Academy of Science in St. Louis, introducing pieces of the American West into the urbanity of St. Louis to feed the imaginations and mythos of the region. Other passengers on board were exchanging work for travel, such as the expeditions doctor, Elias Marsh, who traveled for free in return for medical expertise. And there were other private travelers, such as Mr. Weber, a businessman from St. Louis out for what he hoped would be a pleasure cruise to the Far Upper Missouri River.¹⁷⁸ To keep all of these officers and passengers cared for while on board, there was a small contingent of cabin crew members (cooks, waiters, chambermaids, etc.) who were hospitality workers onboard what was essentially a floating hotel.

Deck Crew

Members of the deck crew onboard western steamboats were the human laborers that performed the majority of the physical work required to navigate steamboats. Alternatively known as deck hands, roustabouts, or voyageurs, the deck workers on

¹⁷⁷ "Carl Wimar: Chronicler of the Missouri River Frontier," *Gateway Arch National Park*, National Park Service.

¹⁷⁸ Sunder, *The Fur Trade on the Upper Missouri*, 202-3.

western steamboats were generally from a working-class background and were distinguished by their specific duties and responsibilities. There were 80 deck hands on board the steamboat *Spread Eagle* when it pushed away from the levee at St. Louis. The majority of them were employees of the AFC.¹⁷⁹ The world of deck hands was a rough-and-tumble atmosphere, heavily-masculinized, with a mixture of skilled and unskilled laborers. These were the workers who provided the vast majority of human energy required to operate steamboats and they faced the most danger in their jobs.

At the start of the AFC Missouri River expedition in 1859, the deck crew onboard the *Spread Eagle* were mostly French-American voyageurs, also known as engages. They were AFC employees, fur trappers and traders who knew the Missouri River from years of hard experience.¹⁸⁰ Through a manipulative system of selling supplies to their own employees at exorbitant rates, many AFC workers on steamboats were often indebted to their employer.¹⁸¹ While the AFC provided them with food, liquor, and other essential supplies while working on the boats, these roustabouts had to fend for themselves once they arrived at their destination. This meant either hunting and gathering from the landscape or purchasing essentials from the company outpost.¹⁸²

¹⁷⁹ Sunder, *The Fur Trade on the Upper Missouri*, 202.

¹⁸⁰ Chittenden, *History of Early Steamboat Navigation*, 108-9.

¹⁸¹ Sunder, *The Fur Trade on the Upper Missouri*, 134.

¹⁸² Sunder, *The Fur Trade on the Upper Missouri*, 134; Weber, "Trip to Fort Benton," 15-16.

In some ways, the AFC's deck crew in 1859 represented a fleeting labor dynamic on steamboats, as transportation-specific companies took over the market from fur companies. Steamboat historian Louis Hunter noted that steamboat deck hands "formed a distinctive class of casual workers, the first important group of this kind in the west."¹⁸³ At night they slept on top of cargo, or the deck itself, and were always on call to chop and carry firewood, operate the steam-capstans and steam-pumps, or transfer cargo between the vessel and shore.¹⁸⁴ As the Montana steamboat era progressed, the work of deck hand employees was often augmented by the unskilled help of deck passengers, individuals paying a reduced cash-rate for their journey and using their labor to meet the cost of their passage.¹⁸⁵ It was the physical work of the deck hands and deck passengers that made steamboat travel possible, but, like the steam engines, the workers also required fuel. As the largest group of laborers on steamboats, deck workers consumed the majority of calories on these journeys.

Fueling the Steamboat *Chippewa*

A critical factor of steamboat navigation on rivers of the American West was the availability of food to feed its crew and firewood to fuel its engines. After being built in western Pennsylvania in 1857, the *Chippewa* headed down the Ohio River where supplies

¹⁸³ Hunter, *Steamboats on the Western Rivers*, 447.

¹⁸⁴ Hunter, *Steamboats on the Western Rivers*, 453.

¹⁸⁵ Hunter, *Steamboats on the Western Rivers*, 419-426.

could be purchased in the villages along the way or in industrialized cities such as Cincinnati, Ohio (1860 pop: 161,044) and Louisville, Kentucky (1860 pop: 68,033).¹⁸⁶ On the Mississippi River, where the *Chippewa* spent the seasons of 1857 and 1858, commercial wood-barges floated downstream from the forested shores of Minnesota and sold pre-cut cord-wood to passing steamers.¹⁸⁷ Merchants operated in towns along the Upper Mississippi between St. Louis, Missouri (1860 pop: 160,773) and St. Paul, Minnesota (1860 pop: 10,401), selling necessary food, ice, and other supplies to steamers, for a price.¹⁸⁸

By 1859, when the *Chippewa* and *Spread Eagle* headed out from St. Louis, even steamboats plying the lower stretches of the Missouri River had little trouble finding necessary operating materials. Supply infrastructure was in place to support regular steamboats services as far as Kansas City and rail-lines connected Missouri settlements like Jefferson City (1860 pop: 3,000) and St. Joseph (population of 8,932, 1860 census) to the broader US economy.¹⁸⁹ Even the fledgling settlement of Omaha, Nebraska (1860 pop. 1,883) had ice and other supplies for the *Chippewa* to purchase in 1859.¹⁹⁰

¹⁸⁶ "The Population of the United States (By States and Territories)," 1860, US Census Bureau.

¹⁸⁷ Twain, Mark. *Life on the Mississippi* (New York: Penguin Books, 1984), 204, 209-210; Williams, *Americans and their Forests: A Historical Geography*, 188; Wood, "Missing the Boat," 197-8.

¹⁸⁸ "The Population of the United States (By States and Territories)," 1860, US Census Bureau.

¹⁸⁹ Larsen, *Steamboats West*, 59; 68.

¹⁹⁰ Larsen, *Steamboats West*, 80-81.

Food and Booze

While the officers often ate with the cabin passengers in the up-scale dining room, the rest of the crew feasted in less ornate ambiance. An observer of steamboat deck hands eating dinner on the Upper Mississippi in the 1850s added some color to the scenery. He wrote: “the broken meat was piled into pans, all sorts in each pan, the broken bread and cake into other pans, and jellies and custards into still others [...] with plenty of boiled potatoes [...] One minute after the cry of ‘Grub-pile’ one might witness the spectacle of forty men sitting on the bare deck, clawing into the various pans to get hold of the fragments of meat or cake which each man’s taste particularly fancied.”¹⁹¹

Alcohol was another requisite on steamboats in the American West, and crew members were all rationed a portion of whiskey or other spirit for their days’ labors. The use of alcohol before, during, and after the work day was a long-running American tradition dating back to the colonial era.¹⁹² A government survey in the 1830s found that “intoxicating liquors were served to western steamboat crews almost without exception.”¹⁹³ The use of liquor to dull the pain and exhaustion of steamboat labor was even more necessary on the work-intensive waters of the Missouri River. One

¹⁹¹ Merrick, George Byron. *Old times on the Upper Mississippi: The Recollections of a Steamboat Pilot from 1854 to 1863* (Cleveland, Ohio: A.H. Clark, 1909), 129.

¹⁹² Rorabaugh, William J. *The Alcoholic Republic: An American Tradition* (Oxford University Press, 1981), 14-16, 18-19.

¹⁹³ Hunter, *Steamboats on the Western Rivers*, 456.

steamboating guideline suggested that officers on the Missouri River “must give your hands more whiskey than you would do on other rivers, the labor being much harder.”¹⁹⁴

Firewood

To feed the fires underneath each boiler, steamboats required carbon energy: fossil-fuel in the form of coal or biofuel in the form of wood. In dire situations, where even more steam was needed, crew members could also add resin, oil, or pine knots to the fires to make them burn even hotter.¹⁹⁵ While oceangoing steamships usually relied on energy-dense coal for their long trans-oceanic journeys, steamboats operating of American rivers relied on a mixture of coal and wood, depending on the price and availability of each.¹⁹⁶ In general the American steamboat operators preferred wood for their boiler fires.¹⁹⁷ In this way, steamboats use of wood-biofuel was a remnant of the the early Industrial Revolution; by 1850-1880 the general use of coal and oil surpassed that of wood fuel.¹⁹⁸ When the steamboat *Chippewa* launched from Belle Vernon, Pennsylvania in the spring of 1857, obtaining fuel in the region was rarely a problem and passing steamboats could conveniently purchase their fuel of choice from lumber-yards

¹⁹⁴ *House Ex. Doc. 11*, 16th Congress, 2nd Session, United States Congress, 86, 94; from Hunter, *Steamboats on the Western Rivers*, 455.

¹⁹⁵ Hunter, *Steamboats on the Western Rivers*, 131.

¹⁹⁶ Headrick, Daniel R. *The Tools of Empire : Technology and European Imperialism in the Nineteenth Century* (New York: Oxford University Press, 1981), 131; Hunter, *Steamboats on the Western Rivers*, 266-270.

¹⁹⁷ Williams, Michael. *Americans and their Forests: A Historical Geography* (Cambridge University Press, 1992), 153-4.

¹⁹⁸ Smil, *Energy and Civilization: a History* (Cambridge: MIT Press, 2017), 164.

and coal-depots along the way.¹⁹⁹ The working population of the coal mines and lumber yards that fed these depots were an integral part of the labor regime that fueled the engines of American steamboats. Instead of working to harvest their own fuel, steamboats in western Pennsylvania paid cash for the physical exertions of others, when they could.

Wooding work on steamboats was taxing and perilous in many ways, whether it was purchased pre-cut or needed to be felled. Steamboats typically burned twenty-five cords of wood for every twenty-four hours of running, and an average individual worker could cut and stack 1-1.5 cords of wood for an eight hour work day.²⁰⁰ One steamboat worker, Friedrich Gerstäcker, described the experience of wooding as a dangerous one, especially at night: “One has to carry logs four or five feet in length, six or seven at a time, down a steep, slippery bank, sometimes fifteen or twenty feet in height when the water is low, and then to cross a narrow, tottering plank frequently covered with ice.”²⁰¹ This process was repeated multiple time per day as the vessels proceeded on their journey. Things became even more complex when there was no pre-cut wood to purchase. In remote areas, after locating suitable quantity and quality of trees, the crew

¹⁹⁹ Ellis, Franklin. *History of Fayette County, Pennsylvania*, 230-232, 813-814; Hunter, *Steamboats on the Western Rivers*, 264-267; Williams, *Americans and their Forests: A Historical Geography*, 136, 153.

²⁰⁰ Lass, *A History of Steamboating of the Upper Missouri River*, 13, Williams, *Americans and their Forests: A Historical Geography*, 77.

²⁰¹ Hunter, *Steamboats on the Western Rivers*, 453.

had to first cut them down with iron axes and section them into smaller lengths with saws before going through the difficult work of carrying the wood onto the steamboat.

The 1859 journey of the *Chippewa* and the *Spread Eagle* would carry the vessel through the northern plains on the shifting, sandy currents of the Missouri, leaving behind Euro-American settlements and the supply infrastructure that went with them. Beyond the Euro-American settlements, the plains topography still dominated. Native tribes continued their traditional practice of burning the prairies to keep the forests at bay, which was good for hunting but bad for steamboats needing wooden fuel.²⁰² When they passed Sioux City, Iowa and entered the Upper Missouri River, the officers and crew of the *Chippewa* had to source their own operating materials. To get firewood they had to harvest it with axe and sweat; to eat fresh meat they had to hunt. Both these activities required additional labor and exposure to danger on shore. While this consumed time and made the going much slower, it also changed the labor regime of the vessels and reinserted the energy expenditures of the ships' crew into the process of fueling their industrial technologies.

Mountain Steamboat Techniques and Technologies

Steamboat travel on the Missouri River was rarely straight-forward and never easy. Shifting sandbars choked the braided river channel and trees in the river, known as

²⁰² Williams, *Americans and their Forests*, 199

snags and sawyers, threatened to rip-out the hulls of passing steamboats. To overcome shallow conditions and turbulent rapids, steamboat crews employed a variety of techniques and subsidiary technologies to aid the vessels in their passage. When a steamboat's primary steam engines and paddlewheels were not sufficient to overcome natural challenges, crews employed subsidiary technologies which required further human work and additional material inputs.

Since the keelboat era in the United States, the most basic way that crew members assisted their vessel was by getting ashore and pulling up stream by rope. In steamboat parlance the rope was known as a cordelle; they were often two to three hundred feet long in order to reach to shore and have enough slack for several men to grab ahold and pull.²⁰³ When this was not realistic or practical, steamboat crews could use a capstan to pull themselves upstream instead, a process known as warping. They did this by attaching their cordelle (rope) to an anchor, usually a tree on shore or a log buried in the sand. The rope would then be run up on the deck of the boat and attached to a capstan, a type of a cylinder-winch on a vertical axis that pulled on the rope while it was spun.²⁰⁴ In the early years of American steamboats the capstans were all manually powered, spun by a group of workers pushing handles in a circle to take-up the rope. By the 1850s, these

²⁰³ Chittenden, *History of Early Steamboat Navigation*, 104-105; Hunter, *Steamboats on the Western Rivers*, 253

²⁰⁴ Chittenden, *History of Early Steamboat Navigation*, 121-122.

manual capstans had been replaced by steam-powered ones, changing the labor dynamic of the work once again.²⁰⁵

By the time of the *Chippewa*'s journey in 1859, steam capstans were also an essential part of a technique known as sparring, a standard method of getting unstuck for steamboats that navigated in low water conditions. Spars were telephone-pole-sized pieces of timber positioned on either side of a steamboat's bow. When a boat got stuck or encountered a sandbar blocking its path, the spars were lowered and pushed into the sandbar at a 45 degree downward angle. Crew members attached ropes which ran along the length of the spar-timbers from the foot of the spars (buried in the sandbar), up through a pulley system at the top of each spar, and then down to the deck of the vessel where they were attached to steam capstans. The capstans were then fired-up and the ropes pulled taught, lifting the steamboat upwards and forwards and suspending it above the sandbar. This process was affectionately known as "grass-hopping" or "walking-the-steamboat."²⁰⁶

With the bow of the steamer thus suspended in the air above the offending sandbar, the pilot would put the stern-wheel in motion and drive the steamboat a foot or two forward. The crew would then lower the boat onto the sandbar and reset the spars at a forward angle again, repeating the process as many times as necessary to get over the

²⁰⁵ Hunter, *Steamboats on the Western Rivers*, 253.

²⁰⁶ Hunter, *Steamboats on the Western Rivers*, 254.

obstacle. The weight of the steamboat would often agitate the sand and gravel of the bar, causing it to break-up and be swept away by the current. In this way, steamboats slowly ate away at the sandbars while limping over the top of them. This process could involve hours or days of tedious and dangerous work.²⁰⁷

In 1859, the AFC steamboats labored upstream through the state of Missouri, and into the Great Plains, operating relatively smoothly. They encountered natural challenges presented by the river, but nothing the crew and the boat's technology could not handle; these lower sections of the river had known steamboat travel from nearly 40 years by that point, and the crew and officers understood their jobs in this environment. Beached on a sandbar near St. Joseph, Missouri, the deck hands engaged the *Spread Eagle's* sparring system for the first time, getting the boat unstuck before proceeding onward.²⁰⁸ The officers purchased the labor of riverside woodhawks, buying biofuel for the vessel while contributing money to the local cash economy.²⁰⁹ Passengers got on and off at small port-town along the lower river, and merchants loaded cargo for destinations further upstream. The steamboats stopped in Omaha, Nebraska Territory to take on ice and more

²⁰⁷ Hunter, *Steamboats on the Western Rivers*, 254.

²⁰⁸ Weber, "Trip to Fort Benton," 2.

²⁰⁹ Marsh, Elias J. "Trip Up the Missouri River from St. Louis to Fort Benton: June & July & August 1859 on the Steamers 'Spread Eagle' & 'Chippewa,'" *Collections of Historical Missouri History Museum*, St. Louis, 3-4.

supplies; this was one of the last Euro-American settlements on the lower river.²¹⁰ When the steamboats reached Sioux City, Iowa, a town with a half dozen stores and a dozen houses, they were 990 miles upstream from St. Louis.²¹¹ Above Sioux City, the vessels would be entering a new topography, the Upper Missouri River, a riverine landscape that would present them with new environmental, technological, and cultural challenges, pushing the steamboats and their crews to the limit.

The proceeding pages provided a brief overview of the material and labor inputs that went into the construction and operations of steamboats in the American West. This chapter examined the landscape and labor regimes of the Upper Ohio River during the 19th century, stressing how the riverine connectivity of the region, as well as its plentiful supply of wood, iron, coal, and laborers (both skilled and unskilled), made it an area well-suited for the production of western steamers. It examined the different ways that steamboat builders modified designs and mechanical technologies to meet the environmental challenges and fueling options along the shores of shallow western rivers. Hull designs had their drafts reduced, steam-engines became more powerful, the configuration of paddlewheels changed, and the type and amount of human labor changed, all in an effort to overcome the downstream currents of shifting, sandy rivers.

²¹⁰ Weber, "Trip to Fort Benton," 81-2.

²¹¹ Weber, "Trip to Fort Benton," 3.

All of these materials and laborers, along with the technological system of which they were a part, would be put to new challenges as they steamed to the furthest reaches of the Ohio-Mississippi-Missouri system. The following chapter continues to narrate the 1859 journey of the steamboat *Chippewa* as it navigated into new steamboat waters. The *Chippewa*'s crew soon faced the stronger downstream energy dynamic of the mountainous Far Upper Missouri River and attempted to fuel their passage from the timber and game of the surrounding landscape.

CHAPTER FOUR

1859 *CHIPPEWA* JOURNEY INTO MONTANA

This chapter follows the journey of the American Fur Company's steamboat *Chippewa* into the waters of the Upper Missouri River and the landscape of Montana using the journals of two travelers on the expedition: Elias Marsh and Charles Weber. Both of these journals were reproduced line-by-line in the 2010 publication *Steamboats West: the 1859 American Fur Company Missouri River Expedition*, a volume of documentary history by Barbara Cottrell and Lawrence Larson. The narrative of this chapter focuses on changes in labor and material inputs required on the northern plains upstream of Sioux City, Iowa, emphasizing the switch from pre-cut timber and prepared foodstuffs to a reliance on game and trees from the surrounding landscape. The dynamics of the Far Upper Missouri River are examined to show how the increased angle of the landscape created challenging rapids for steamboat navigation, while the changing surroundings of badlands and mini-oases influenced how and when steamboat crews could access the energy sources they needed. The chapter explores different ways that steamboat crews met their energy requirements by taking timber from uninhabited villages and homesteads as well as the process of hunting for food and for sport. It examines the materials transported upstream and downstream as a way to understand the environmental elements that first drew steamboats into the region during the fur trade era, and the way that steamboat travel influenced the material culture of different societies. These influences included trade goods and military supplies, but also beaver pelts and

buffalo robes, all of which changed the way that different groups of people in the regions interacted with each other and the environments around them. The relationship of steamboat travel with different Native American tribes is also emphasized, showing how the influence of steamboats in the region varied from tribe to tribe, in this case focusing of the ways that the Blackfeet and Assiniboine tribes related to the vessels at the start of the steamboat era.

The *Chippewa* stopped only briefly in Sioux City, 990-miles above St. Louis, before continuing onward, past the mouth of the Big Sioux River, and into a new phase of their journey. One passenger, noting the condition of Sioux City as they passed through, said “some half dozen stores & about 12 other houses constitute the town.”²¹² Doctor Marsh, traveling onboard the *Chippewa* for free in return for his medical knowledge, recognized that they were approaching a more dynamic and interesting section of the river. Since leaving St. Louis he had been complacent in his diary-keeping, a fact he attributed to the relative normalcy of the trip. On June 10, two weeks out from St. Louis, he wrote: “So little has passed till today that I have not kept my journal regularly.”²¹³ But Dr. Marsh soon had more to write about as the *Chippewa* steamed beyond Sioux City and

²¹² Weber, “Trip to Fort Benton,” 3.

²¹³ Marsh, Elias J. “Trip Up the Missouri River from St. Louis to Fort Benton: June & July & August 1859 on the Steamers ‘Spread Eagle’ & ‘Chippewa,’” Collections of Historical Missouri History Museum, St. Louis, 9. [Cited hereafter as Marsh, “Trip up the Missouri River”]

into the Upper Missouri River. Running through South Dakota, North Dakota, and into Montana where the river begins, steamboat navigation took on new and challenging dimensions above Sioux City.

Upper Missouri River

On June 12, passenger Weber noted that when the steamboat stopped for wood that morning the crew had to cut it for themselves. He continued: “This was the first time we have not found a wood-pile already cut.”²¹⁴ For two to three hours every day, the crew of the *Chippewa* now had to chop down timber instead of purchasing the wood-splitting labor of others. While their iron-headed axes meant that the woodcutters had industrial technology on their side, they still to chop down the trees, buck them into lengths of 10 to 15-feet, carry the logs onto the boat, saw the wood into sections, and finally split them to the needed size.²¹⁵ Occasionally they got lucky and found pre-cut wood waiting for them, like on June 13th when the expedition “took cedar wood aboard, which somebody had cut and corded in some small ravines.”²¹⁶

The *Chippewa* also cannibalized abandoned outposts and buildings along the river shore, consuming the material existence of former settlements and devouring the homes where lives had been lived. This was the case when they “wooded at a deserted village of

²¹⁴ Marsh, “Trip Up the Missouri River,” 10-12.

²¹⁵ Marsh, “Trip Up the Missouri River,” 10-12; Williams, *Americans and their Forests*, 96.

²¹⁶ Weber, “Trip to Fort Benton,” 4.

Mandan[,] taking away log houses and lodgepoles,” or a little further upstream when they looted logs and poles from an abandoned Gros Ventre village.²¹⁷ On another day, the expedition had less luck with their wood-raiding, having stopped “near the remains of log houses with the intention of carrying off the logs,” only to find them “too rotten.”²¹⁸ In pilfering wood from these villages and houses, the steamboat crews were taking advantage of the labor and energy of those who built the structures. Euro-Americans had been doing this in North America since their arrival, including the English in New England and the Spanish along the Gulf coast.²¹⁹

Hunting also became incredibly important for the *Chippewa*’s progress after entering the Upper Missouri River above Sioux City. Travelers on overland routes had long relied on hunting to supply their protein, but this was only required of steamboat crews in remote areas.²²⁰ The expedition’s hunters began spending more time roaming the surrounding hillsides in search of game. This included the official hunters of the expedition, who the AFC paid approximately \$400 a year for their services, as well as the ship’s passengers, who hunted for pleasure and science.²²¹ The hunters from the *Spread Eagle* shot an antelope within days of leaving Sioux City and a week later they got a

²¹⁷ Weber, “Trip to Fort Benton,” 7-9.

²¹⁸ Weber, “Trip to Fort Benton,” 5.

²¹⁹ Crosby, *Ecological imperialism*, 202-205, 212.

²²⁰ Meldahl, *Hard Road West*, 36-38.

²²¹ Sunder, *The Fur Trade on the Upper Missouri*, 133.

deer.²²² The following evening, a steamboat clerk shot an elk while a few of the other hunters got lost and were forced to hike 20 miles to catch-up with the steamer.²²³ After passing Fort Clark and Fort Berthold, both upstream from present-day Bismarck, North Dakota, the expedition had their first buffalo sighting and the ship's hunters began to have more luck, killing several buffalo and deer over the course of a few days.²²⁴ The shooting of buffalo from the decks of steamboats for both food and entertainment had long been a common practice on the Great Plains.²²⁵

Arriving on June 30th at Fort Union, the fortified fur trading post near the mouth of the Yellowstone River, the expedition passengers were surprised to find fresh milk and butter to compliment the bison, venison, and elk steaks they had been eating for the previous weeks.²²⁶ The milk and butter was from the herd of cows kept at Fort Union, testament to the reality that agricultural elements were finding their way to fledgling Euro-American settlements on the Upper Missouri River. The traders at Fort Union also kept horses, pigs, and oxen as both work animals and sources of food.²²⁷ The *Chippewa* only spent two days at Fort Union, enough time to offload some of the ship's cargo and for those onboard to do trading for moccasins and other Native American products. The

²²² Marsh, "Trip Up the Missouri River," 19-21.

²²³ Weber, "Trip to Fort Benton," 6-7.

²²⁴ Marsh, "Trip Up the Missouri River," 27-28; Weber, "Trip to Fort Benton," 7-8.

²²⁵ Schneiders, *Big Sky Rivers*, 179.

²²⁶ Weber, "Trip to Fort Benton," 10.

²²⁷ Sunder, *The Fur Trade on the Upper Missouri*, 135.

crew unloaded a mixture of trade goods for the American Fur Company's operation at Fort Union as well as a cache of resupply materials for the US Army soldiers of the Reynolds expedition.²²⁸

The troops under Reynolds had left the Missouri River steamboat country at Fort Pierre II on June 18th, and headed overland, west, towards present-day Wyoming. This was after eventually receiving assurances from the Dakota tribe that they could pass through their lands safely.²²⁹ At Fort Union, the AFC steamboats fulfilled their contract with the US Army by off-loading resupply materials for the Reynolds Expedition. These supplies were then hauled up the Yellowstone River on mackinaw boat, by hand, to the AFC trading outpost on the Yellowstone, Fort Sarpy II, where Reynolds would be able to pick-up the materials. Reynolds and his troopers, including surveyor Ferdinand Hayden and mountain man Jim Bridger as guide, spent a total of fifteen months surveying and mapping the mountains and plains bounded by the Platte and Yellowstone Rivers, cartographically defining many areas of the northern Rocky Mountains for the first time and spawning further Euro-American interest in the region.²³⁰

Encouraged by the amount of water in the river, Charles Chouteau along with the other AFC officers and agents onboard, decided they would try to reach Fort Benton, far to the west and hundreds of miles further upstream near the base of the Rocky

²²⁸ Marsh, "Trip Up the Missouri River," 30-31.

²²⁹ Weber, "Trip to Fort Benton," 5-6.

²³⁰ Sunder, *The Fur Trade on the Upper Missouri*, 204.

Mountains.²³¹ The two vessels of the expedition, the *Spread Eagle* and the *Chippewa*, had been running in tandem since passing Omaha, Nebraska, but the *Spread Eagle* would not proceed beyond Fort Union. As a heavy, deep-hulled, side-wheeled steamboat measuring 210-feet by 36-feet, the *Spread Eagle* was not designed for the shallow waters above the mouth of the Yellowstone River.²³² As had been pre-arranged (on the assumption that the mission to Fort Benton would proceed), the *Chippewa*'s owner, Captain Crabtree, sold the *Chippewa* to the AFC for \$13,700.²³³ Crabtree and his crew from the *Chippewa* then floated back downstream in a mackinaw boat, an un-motorized barge steered with oars, and left the *Chippewa* in the capable hands of pilot John LaBarge and the AFC voyageurs.

Far Upper Missouri River

Charles Chouteau ordered the *Chippewa* loaded with 160 tons of cargo destined for Fort Benton, selected 95 of his most reliable and experienced voyageurs to crew the vessel for the journey, and pushed off from the shore of Fort Union on July 3.²³⁴ It was on this first day out from Fort Union that the *Chippewa*'s mate, the man in charge of directing all the labor onboard, got his toe jammed into an auxiliary steam-pump and Dr.

²³¹ Chouteau, Charles P. "Early Navigation of the Upper Missouri River." *Contributions to the Historical Society of Montana Vol 10: 1876-1940*.

²³² Way, *Way's Packet Directory*, 431.

²³³ Sunder, *The Fur Trade on the Upper Missouri*, 205.

²³⁴ Sunder, *The Fur Trade on the Upper Missouri*, 206.

Marsh ended up having to amputate part of the offending digit. It was not an auspicious start to the journey, but they proceeded upstream none-the-less. That evening, passenger Weber was kept up late into the night by the chatter and laughter of the French-speaking voyageurs who were sleeping on the deck outside of his cabin.²³⁵ These workers were unwinding and enjoying their pipes after a challenging and toilsome day on the river, having covered almost 70 miles since leaving Fort Union in the morning. This relaxation time of smoking and drinking in the evening had been a tradition enjoyed by voyageurs on steamboats since at least the 1830s, and by Euro-Americans in general since the colonial era.²³⁶

The *Chippewa* soon entered a landscape with plentiful game, including antelope, deer, elk, wolves, and herds of up to 500 buffalo.²³⁷ In these ecological oases, the steamboat crew did not have to search far for timber and some stretches had high cottonwood trees arching over park-like areas.²³⁸ But beyond these idyllic zones, where essential material resources were plentiful, the Missouri River in Montana soon flowed through more desolate landscapes: *les mauvais terres*, the badlands. In these remote reaches, much of it encompassed today by the Missouri Breaks National Monument, the

²³⁵ Weber, "Trip to Fort Benton," 10-11.

²³⁶ Rorabaugh, *The Alcoholic Republic*, 14-16; Wied, Maximilian, Prinz Von, and Thwaites, Reuben Gold (Ed.). *Travels in the Interior of North America, Part I, Early Western Travels, 1748-1846, Volume XXII* (Cleveland, Ohio: Arthur H. Clark Company, 1906), 240-241.

²³⁷ Weber, "Trip to Fort Benton," 11-12.

²³⁸ Weber, "Trip to Fort Benton," 12.

Chippewa's progress became more dubious as the barren landscapes challenged the mechanical technologies of the vessel and tested the material limits of steamboat operation in the region.

After passing the mouth of the Milk River on July 6, the *Chippewa* soon entered virgin steamboat waters for the first time. The previous head of steamboat navigation had been El Paso Point, five miles above the Milk River, where the steamboat *El Paso* had made it six years earlier. Beyond that, the only vessels that had plied the water of the Missouri River were Native American bull-boats and canoes, as well as Euro-American mackinaws and keel-boats. The crew's elation at their progress was quickly tempered when the *Chippewa* got stuck on sandbars just after passing El Paso Point, and were "detained until daylight the next morning in sparring over" the obstructions.²³⁹ After stilt-walking the boat all night long, there would have been no smoking and relaxing for the *Chippewa*'s crew that evening.

The remote nature of the expedition and their isolation from resupply began to tell when the boat's ice ran out on July 7.²⁴⁰ Without ice, the *Chippewa* was unable to preserve its perishables, including all the game-meat harvested along the way; Weber commented that the ship's supply of butter "looks & smells like old wagon grease."²⁴¹ On July 9 one of the hunters shot a buffalo cow, and there was "[m]eat enough to feed a

²³⁹ Marsh, "Trip Up the Missouri River," 31-32.

²⁴⁰ Weber, "Trip to Fort Benton," 12.

²⁴¹ Weber, "Trip to Fort Benton," 12.

regiment, but having no ice, and no fit place to keep it in, a good deal spoils.”²⁴² A couple days later, when the expedition’s hunters shot six buffalo, only one bull was brought on-board because of the lack of ice; the remaining carcasses were left for the wolves to consume, providing an easy meal and energy for the local scavengers.²⁴³

On July 9 the *Chippewa* reached Round Butte, the nominal halfway point between Forts Union and Benton, and entered a badlands landscape again. This was one of several badlands areas on the Far Upper Missouri River and Dr. Marsh commented that “wood is scarce in this part of the river so we are obliged to seize every opportunity.”²⁴⁴ The *Chippewa* steamed past the mouth of Cow Creek and its associated Cow Island, on July 11. This was the transition to the Rocky River section of the Missouri River and the vessel soon encountered the first real rapids of the Far Upper Missouri. Over the next fifty tumultuous miles they would navigate through fifteen named (i.e. serious) rapids along with numerous smaller ones.²⁴⁵ This is where the geological uplift of the Rocky Mountains began to tell on the progress of the *Chippewa*. Below Cow Creek the river had an upward angle that averaged only 8.5-inches of elevation gain per mile. But above Cow Creek, and for the remaining 172-miles to Fort Benton, the Rocky River section of the Missouri average 2.07-feet of elevation gain per mile.²⁴⁶

²⁴² Weber, “Trip to Fort Benton,” 12-13.

²⁴³ Weber, “Trip to Fort Benton,” 13.

²⁴⁴ Marsh, “Trip Up the Missouri River,” 36-39.

²⁴⁵ Larsen, *Steamboats West*, 166.

²⁴⁶ Lass, *A History of Steamboating on the Upper Missouri River*, 1-2.

Ironically, the forces of geological uplift that had created the challenging upslope of the Rocky Mountains were also a major cause of the AFC's operations in the region in the first place. During the early 18th century, the fur trade had transitioned away from the Great Lakes region and moved to focus on the buffalo robe trade of the northern plains and the beaver pelt trade of the Rocky Mountains. While the massive buffalo robes from the plains continued to be important to the fur industry, it was the thick winter fur of the North American beaver (*Castor Canadensis*), residing in the rivers and streams of the geologically uplifted Rocky Mountains, which first made the region so valuable. Beaver pelts grew thicker in colder climates and higher elevations, and the Rocky Mountains' combination of a northerly latitude and increased elevation made a perfect environment for thick and luxuriant beaver furs.²⁴⁷ The uplift of the Rocky Mountains influenced the beavers' biological processes, which in turn influenced human activities related to the beaver's material existence. The actions of both Native Americans and Euro-Americans were influenced by the value placed on the beaver furs, and new relationships evolved between humans, their surrounding environmental, and their technological tools.

But before reaching Fort Benton, and the valuable beaver pelts that the AFC business relied upon, the *Chippewa* first had to contend with the rapids of the Rocky River. The first few rapids they encountered were "mere riffles," but they soon found more challenging whitewater and were forced to lighten by off-loading some cargo into

²⁴⁷ Rebecca Anderson. 2002. "Castor canadensis," *Animal Diversity Web*. University of Michigan.

the mackinaw barges before slowly inching upriver along the shoreline.²⁴⁸ The landscape alternated between badland topographies and sandstone rock formations, and the crew gathered essential firewood whenever they could find suitable timber. The *Chippewa* labored its way upstream through the lower rapids until July 13, when they encountered more serious hydraulics: Bird's Rapid and then Dauphin's Rapid. Dauphin's in particular was considered the most challenging rapid in the Rocky River and the efforts of the *Chippewa*'s crew to force their way upstream is testament to this.

Dauphin's Rapid was one of the critical points for steamboats in the Far Upper Missouri River, a place of physical and socially-constructed significance where human, technological, and environmental energies converged.²⁴⁹ where the intense downstream energy of the river had to be countered with energy and work by the technologies onboard the steamboats and the crews that operated them. Rapids were created by the steep loss of elevation, essentially a downhill in the riverbed, which forced the currents to accelerate. This downstream force could be compounded and increased when the river bed was made of hard rock, which both concentrated the force of the current and created turbulence in the river channel itself, roiling the water into chaos. These were the natural forces that steamboat technologies and crews needed to overcome in order to continue traveling upstream.²⁵⁰

²⁴⁸ Weber, "Trip to Fort Benton," 13-14.

²⁴⁹ White, *The Organic Machine*, 11-12.

²⁵⁰ White, *The Organic Machine*, 12-13.

After arriving at the base of Dauphin's Rapid at 11 am, the *Chippewa's* crew first lightened the steamer by off-loading cargo into the mackinaw boats so they could be pulled upstream by hand. This lightened the draft of the vessel, but not enough to let them continue. Crew members then went ashore, hiked upstream above the rapid, and buried an anchor (known as a 'deadman') in the sand. This anchor, most likely a log buried sideways on the shore, was attached by rope (cordelle) to the *Chippewa's* steam-powered capstan. They fired-up the steam-capstan, consuming more valuable wood, and attempted to winch the vessel upstream; the capstan broke-down and their progress was halted.²⁵¹ The *Chippewa* passed the night in the midst of the roaring rapid, roped to the anchor onshore.

On the *Chippewa's* second day of attempting the infamous Dauphin's Rapid, passenger Weber recorded that the ship was "without wood, [and] everybody [was] on shore picking up anything that will make steam."²⁵² After collecting all of the burnable material "within a ½ mile circuit" they finally managed to get up steam and proceeded all of three or four yards before getting stuck on rocks. It was time for more hard and dangerous manual labor; the crew set both the spars to lift the vessel up and over the rocks in an attempt to move upstream again, without success. Finally, all of the remaining bits of cargo were emptied out of the *Chippewa* into the mackinaw boats and

²⁵¹ Marsh, "Trip Up the Missouri River," 37-39.

²⁵² Weber, "Trip to Fort Benton," 14.

with the help of ropes and the repaired capstan, the steamboat proceed past Dauphin's Rapid at last.²⁵³ They quickly pulled over at the top of the rapid so that all of the cargo could be reloaded onto the steamer, and they were still in sight of Dauphin's Rapid when evening arrived. This was much to the chagrin of all on-board, with passenger Weber noting that "at nightfall we were still in sight of the hateful Rapid, which we had approached the day before."²⁵⁴

The dynamic interaction of human, natural, and technological forces at Dauphin's Rapid had provoked an emotional human reaction, hate in this case, and generated an aversion to this particular natural place as a result. Steamboat crews and passengers like those on the *Chippewa* often formed connections with the volcanic and geological formations that marked their passage; geological landforms and distinctive rock formations became imbued with meaning and these human-rock relationships could take on emotional qualities (for the human, not the rock). They became associated with specific positive or negative experiences. This was similar to the ways that early Euro-American settlers associated the health of a landscape with their own physical health. On the Missouri River it was the dangers of the river that they related to, and the physical

²⁵³ Weber, "Trip to Fort Benton," 14.

²⁵⁴ Weber, "Trip to Fort Benton," 14.

landmarks by which they marked their passage, which could convey good tidings or bad.²⁵⁵

Above Dauphin's Rapid the badlands tapered off temporarily and gave the *Chippewa* a chance to wood-up in the well-timbered Judith River basin before entering the beautiful White Cliffs section of the river. For many, the stunning cliffs conjured visions and emotional recollections of buildings, cities, and churches spires while the massive intrusions of basaltic black rock stood out as distinctive waypoints and landmarks to process the passage of time and distance. The *Chippewa* traversed this dramatic region for three or four hours, until steep rock-walls marked the end of the White Cliffs and the vessel again emerged of into an area of "tame and uninteresting" hills.²⁵⁶

After passing the mouth of the Marias River, timber became very scarce again. Rotten logs and small branches were all that the *Chippewa*'s crew members could forage from the surrounding valley, emphasizing how the dearth of material inputs on the barren landscape once again stymied the expedition's progress. Things came to a breaking point on the afternoon of July 17, when the *Chippewa* pulled over at the scorched ruins of Old Fort McKenzie. They were out of wood. After traveling over 2,000 miles from St.

²⁵⁵ Valencius, Conevery B. *The Health of the Country: How American Settlers Understood Themselves and Their Land* (New York: BasicBooks, 2002), 33, 261-3.

²⁵⁶ Weber, "Trip to Fort Benton," 15.

Louis, the *Chippewa* was only fourteen miles from its destination: Fort Benton. They would go no farther.

Old Fort MacKenzie and Fort Benton

Charles Chouteau ordered the *Chippewa*'s cargo unloaded onto the shore at Old Fort MacKenzie and then he and a handful of officers and passengers started walking to Fort Benton, ten miles distant. They had walked about four miles from the steamboat when they crossed paths with four men from the fort on horseback. Then horsemen gave up their mounts to the newcomers and returned to the boat by-foot with those who did not receive a horse. When this group of ramblers returned to the vessel it was past 11pm; the unloading of the cargo had been finished by that point, and impromptu party had begun. Weber, who had been with the walkers and was tired, lamented the festivities. As he went to bed he noted the "most horrible din and noise, kept up by the deckhands and the men and women from the fort, who in small parties arrived all through the night."²⁵⁷

The cargo that the *Chippewa*'s crew unloaded onto the shore at Fort MacKenzie held a variety of materials, all of which would impact the peoples and landscapes in the vicinity of Fort Benton and the surrounding environments. The materials fell into three categories, each of which will be further explored in turn. Firstly, there were trade goods for AFC company agents to exchange for beaver pelts and buffalo robes which drove the

²⁵⁷ Weber, "Trip to Fort Benton," 15-16.

fur industry in the region. Also included in this AFC category would be foodstuffs to supplement the diets of company agents, fur trappers, and voyageurs in the region. Secondly, there were supplies and products that the US government had agreed to provide for the Blackfeet tribe. These Blackfeet supplies, known as treaty annuities, were compensation for land cession and other compromises the tribe had conceded to make four years earlier. Lastly, there were resupply materials for US military operations in the region, specifically for Captain John Mullan's crew of workers and surveyors building an overland road to connect Fort Benton with the military outpost of Walla Walla, in Washington Territory. Essential to understanding the background and context for all of these transported materials, is the 1855 Lane Bull Treaty, also known as the 1855 Blackfeet Treaty.

Lane Bull Treaty of 1855

In October of 1855, Isaac Stephens and other American negotiators convened a treaty conference at the mouth of the Judith River with the hope of creating a lasting peace between the Blackfeet, their Native American neighbors, and the Euro-Americans in the region. Stephens had recently become the new governor of Washington Territory and was also an agent with the Indian Bureau. After much deliberation, those assembled at the treaty conference came to an agreement and signed what became known as the Lane Bull Treaty (named for the first Native signature on the document). The tribes involved in the agreement included the Blackfoot Nation (consisting of the Piegan,

Blood, Blackfoot and their Gros Ventres allies), the Flathead Nation (Salish, Upper Pend d'Oreille, and Kootenay), and the Nez Percé tribe.²⁵⁸

The treaty negotiators sought to establish land-use understandings which would reduce confrontations and conflict. One of the primary results of the treaty was the creation of a common buffalo hunting ground in the hill-country and plains of Montana between the Musselshell and Yellowstone Rivers. Since mid-century the buffalo herds had been retreating farther northwest into the areas of Montana and Wyoming.²⁵⁹ To give all the tribes access to the material wealth of the buffalo, the treaty carved the buffalo common out of lands originally designated as Blackfeet Territory by the Fort Laramie Treaty of 1851. This reduced the scope of Blackfeet territory to the area between the Musselshell River and the Canadian border at the 49th parallel. The creation of the buffalo hunting common established a new understanding of land-use, a new relationship between Native peoples and their landscape:

for ninety-nine years, where all the nations, tribes and bands of Indians, parties to this treaty, may enjoy equal and uninterrupted privileges of hunting, fishing and gathering fruit, grazing animals, curing meat and dressing robes²⁶⁰

²⁵⁸ Farr, William E. "“When We Were First Paid”: The Blackfoot Treaty, The Western Tribes, and The Creation of the Common Hunting Ground, 1855." (*Great Plains Quarterly*, 2001), 131-154.

²⁵⁹ Schneiders, *Big Sky Rivers*, 190-198.

²⁶⁰ Farr, "When We Were First Paid," 131-154; "Blackfeet Treaty 1855," *Washington History*.

This established the rights of tribes, including those directly to the west of the continental divide, to hunt buffalo and do other seasonal activities on the plains without violating the territory of the Blackfeet and instigating conflict. None of the signatory tribes were allowed to establish permanent settlements or any type of exclusive privileges in the hunting common.²⁶¹ Conversely, the US government and other Euro-American institutions did have certain privileges in these areas.

The US representatives ensured that Euro-Americans would have land rights in Native territories, one way or another. The tribes who signed the treaty officially consented to allow the United States to:

construct roads of every description; establish lines of telegraph and military posts; use materials of every description found in the Indian country; build houses for agencies, missions, schools, farms, shops, mills, stations, and for any other purpose for which they may be required, and permanently occupy as much land as may be necessary for the various purposes above enumerated.²⁶²

This was not exactly an image of tribal sovereignty. The American negotiators also included provisions that were especially relevant for steamboat travel in the region, specifically for the use of “wood for fuel” and that “the navigation of all lakes and streams shall be forever free to citizens of the United States.”²⁶³ In return for relinquishing their sovereignty and a portion of their territory for the creation of the

²⁶¹ “Blackfeet Treaty 1855,” *Washington History*. (Articles 3 and 4)

²⁶² “Blackfeet Treaty 1855.” (Article 8)

²⁶³ “Blackfeet Treaty 1855.” (Article 8)

common hunting ground, the US government agreed to pay the Blackfeet tribes “twenty thousand dollars, annually, for ten years, to be expended in such useful goods and provisions, and other articles.”²⁶⁴ These were the treaty annuities that the *Chippewa* carried as cargo for Fort Benton.

There were many effects from this treaty for all of the different populations involved. For one thing, the peace that was established, tentative as it was, opened the door for more Euro-American engagement with the landscape of the northern Rocky Mountains and Far Upper Missouri River. This meant theoretical safety for more trappers and traders, migrants and settlers. The treaty also established Fort Benton as the new Blackfeet Agency, the place where Blackfeet tribal members would go to receive the distribution of their guaranteed annuity payments. It was also, again theoretically, the place where they could air their grievances when there were issues with the Euro-Americans in the area. As Fort Benton was already the established trading outpost for the Blackfeet trade in beaver furs and buffalo robes, it was a logical place to set up as a distribution point for the treaty goods.

The American Fur Company’s relationship with the Blackfeet had had its ups and downs over the previous decades, but by the mid-1850s the AFC had established themselves at Fort Benton, in the heart Blackfeet country.²⁶⁵ Indeed, the AFC’s agent at

²⁶⁴ “Blackfeet Treaty 1855.” (Article 9)

²⁶⁵ Sunder, *The Fur Trade on the Upper Missouri*, 62-64.

Fort Benton, Alexander Culbertson, was married to a prominent Blood tribal member from the area, Natawista Iksina (“Medicine Snake Woman”). The signing of the Lambe Bull Treaty in 1855 was a welcome step for the AFC traders as it would hopefully reduce the intertribal violence in the region and bring further peace and prosperity for the AFC agents themselves, as well as the Native populations with whom they traded and profited from.

Many of the goods onboard the *Chippewa* in 1859 were destined for the fur trading interactions at Fort Benton, exchanges that saw beaver pelts from the streams of the surrounding countryside traded for a menagerie of products imported from the United States and Europe. The goods which so captivated the Native American trappers included: “mirrors and bells from Leipzig; clay pipes from Cologne; beads from Italy; cloth from France; blankets from England” and other small trinkets and handicrafts from American production facilities.²⁶⁶ Craftsmen in places like St. Louis produced goods for the fur trade, such as beaver traps, barrels, and iron-headed tomahawks, all of which could be extremely useful in the mountainous landscape.²⁶⁷ The iron axe-heads, in particular, were valuable; there are accounts from early encounters on the lower Missouri River, where the Native American populations were sometimes more impressed with iron axe-heads than they were by Euro-American firearms.²⁶⁸ Also included in the materials

²⁶⁶ Sunder, *The Fur Trade on the Upper Missouri*, 134.

²⁶⁷ Sunder, *The Fur Trade on the Upper Missouri*, 131.

²⁶⁸ Wood, “Missing the Boat,” 238.

for AFC operations in the area were tools, clothing, and guns for the protection and maintenance of Fort Benton and its employees.²⁶⁹

With the signing of the 1855 Lame Bull Treaty, the US government had inadvertently created a new revenue stream for the American Fur Company, helping to diversify the companies interests in the northern Rockies. The AFC had already done contract work with the Bureau of Indian Affairs (BIA) for decades, and held the Indian annuities transportation contracts for other BIA agencies in the Upper Missouri Valley. A lucrative new transportation contract for the Blackfeet Agency was a logical expansion of this relationship. During a competitive bidding war in March of 1859, Charles Chouteau and the AFC had secured the BIA contract to transport annuity goods to the new Blackfeet Agency at Fort Benton for that year and the following year, 1860.²⁷⁰

To beat out the competitors for the contract, Chouteau had agreed to use a steamboat to deliver the annuities to Fort Union, something that had never been done in the region. In the four years since the Lame Bull Treaty had been signed, the Blackfeet annuities had been brought upstream by keel-boat from Fort Union each year, a slow and laborious process. Chouteau had believed that a steamboat, specially designed for mountain rivers, could be used to do the job better in 1859.²⁷¹ In all, between 1852 and 1864, the American Fur Company would win the BIA contract for the Upper Missouri

²⁶⁹ Sunder, *The Fur Trade on the Upper Missouri*, 134.

²⁷⁰ Sunder, *The Fur Trade on the Upper Missouri*, 200-1.

²⁷¹ Sunder, *The Fur Trade on the Upper Missouri*, 201.

River agencies (Forts Union and Benton among them) every year but four.²⁷² They were the go-to company for government transportation throughout the period.

The movement of US Army supplies and soldiers was another important government contract that brought in more transportation revenue for the American Fur Company; it also further intertwined the AFC with American imperialist efforts in the region. Earlier in *Chippewa*'s journey, in the Dakotas, the steamer was employed in moving troops and materials for the Reynolds' expedition to survey and map what became Wyoming. Up until Fort Union, the *Chippewa* was also a logistical support vehicle for Reynolds by dropping off the expedition's resupply materials at Fort Union. After arriving at Fort MacKenzie in July of 1859, the *Chippewa* off-loaded its last military contract requirement for the season: supplies for the US Army's surveyors and soldiers blazing a trail between Fort Benton and Walla Walla, Washington Territory. This road-building mission was led by Captain John Mullan and the pathway he and his men carved through the northern Rocky Mountains would take his name, becoming known as the Mullan Road. Over the next decade and a half, the Mullan Road would tempt many miners and emigrants into the northern Rockies, expanding the Euro-

²⁷² Sunder, *The Fur Trade on the Upper Missouri*, 144.

American foothold in the region and straining the tenuous relationship with the Blackfoot tribes.²⁷³

Back Downstream

All of this cargo, 160-tons worth of trade-goods, Blackfoot treaty annuities, and US Army supplies, were off-loaded by the *Chippewa*'s crew at Old Fort MacKenzie. In the meantime, Chouteau, Alexander Culbertson, and John LaBarge had finished their overland journey to Fort Benton and spent the night there. Like Fort Union, Fort Benton also had herds of horses, cattle, and oxen, as well as pigs and mules, and even a cat.²⁷⁴ The following morning, after leaving instructions at the fort to chop and cord wood for the following steamboat season, Chouteau and LaBarge floated back down to the *Chippewa* in a small row-boat. They decided that there was still enough water in the river channel to continue upstream, but as there was no burnable wood left on the landscape and all of the cargo had already been unloaded, the point was moot. The river level had been falling for several days and the *Chippewa* needed to get back down through the rapids and shallows before seasonal low-water made them utterly unpassable. Thus, at 1:30pm on July 18th the *Chippewa* began its journey back to Fort Union and St.

²⁷³ Harkness, James. "Diary of James Harkness, of the firm La Barge, Harkness, and Company." *Contributions to the Historical Society of Montana, Vol. 2* (Helena: State Publishing Company, 1896), 351-360.

²⁷⁴ Sunder, *The Fur Trade on the Upper Missouri*, 135.

Louis far below. Their departure was accompanied by the sound of cannon fire. On-board, they had barely enough firewood to run their steam engine for an hour.²⁷⁵

On their way downstream to Fort Union, the *Chippewa* and her crew were nearly wrecked several times in the boulder strewn rapids of the Missouri Breaks region, emphasizing that the environmental dangers faced by the *Chippewa* had not yet ceased. They snapped some of the timbers in their hull while going through Dauphin's Rapid, challenging the integrity of their western-Pennsylvanian hardwood timbers.²⁷⁶ The 160-foot-long *Chippewa* was also spun around backwards in the rapids multiple times, the pilot and crew quickly learning about the challenging physics of running a unloaded sternwheeler through tumultuous rapids.²⁷⁷ They laboriously limped their way through sandbar-clogged river channels, continuing to burn wood and consume game animals from the shore.

Below the mouth of the Milk River, the *Chippewa* was boarded by a party of Assiniboine Indians who had been setting up camp on the prairie adjacent to the river. A group of the Assiniboine had followed the steamboat along the shore by horseback, hoping to get onboard. When the *Chippewa* got beached on a sandbar, "at least 20 of the Indians stripped[,] and in their breech cloths waded and swam to the boat, where they

²⁷⁵ Marsh, "Trip Up the Missouri River," 41-42; Weber, "Trip to Fort Benton," 16-17.

²⁷⁶ Weber, "Trip to Fort Benton," 16-17.

²⁷⁷ Weber, "Trip to Fort Benton," 16.

remained for half an hour.”²⁷⁸ While the diary observation of this incident does not mention what the Assiniboine *did* on the steamboat, or what drew them out there (other than human curiosity), their comfort-level with the vessels can be extrapolated from this scene. No violence or confrontation occurred. When the crew of the *Chippewa* finally managed to get themselves unstuck from the sandbar, they steamed the Assiniboine to the bank and “put them ashore” as they would have any other steamboat passengers.²⁷⁹

The next day, at 11 a.m. on the morning of July 26, the *Chippewa* finally reached Fort Union again. It had been three weeks since they had last departed.²⁸⁰ One glance at the shoreline near the fort told those onboard that their sister-ship, the *Spread Eagle*, had already departed for St. Louis in the hopes of beating the low-water. The level of the Missouri River was falling quickly and there was no time to delay. The *Chippewa* took on some supplies from the fort, ice being the most important so they could once again preserve meat shot by their hunters. This ice came in handy the next day when, 152-miles downstream of Fort Union, the *Chippewa* was flagged down by a large Gros Ventre camp who made signs for the steamer to pull over. The Gros Ventre had lots of meat to trade and knew the steamboat was a likely customer. Heading further downstream, the river continued to drop as the *Chippewa* slowly worked its way towards St. Louis. While further struggles still loomed ahead, the crew of the *Chippewa* had left the most difficult

²⁷⁸ Weber, “Trip to Fort Benton,” 18.

²⁷⁹ Weber, “Trip to Fort Benton,” 18.

²⁸⁰ Marsh, “Trip Up the Missouri River,” 44-45.

challenges behind them in the landscape of Montana. When the expedition reached St. Louis on August 16th, they off-loaded 4,000 packs of buffalo robes and a “forest of antlers” onto the St. Louis levee.²⁸¹

In 1860, the American Fur Company again sent steamboats to the Far Upper Missouri River with the goal of reaching Fort Benton. This time the AFC sent three vessels: the *Chippewa*, the *Spread Eagle*, and the newly purchased *Key West No. 2*.²⁸² Navigating most of the way together, this became one of the largest steamboat fleets to steam into the Far Upper Missouri River. Along with the trade goods, treaty annuities, and supplies for the Mullan Road, the steamboats also carried three-hundred officers and soldiers of the US Army. These men would march from Fort Benton, over the continental divide, and into Washington Territory. In the process, they would help to stomp-down the path that Captain Mullan had started carving out of the mountains the previous year.²⁸³ On July 2nd, the *Chippewa* and the *Key West No. 2* passed Old Fort MacKenzie and continued upriver to Fort Benton itself.²⁸⁴ In doing so, Fort Benton was officially established as the head of navigation on the Missouri River and would become the ultimate goal for steamers heading into the region. Even the *Spread Eagle* set a

²⁸¹ “Arrival of the Spread Eagle,” *St. Louis Daily Missouri Republican*, August 17, 1859; Sunder, *The Fur Trade on the Upper Missouri*, 207.

²⁸² Sunder, *The Fur Trade on the Upper Missouri*, 210.

²⁸³ Sunder, *The Fur Trade on the Upper Missouri*, 210-11.

²⁸⁴ Sunder, *The Fur Trade on the Upper Missouri*, 213.

record in 1860; in reaching a few miles above El Paso Point, the *Spread Eagle* navigated further up the Missouri River than any other side-wheeled steamboat had done before.²⁸⁵

The story of the steamboat *Chippewa* came to a novel end in the summer of 1861, while yet again attempting to reach Fort Benton. Heavily loaded with passengers and freight, the *Chippewa* was steaming upriver towards the mouth of Poplar River when a fire broke-out below deck.²⁸⁶ It was Sunday evening, supper-time, and some of the deckhands had used the opportunity to go into the hold and steal liquor; their mistake was bringing a lighted candle with them on the endeavor.²⁸⁷ The liquor had been stored near a large supply of gunpowder, somewhere between 25 and 300 kegs of gunpowder (according to different estimates).²⁸⁸ As smoke poured out of the hold, panic ensued. The boat was quickly piloted to shore, everyone jumped off with nothing but the clothing on their backs and their guns; they sought shelter in the safety of a cottonwood grove away from the river.²⁸⁹ With everyone safely off the vessel, it was cut lose (or burned lose) and drifted downriver a mile before exploding into “ten thousand atoms” and “sinking in about 20 feet of water.”²⁹⁰ The area where the accident occurred was known from then on as Disaster Bend. No one was killed but the majority of the cargo was

²⁸⁵ Sunder, *The Fur Trade on the Upper Missouri*, 212.

²⁸⁶ Sunder, *The Fur Trade on the Upper Missouri*, 226.

²⁸⁷ Chittenden, Hiram Martin. *History of Early Steamboat Navigation on the Missouri River; Life and Adventures of Joseph La Barge* (New York: F. P. Harper, 1903), 220-1.

²⁸⁸ Sunder, *The Fur Trade on the Upper Missouri*, 226.

²⁸⁹ Sunder, *The Fur Trade on the Upper Missouri*, 226.

²⁹⁰ Sunder, *The Fur Trade on the Upper Missouri*, 227.

destroyed; burnt blankets and boxes of food were found littering the shoreline in the area.²⁹¹ The Blackfeet would have to wait until springtime to receive the annuity supplies and products that had been guaranteed to them.²⁹² Captain Mullan, as well, would have to find a new source for essential supplies after the loss the *Chippewa*.

The 1859 American Fur Company expedition into the Far Upper Missouri River Valley was the start of the steamboat era in Montana, spurring continued expansion of Euro-American settlements in the region and changing the ways that Native peoples interacted with their surrounding environment. By moving trade goods and military supplies into Montana, steamboats in the fur trade created and further developed existing trade relationships in the area, making particular locations along the riverside socially important. They also changed the way that Euro-Americans related to the landscape, both in a broader sense of the possibilities they envisioned in the region and the ways that they interacted physically with their environment. Both Native Americans and Euro Americans modified their actions to meet the demands and opportunities presented by steamboats, tapping into the existing material and energy dynamics of the areas and, in the process, modifying their configuration. As the steamboat era develop into the 1860s, these labor, material, and energy relationships would continue to change as a result of

²⁹¹ Chittenden, *History of Early Steamboat Navigation on the Missouri River*, 221; Sunder, *The Fur Trade on the Upper Missouri*, 227.

²⁹² Sunder, *The Fur Trade on the Upper Missouri*, 228-9.

steamboat travel. The next chapter explores some of these changes in the early 1860s, as the fur trade era began to wane and the Montana Gold Rush began.

CHAPTER FIVE

1862 JAMES HARKNESS AND THE STEAMBOAT *EMILIE*

This chapter follows the journey of James Harkness onboard the steamboat *Emilie* in the summer of 1862. This narrative is based on Harkness' diary, which is held by the Montana Historical Society and was published as part of the second volume of *Contributions to the Historical Society of Montana*. It builds on experiences of the steamboat *Chippewa* from 1859, continuing to explore the relationship between human labor, steamboat technology, and the energy regimes of the environment in the early days of steamboat travel in the region. The Harkness story emphasizes changes to the Montana landscape and the dynamics of steamboat travel into Montana at the start of the Montana Gold Rush era. As the discovery of gold spurred extensive immigration to the area, steamboats in the region facilitated changes in the human-landscape relationship as the cultural focus slowly shifted away from furs and moved towards the mineral value of the environment. Harkness' journey highlights some of these transitions, including the importance of the Mullan Road to bring material goods from Fort Benton into the mining camps as well as how trade goods, and liquor, brought up by steamboats influenced the Blackfoot tribes and others in the area. The story also highlights how environmental realities, like the downstream energy of extreme high water, could change the relationship between steamboats and their surroundings. The high water made passage easier in some ways, allowing older steamboat technologies to overcome the rocks and snags of the river, while also changing the amount of danger onboard and increasing the energy inputs required from the crew and the landscape. The outbreak of plains violence

seen in the 1862 Sioux Uprising draws attention to the developing concept of the river as a safe space, while Harkness' use of un-motorized downstream travel highlights a trend that was common during the Gold Rush era: steamboat travel upstream and using the natural energy of the river current to carry miners back downstream.

It was a cool morning on May 18, 1862 when James Harkness stepped on board the steamboat *Emilie* in St. Joseph, Missouri. The Civil War had been raging for over a year, and St. Joseph showed the strain of conflict; one-third of the town had been demolished by the forces of war.²⁹³ In the early spring of 1862, Harkness had banded together with riverboat pilots John and Joseph LaBarge, brothers from St. Louis and former employees of the AFC, to form a new shipping and trading firm called LaBarge, Harkness, and Company. The goal was to form a business that could compete with the AFC, the dominant fur-trading and transportation company in the Upper Missouri River. Eugene Jaccard and William Galpin joined as members of the firm as well, bringing the "steamboat stock-holders" in the company to five.²⁹⁴ Each of the partners pitched in \$10,000 and together they purchased two steamboats: the shallow-draft, stern-wheeled mountain steamboat *Shreveport*, measuring 155-feet by 28-feet, and the deep-drafted

²⁹³ Sunder, *The Fur Trade on the Upper Missouri*, 237.

²⁹⁴ James Harkness, "Diary of James Harkness, of the First of LaBarge, Harkness and Company. St. Louis to Fort Benton by the Missouri River and to the Deer Lodge Valley and Return in 1862," *Contributions to the Historical Society of Montana* 2 (1896): 312.

Emilie, a larger and more traditional side-wheeled vessel measuring 225-feet by 32-feet.²⁹⁵

Before the opening of the steamboat season on the Missouri River, Harkness traveled to Washington, DC and acquired the requisite US government permits, including a trading license to conduct operations with Native American populations and insurance for their vessel and cargo from a pro-Union insurance agent.²⁹⁶ Harkness then purchased “a large stock of goods for the Indian and mining trade, a saw and a grist mill, and doors, windows, saws, axes, nails, etc., for building a store for the sale of the goods.”²⁹⁷ In doing so, Harkness and his business partners were facilitating the movement of capitalism into the northern Rocky Mountains, bringing new materials goods and an entrepreneurial zeal to the existent barter economy of the region that had been based around AFC operations.

In St. Louis there were 85 cabin passengers and 53 deckhands that boarded the *Emilie* for the journey up river. The deckhands loaded 300 tons of freight on board, including all the material items enumerated by Harkness.²⁹⁸ Aside from a few convalescent individuals heading up river for their health, the cabin passengers were mostly heading to the nascent and yet unproven gold mines of Montana and Idaho; they

²⁹⁵ Chittenden, *History of Early Steamboat Navigation*, 241; Way, *Way's Packet Directory*, 148, 425.

²⁹⁶ Sunder, *The Fur Trade on the Upper Missouri*, 234-5

²⁹⁷ Harkness, "Diary of James Harkness," 343.

²⁹⁸ Sunder, *The Fur Trade on the Upper Missouri*, 236-7.

each paid \$100 for their cabin berths.²⁹⁹ Harkness took the Hannibal and St. Joseph Railroad line across the state of Missouri to meet the *Emilie*. By connecting with steamboat routes, this rail connection was a critical transportation link in the movement of goods into Missouri and the riverports farther upstream. From St. Joseph, the LaBarge/Harkness expedition set out for the head of steamboat navigation, Fort Benton, in the far-western portion of the newly created Dakota Territory (formed the year before).³⁰⁰

Emigration to the Gold Fields of Idaho and Montana

While passing through Omaha, Harkness mentioned that the “emigration for the new gold mines has just commenced, fifteen hundred having already crossed [the river] at this point and a great many are on the road.”³⁰¹ The ‘new’ gold mines he was referring to were the diggings around the Salmon River Valley and the Bitterroot Mountains in what are today the states of Idaho and Montana. While gold mining was still thriving in Colorado in 1862 (the Pike’s Peak Gold Rush had only begun three years earlier), the first waves of gold-seeking argonauts exhausted much of the accessible surface gold near the front range of the Rocky Mountains in Colorado.³⁰² Rumors of surface gold in the

²⁹⁹ Sunder, *The Fur Trade on the Upper Missouri*, 236-7.

³⁰⁰ *An Act to provide a temporary Government for the Territory of Dakota, and to create the Office of Surveyor General therein*, (36th Congress, Chapter 85, March 2, 1861), US Congress,.

³⁰¹ Harkness, "Diary of James Harkness," 344.

³⁰² Lass, *A History of Steamboating on the Upper Missouri River*, 344.

streams north of the Oregon Trail, in the drainages of the Salmon River and the Bitterroot Mountains, soon drew miners who were ready to strike it rich at easy diggings. Many of the miners in the Colorado Gold Rush had used the natural transportation routes along the Arkansas and Platte River to cross the plains and reach the central Rocky Mountains.³⁰³ These migrations routes had partly mirrored the route taken by thousands who passed before them heading to Oregon and California. The wagon road leaving from Omaha, also known as the Mormon Road, was along the north shore of the Platte River.³⁰⁴

What made transportation to the gold fields of Montana different than earlier gold rushes were the physical characteristics of riverine transit route which provided access to the gold fields. For the Montana Gold Rush, the dynamics of the Missouri River itself, its sources and quantity of streamflow, as well as the angle of its riverbed, meant that steamboats could provide a new way to access the digging. Steamboats were never able to navigate in the waters of the Platte and Arkansas Rivers due to the incredibly shallow and braided nature of these streams.³⁰⁵ Instead, overland travelers along the Arkansas River (Santa Fe Trail, Southern Colorado Trail) and the Platte River (Oregon Trail, California Trail, Mormon Trail, Northern Colorado Trail) used the gently sloping landscapes of the river valleys to travel by horse, mule, and ox-wagon.³⁰⁶

³⁰³ West, *The Contested Plains*, 117-119.

³⁰⁴ Meldahl, Keith Heyer. *Hard Road West: History & Geology along the Gold Rush Trail* (Chicago: University of Chicago Press, 2007), 31.

³⁰⁵ Meldahl, *Hard Road West*, 33.

³⁰⁶ Meldahl, *Hard Road West*, 30-35.

In the energy dynamic of overland travel, it was livestock that did the hard work and expended energy to achieve travel, relying on grass and water availability.³⁰⁷ The horses and oxen were the energy converters, deriving their nutrient fuel from the prairie grasses, which in turn drew its energy from the soil and the sun. Even if steamboats could have navigated these flat rivers, the easy access to energy through grass and the easy upslope angle of the Platte Valley would likely have made steamboat use unnecessary.³⁰⁸ This was another element that distinguished the Upper Missouri River from the more southerly streams: in the Upper Missouri River Valley there were many badland ecosystems, dry and desolate environments where little grass or forage grew for herds of horses or oxen. There was no easy-going for overland travel in these badland regions.

While the Missouri River was also a shallow river as it coursed through the Great Plains, it drained a much larger swath of land than the Arkansas or Platte Rivers.³⁰⁹ Because of this difference, the Missouri River moved more water through the summer months and steamboats were able to carefully navigate through its winding channels and shifting sandbars. In this energy dynamic, the use of natural energy from grass was replaced with the use of firewood as an energy source. Trees derived their energy from the sun and the soil, just as grass did, but to access that energy and convert it into

³⁰⁷ Meldahl, *Hard Road West*, 31.

³⁰⁸ Meldahl, *Hard Road West*, 35; West, *Contested Plains*, 51.

³⁰⁹ Schneiders, *Big Sky Rivers*, 9.

mechanical work required a different type of energy converter: the steam engine.³¹⁰ By setting the wood on fire, steamboat engineers (literally the workers running the engines) accessed the potential energy stored within the carbon of the wood, using this stored energy to produce heat, boil water in the boilers, drive pistons, and achieve mechanical activity.³¹¹ In this way, the energy dynamic of steamboat propulsion, at least when using the main steam-engine and paddlewheel system, engaged a different form of energy conversion than earlier overland routes.

Gold in Them Hills

The gold deposits discovered in the mountainous riverbeds of Idaho and Montana had been created by the same geological forces responsible for the uplift of the Rocky Mountains and the creation of the black igneous rock intrusions along the White Cliffs of the Missouri River. Driven by subterranean pressures from underlying volcanic activity and plate tectonics, molten granite magma had intruded into existing limestone layers of southwestern Montana. As the intrusion of magma cooled and turned into granite (the most common igneous intrusion), a contact zone was created at the boundary between the limestone and the new granite. These contact zones often contained a plethora of

³¹⁰ Smil, *Energy and Civilization: A History*, 228-9.

³¹¹ Fiege, *The Republic of Nature*, 231.

different minerals; sometimes they even held veins of gold.³¹² The gold from these contact zones eventually eroded into smaller nuggets and flakes which were washed down into streambeds by the forces of rain and spring runoff.³¹³ Placer mining was the process of sifting through these alluvial deposits for the gold they contained.

Wood on the Plains

Finding sufficient fuel for the boilers was always an issue for steamboats navigating through the Great Plains and burning twenty-five cords of wood for every twenty-four hours of running.³¹⁴ (One cord of wood measured 4-ft x 4-ft x 8-ft, or 128-ft³, so 25 cords of timber would be 3,200-ft³. A modern equivalent would be filling four standard-sized garages, ie. 800 ft² total, wall-to-wall with wood stacked 4-feet high.) This amount of firewood was needed for every twenty-four hours of operation and processing that much wood was no small task. Above Omaha, Nebraska the crew had to start cutting firewood for the first time and could no longer pay for the labor of others.

Every day of the journey, the presence or absence of wood influenced the pace of progress and the type of labor required; the crew of the *Emilie* seized firewood whenever they could, toiling in difficult and dangerous conditions in their attempts. On the evening

³¹² Gates, Rick and Susie Gates, "UM Geologist Describes Where the Gold Comes From," University of Montana.

³¹³ Meldahl, *Hard Road West*, XV-XIX.

³¹⁴ Lass, *A History of Steamboating of the Upper Missouri River*, 13.

of May 24 the crew “cut wood by torchlight” and a few days later, when the ship was stuck on a sandbar, the workers were forced to collect driftwood for fuel.³¹⁵ Above Fort Pierre the *Emilie* had to pull over and “cut ash poles for wood, there being nothing else” and later that evening they were forced to “cut more wood in a quick-sand which was very hard for the men to work in.”³¹⁶ Over the next week Harkness mentions ‘wood’ in his journal ten times, commenting on the quality and quantity of the natural material.³¹⁷

Wood could mean the difference between life or death on steamboats, and the desperation for this material input drove steamboat crews to tear down abandoned villages and vacated structures to burn for fuel. This common practice, consuming the homes of deceased families and communities, was essentially a way of utilizing the energy and labor from earlier human lives to fuel industrial travel. On multiple occasions the crew of the *Emilie* took wood from abandoned forts and villages. This was true of the village at Fort Clark, upstream from present day Bismarck, North Dakota.

Discussing the former Native American settlement at Fort Clark, Harkness wrote that the village attached to the fort “was abandoned last fall by the Indians on account of smallpox breaking out, so we took as much wood out of the old lodges as we could carry.”³¹⁸ This practical dismantling of the village at Fort Clark took no interest in the

³¹⁵ Harkness, "Diary of James Harkness," 334.

³¹⁶ Harkness, "Diary of James Harkness," 345.

³¹⁷ Harkness, "Diary of James Harkness," 345-6.

³¹⁸ Harkness, "Diary of James Harkness," 346.

tragic history of disease at the site. People had been building villages along this part of the river for a thousand years, embracing the environmental elements of the river ecosystem and the surrounding valley as part of their lives.³¹⁹ This particular village was first built by the Mandan tribe in the summer of 1822 and in the 1830-31 the American Fur Company built Fort Clark there to better access the Mandan fur trade market. In June of 1837 the steamboat *St. Peter* arrived at the fort carrying smallpox and decimated the local Indigenous populations; those onboard the vessel possibly knew about the presence of the disease and spread it anyway.³²⁰ Ninety percent of the Mandan people at Fort Clark were killed by the disease. The few survivors fled the area and joined the Hidatsa tribe on the Knife River.³²¹ Some scholars and advocates argue that this large-scale infection was intentional on the part of the steamboat travelers.³²²

The following year, in 1838, the village was occupied by members of a neighboring tribe, the Arikara. The small pox had killed approximately fifty percent of the Arikara tribe in 1837, but they moved into the abandoned Mandan village to co-opt the Fort Clark fur trade and take over the Mandan's agricultural activities. The Arikara spent more than twenty years at the Fort Clark village, prospering but also suffering from further disease outbreaks. In 1851 there was an outbreak of cholera at the village and

³¹⁹ MacDonald, *Montana Before History*, 134.

³²⁰ Estes, *Our History Is the Future*, 86.

Fenn, *Encounters at the Heart of the World*, 322-323.

³²¹ "Fort Clark State Historic Site - History," *State Historical Society of North Dakota*.

³²² Fenn, *Encounters at the Heart of the World*, 423 fn 35.

five years later the Arikara suffered another smallpox epidemic. Despite these losses the Arikara continued to occupy the Fort Clark village during the summer months until early 1862 when they transitioned to trading near Fort Berthold for the summer.³²³ It was this most recent departure of the Arikara that Harkness was referring to when he talked about the village being “abandoned last fall by the Indians.”³²⁴ The village was built on a bluff of sandstone and still had “quite a number of cornfields” when Harkness passed.³²⁵ This common steamboat practice of scavenging from abandoned villages continued the next day when, after passengers “[k]illed four antelope in the river,” the *Emilie* again stopped “at an old village and took on a large lot of wood” to feed their hungry boiler-fires.³²⁶

Houses and villages, both Native and Euro-American, were an embodiment of human and natural energy.³²⁷ They required human labor to cut the trees and to build the structures. They were places of community and relationships, physical structures that were linked to humans by cultural connections. They held a residue of life and experience that was consumed by the relentless flames of steamboat boilers, propelling the vessels on the fumes of charred homes.³²⁸ While not quite the same as consuming the

³²³ "Fort Clark State Historic Site - History," *State Historical Society of North Dakota*.

³²⁴ Harkness, "Diary of James Harkness," 346.

³²⁵ Harkness, "Diary of James Harkness," 346.

³²⁶ Harkness, "Diary of James Harkness," 346.

³²⁷ Williams, *Americans and their Forests*, 72-74.

³²⁸ Harkness, "Diary of James Harkness," 346.

villages of the dead, similar experiences accompanied Euro-American settlers throughout the Great Plains. Vacated villages or abandoned homes provided temporary shelter, firewood, and building supplies for more than one weary Euro-American emigrant. This was a common experience from the many early German settlers in the Dakotas, who moved into existing Indigenous bark house, and for illegal settlers in Kansas, who striped Osage villages for the easy logs they provided.³²⁹

Game: Elk, Antelope, and Buffalo

The passengers of the *Emilie* spotted the first buffalo of the trip just below the Big Bend of the Missouri River, in present-day South Dakota. The following day they saw their first herd of elk and on June 3 Harkness shot an cow-elk.³³⁰ The *Emilie* plowed through a group of six buffalo swimming across the river the next morning; the steamboat's passengers gunned down all six from the deck of the boat.³³¹ This was a common practice on steamboats passing through the Great Plains, seen as a way to express one's masculinity and interact with the myth of the American West.³³² A passenger also caught a live two-year-old buffalo calf and took it on board.³³³ When

³²⁹ Fraser, Caroline. *Prairie Fires: The American Dreams of Laura Ingalls Wilder* (New York: Metropolitan Books, 2017), 13, 51-53.

³³⁰ Harkness, "Diary of James Harkness," 345.

³³¹ Harkness, "Diary of James Harkness," 346.

³³² Flores, *American Serengeti*, 6, 99-100; Schneiders, *Big Sky Rivers*, 174-5, 179.

³³³ Harkness, "Diary of James Harkness," 346.

another herd of buffalo was spotted the next day, it seems the passengers' enthusiasm for slaughtering buffalo was tempered and Harkness commented that "the novelty has worn off and they [the buffalo] passed without a shot."³³⁴

While shooting buffalo for sport from the deck of steamboats was certainly a destructive act, steamboats further contributed to the demise of the plains buffalo herds in more significant ways. They disturbed bison ecology and migration patterns, the noise of the steam whistle and guns driving them away from the river and also interfering with their calving and rutting seasons.³³⁵ By facilitating the transportation of buffalo robes from the northern plains to eastern markets, steamboats on the Missouri River also expedited the large scale slaughter of the northern herds by providing an easy form of transportation and essentially removing much of the overhead transportation cost of buffalo hunting.³³⁶ This was similar to the effect that the Union Pacific Railroad would have on the herds of the southern plains later in the decade.³³⁷

On June 5, near Fort Berthold in North Dakota, the *Emilie* caught-up with two other steamboats, the *Spread Eagle* and the *Key West*.³³⁸ Both vessels were owned by Charles Chouteau and the American Fur Company, the main competitor of the newly formed LaBarge, Harkness, and Co (as well as the former employer of several of the

³³⁴ Harkness, "Diary of James Harkness," 346.

³³⁵ Schneiders, *Big Sky Rivers*, 182.

³³⁶ Flores, *American Serengeti*, 99-100; Schneiders, *Big Sky Rivers*, 181.

³³⁷ Fiege, *The Republic of Nature*, 247-248.

³³⁸ Harkness, "Diary of James Harkness," 346.

business partners). Relations were civil enough until the following day, when an impromptu race developed between the AFC's *Spread Eagle* and the LaBarge/Harkness's *Emilie*. After some leapfrogging for the lead there was a collision and damage done to the *Emilie*'s guards. There were several guns pulled in the ensuing arguments. Joseph LaBarge, pilot of the *Emilie*, trained his rifle on the captain of the AFC's *Spread Eagle*, and some of the AFC deckhands responded in-kind, leading to a short standoff until the boats separated and the *Emilie* took the lead.³³⁹ There were no shots fired and Harkness was flippant about the incident, writing simply: "There was a good deal of angry talk."³⁴⁰

The level of the river became noticeably higher as the *Emilie* worked its way upstream. By June 7 Harkness commented: "We are meeting the June rise of the river."³⁴¹ The all-important June Rise was the Missouri River's second seasonal peak, a critical time of high water created from melting snow in the mountains which made steamboat travel on the Far Upper river possible.³⁴² The following day the *Emilie* passed the mouth of the Yellowstone River, with Harkness noting that the Yellowstone "looks much larger than the Missouri, being at flood heights."³⁴³ Stopping very briefly at Fort Union (they arrived at 7am and launched again at 8:30am), Harkness commented on

³³⁹ Sunder, *The Fur Trade on the Upper Missouri*, 232-3.

³⁴⁰ Harkness, "Diary of James Harkness," 347.

³⁴¹ Harkness, "Diary of James Harkness," 347.

³⁴² William E. Lass, *A History of Steamboating of the Upper Missouri River* (Lincoln, Nebraska: University of Nebraska Press, 1962, 1962), 3.

³⁴³ Harkness, "Diary of James Harkness," 347.

tension in the air, saying that the Native Americans around the fort (most likely Assiniboine) “do not go out of the fort without being well armed through fear of the Sioux.”³⁴⁴ After leaving Fort Union and the Yellowstone River behind, the Missouri River narrowed and was only “about two-thirds as wide as it is below the Yellowstone.”³⁴⁵ The *Emilie* and her crew were entering a new operating environment, one that would challenge the steamboat’s technology and the labors of her deckhands.

Far Upper Missouri River

The Missouri River continued to rise and the search for timber and game dominate the days. On June 11 Harkness noted: “All of the timber has been burned” around the mouth of the Milk River; that afternoon he shot his first buffalo.³⁴⁶ The next day Harkness’s mind was on the weather and its impact on the chances of reaching their destination: “It is raining hard, the river is rising rapidly, and the prospect of getting to Fort Benton is very cheering.”³⁴⁷ Things continued to look good that afternoon when they passed Round Butte, the “half way point between Fort Union and Fort Benton.”³⁴⁸ After wooding in a heavy rain near the Musselshell River, Harkness said “[t]he flood is at its height, and at some of the short bends the *Emilie* can make a rate of but four or five

³⁴⁴ Harkness, "Diary of James Harkness," 347.

³⁴⁵ Harkness, "Diary of James Harkness," 347.

³⁴⁶ Harkness, "Diary of James Harkness," 348.

³⁴⁷ Harkness, "Diary of James Harkness," 348.

³⁴⁸ Harkness, "Diary of James Harkness," 348.

miles (an hour). The river is too high for fishing.”³⁴⁹ The boat and crew continued to battle the fierce current the next morning, a foggy day with “a stiff current so strong that at some places the *Emilie* did not make an inch in fifteen minutes, and tar had to be burned in order to get up enough steam to move.”³⁵⁰ This use of tar was a way to add more combustible carbon to the fuel mixture, adding a concentrated energy source to augment the fire’s ability to produce heat and propel the mechanical engine.³⁵¹ That evening their time was once again consumed in the process of wooding, with Harkness lamenting that “a little before dark we came to a lot of dry spruce but it was a quarter of a mile from the river, and it was 9:30 before we got it in and had tied up for the night.”³⁵²

That same day the *Emilie* had crossed paths with a “government boat” heading downstream with “a number of Mullan’s men.”³⁵³ Between 1859 and 1861, Lt. John Mullan and his crew of soldier-laborers had built a rudimentary road connecting Fort Benton to Walla Walla, Washington.³⁵⁴ The steamboat *Chippewa* had helped to supply Mullan’s small workforce in 1859, and when the *Chippewa* burned near the mouth of the Poplar River in 1861 it was carrying much-needed supplies for the improvement and

³⁴⁹ Harkness, "Diary of James Harkness," 348.

³⁵⁰ Harkness, "Diary of James Harkness," 348.

³⁵¹ Hunter, *Steamboats on the Western Rivers*, 266.

³⁵² Harkness, "Diary of James Harkness," 348.

³⁵³ Harkness, "Diary of James Harkness," 348.

³⁵⁴ McDermott, Paul D. (ed). *The Mullan Road: Carving a Passage through the Frontier Northwest, 1859-62* (Missoula, Montana: Mountain Press Publishing, 2015), 73-90, 111-130.

maintenance of the Mullan Road.³⁵⁵ Every year the seasonal storms in the northern Rocky Mountains flooded and seriously damaged sections of the Mullan Road, but miners and emigrants were still traveling the route none the less. The drive for gold, land, or the vision of a better life pulled people to the region and gave them the fortitude to overcome the environmental challenges which complicated their route. While chatting with the men from Mullan's team, the *Emilie* learned that the company's other ship, the *Shreveport*, was ahead at the Dauphin's Rapids.³⁵⁶

The high water seemed to have made the Dauphin's Rapids easier to run; when the *Emilie* reached them the next morning, Harkness notes that the *Emilie* simply "got over without much trouble" and soon passed the mouth of the Judith River where they "overtook the *Shreveport* just below 'Drowned Men's Rapids' where she was 'wooding.'"³⁵⁷ The passengers from the two ships socialized with each other despite the fact that "the rain fell in torrents."³⁵⁸ Harkness's son and daughter were on board the *Shreveport* and he was happy to find them in good health.

That night, as the rain continued to fall, all of the passengers from the *Shreveport* were invited over to the *Emilie* to hear a sermon from the Rev. J. F. Bartlett.³⁵⁹ Bartlett

³⁵⁵ "Report of the Secretary of War," Message of the President of the United States to the Two Houses of Congress on the Commencement of the Second Session of the Thirty-Seventh Congress, Washington, D.C.: Government Printing Office, 1861.

³⁵⁶ Harkness, "Diary of James Harkness," 348.

³⁵⁷ Harkness, "Diary of James Harkness," 349.

³⁵⁸ Harkness, "Diary of James Harkness," 349.

³⁵⁹ Harkness, "Diary of James Harkness," 349.

was a minister from Wales who was traveling up to the mining country of Idaho and Montana to preach to the prospectors.³⁶⁰ This was further evidence of Christianizing missions in the American West being transported by steamboats; this was true both for those that ministered to communities of Native American and Euro-Americans. On the AFC steamboat the *Spread Eagle*, Charles Chouteau had even had a small chapel built on the boat to accommodate Pierre-Jean DeSmet.³⁶¹ DeSmet was a famous Jesuit missionary, and Chouteau's former religious mentor, who proselyted Native peoples across the northern Rocky Mountains and the Pacific Northwest.³⁶²

Fort Benton

When the *Emilie* arrived at the landing of Fort Benton, it became the first side-wheeled steamboat to do so, a new type of technological conquest.³⁶³ Harkness described the Fort Benton shoreline as “a prairie devoid of timber.”³⁶⁴ The *Emilie* had kept the *Shreveport* in tow since their reunion, but a sharp bend and a strong current near the fort's landing meant that the *Shreveport* had to be cut-loose and then winched up to the landing with a steam-powered capstan. This showed how, even in relatively calm sections

³⁶⁰ Sunder, *The Fur Trade on the Upper Missouri*, 237.

³⁶¹ Sunder, *The Fur Trade on the Upper Missouri*, 230.

³⁶² Carriker, Robert C. *Father Peter John De Smet: Jesuit in the West. Vol. 9* (Norman: University of Oklahoma Press, 1998), XV-XX.

³⁶³ Sunder, *The Fur Trade on the Upper Missouri*, 238.

³⁶⁴ Harkness, "Diary of James Harkness," 349.

of water, the natural conditions of the river still required the use of additional mechanical technology and human effort. There was no storage facility on the river shore at Fort Benton, and the AFC-owned Fort Benton was their competitor, so the *Emilie* and the *Shreveport* just unloaded their freight “with nothing but the prairie for a store-house.”³⁶⁵ Harkness noted that there was “no use for a saw mill at this point, there being no timber.”³⁶⁶

The Missouri River was still raging as the workers of LaBarge, Harkness, & Co unloaded their cargo of goods. Harkness said “the river [is] four feet higher than ever before known; it is a torrent from here to Fort Union. We were thirty-four days making the trip from port [St. Louis] to port [Fort Benton].”³⁶⁷ Other vessels were not so lucky for the season. On June 20 Harkness wrote: “The *Spread Eagle* came into view early; she had four men drowned while getting over the rapids.”³⁶⁸

Similar to the *Emilie*, the *Spread Eagle* was a large, deep-drafted side-wheeler; it had accompanied the *Chippewa* as far as Fort Union in 1859 and as far as the Milk River in 1860.³⁶⁹ The fact that boats like the *Emilie* and the *Spread Eagle* were even able to run up to Fort Benton spoke volumes about the quantity of water in the river in 1862, and how environmental conditions could sometimes make technological advancements moot.

³⁶⁵ Harkness, "Diary of James Harkness," 349.

³⁶⁶ Harkness, "Diary of James Harkness," 349.

³⁶⁷ Harkness, "Diary of James Harkness," 349.

³⁶⁸ Harkness, "Diary of James Harkness," 350.

³⁶⁹ Sunder, *The Fur Trade on the Upper Missouri*, 212.

However, the loss of four deck hands in the struggle to negotiate the high water rapids is testament to the dangers of the river and emphasized the different natural and technological variables that influenced the success or failure of passage through the rapids on the Far Upper Missouri.

When they landed in Fort Benton, the partners of LaBarge, Harkness, & Co began to trade their wares before they had even established a trading post, engaging in the local barter-capitalism. A chief of the Blackfeet tribe, a man named Little Dog, quickly sought out the officers of the steamboats to make friends and trading partners. Harkness wrote that Little Dog had “pledged his friendship to us in all things and sent out runners for his people to come in.”³⁷⁰ That evening, June 17, Harkness mentioned that they “[t]raded for a few robes in the evening” before having a meeting between all the business partners about where to set-up their official trading post.³⁷¹ They determined that the best location was “a mile and a half upstream from Fort Benton” and decided to name it Fort LaBarge. The partners set to work erecting a canvas tent the following morning, creating a temporary physical place to store their cargo and conduct business. In the same sentence where Harkness mentioned the canvas tent he noted that the “goods are selling fast.”³⁷²

Whereas Harkness had been conducting steady trade with the Blackfeet on the June 19 and 20, business slowed down on June 21 when he noted: “Indians drunk, in

³⁷⁰ Harkness, "Diary of James Harkness," 349.

³⁷¹ Harkness, "Diary of James Harkness," 349.

³⁷² Harkness, "Diary of James Harkness," 349.

consequence of which our trade was spoiled for the day.”³⁷³ From this statement two things can be inferred. First, that the majority of business that Harkness, LaBarge & Co. was conducting along the river at the time was not with miners but with Native Americans. Second, the abundance of liquor the day after the arrival of two American Fur Company boats leads to the conjecture that AFC vessels were still the ones responsible for the liquor supply in the area. Smuggling liquor into Indian territory had been standard operating procedure for the AFC operators since at least the 1840s as it was a way to pay for goods and services (furs and cut-wood) in a period without a cash economy in the area.³⁷⁴ These inferences can be further corroborated by anecdotal evidence of AFC activities, such as the accidental liquor fire onboard the *Chippewa* in 1861, and the fact that the *Spread Eagle* and *Key West* both did a “thriving business” trading whiskey for buffalo robes and the services of Native American women at Fort Berthold earlier in their 1862 journey.³⁷⁵ The British and French traders refused to trade liquor with the Native Americans, so the American traders were able to offer something that was unavailable from other sources by dealing in booze.³⁷⁶ In smuggling liquor up to Fort Benton, the AFC was violating the rules agreed to in the 1855 Lame Bull Treaty with the Blackfeet. The treaty had specified that the Blackfeet “desire[d] to exclude from

³⁷³ Harkness, "Diary of James Harkness," 350.

³⁷⁴ Sunder, *The Fur Trade on the Upper Missouri*, 9.

³⁷⁵ Sunder, *The Fur Trade on the Upper Missouri*, 232

³⁷⁶ Rorabaugh, *The Alcoholic Republic: An American Tradition*, 156-158.

their country the use of ardent spirits or other intoxicating liquor,” but this was only enforceable against Indians who brought liquor into the country, who would lose their portion of annuities as a result.³⁷⁷ The AFC paid no heed to these laws.

On June 28th Harkness laid out the footprint for the construction of Fort LaBarge with the help of family members. The fort was three hundred feet by two hundred feet, and Harkness took pride in mentioning how the women of the expedition contributed to the creation of this capitalist venture: “Madame LaBarge drove the first stake and my daughter, Margaret, the second.”³⁷⁸ When it was completed, there was a celebration that was blessed by the roving Rev. Bartlett “under the quiet stars, and amid the white tents of the gold seekers dotting the bottom-lands.”³⁷⁹

While James Harkness continued to conduct business on the riverside in the coming days, the rest of the Harkness and LaBarge families, went on a two-day trip to explore the area around Great Falls. The Jesuit missionary Jean-Pierre DeSmet and the Natawista Culbertson (Blackfeet wife of AFC agent Alexander Culbertson) joined them for the excursion. By 9 a.m. of the second day, Harkness’s daughter, Margaret, and Madam LaBarge were climbing out of their wagon, ‘the ambulance,’ and running to the first view point of the falls. In doing so, Harkness wrote that they were “the first white

³⁷⁷ “Blackfeet Treaty 1855,” *Washington History*.

³⁷⁸ Harkness, “Diary of James Harkness,” 350.

³⁷⁹ Sunder, *The Fur Trade on the Upper Missouri*, 239.

women to have seen the Great Falls of the Missouri.”³⁸⁰ During this journey, the traveling party had encountered a group of Blood Indians, a tribe within the greater Blackfeet Confederacy. Harkness described them as “relatives of Mrs. Culbertson [Natawista]” and continued that they “were friendly under the influence of Father DeSmet and Mrs. C[ulbertson].”³⁸¹ If they were Blood Indians, they could very well have been family members of Mrs. Culbertson, who was an important member of the tribe. She was also a regular steamboat traveler of the Far Upper Missouri River throughout her life.

Much like all of the influential Euro-American individuals who precipitated settler-colonialism in the region, Natawista utilized steamboats as a way to connect landscapes and bring distances closer together. She was present on board the steamboat *Chippewa* in 1859 when they had crested the rapids of the Far Upper Missouri for the first time, and her name appears throughout the steamboat record in Montana as diplomat, trader, and peace maker during time of intercultural dispute. Her experiences on board steamboats in Montana reveal an alternative narrative to the way that some Native Americans interacted with steamboat technology; she understood exactly what a steamboat was, a tool and a mode of travel that changed the relationship between time and space.

³⁸⁰ Harkness, "Diary of James Harkness," 350.

³⁸¹ Harkness, "Diary of James Harkness," 350.

Gold from the Diggings

In early July 1862, as Harkness was doing brisk business at his store, the rumors of successful gold mining began to filter back to the riverside from the mountains. On July 1 Harkness mentions “[g]ood reports from the mines” and the following day says “Wm. Terry brought in \$1,400 in gold dust from the mines.”³⁸² These could have likely been some of the earliest purchases made using gold dust as currency in Montana, an escalation of the existent barter economy, a vanguard and predecessor of encroaching cash economies. When miners coming from Deer Lodge arrived to buy supplies from Harkness they paid “12.50 (dollars or ounces) in gold dust.”³⁸³ The temptation of gold was also luring Harkness’s workers away. When he sent some laborers to chop wood on the morning of July 3, three of them deserted.³⁸⁴ They were most likely headed to try their luck at mining.

Harkness himself would soon be off to the mines as well, not to search for deserters, but loaded down with a wagon of goods to sell to prospectors. His experiences in the northern Rocky Mountains over the ensuing months provide an excellent lens through which to examine early changes to the Montana landscape being influenced by the steamboat trade. Harkness’ journey to Deer Lodge was essentially a sales trip and

³⁸² Harkness, "Diary of James Harkness," 351.

³⁸³ Harkness, "Diary of James Harkness," 351.

³⁸⁴ Harkness, "Diary of James Harkness," 351.

showed how material goods shipped upstream by steamboats found their way to different areas of the territory and affected the lives of individuals at the beginning of the Montana Gold Rush.

Unbeknownst to Harkness, while he had been climbing over dead-fall timber and fording creeks outside of the Deer Lodge Valley, other miners were starting to have more luck elsewhere in the region. On July 28 of 1862, prospectors eighty miles to the south, near what became the boom-town of Bannock in southwestern Montana, found deposits of placer gold in the streambed of Grasshopper Creek.³⁸⁵ With this discovery the Montana Gold Rush began in earnest and would continue for the next decade. In the coming years, further gold deposits in places like Alder Gulch (near Virginia City) and Last Chance Gulch (Helena) would further cement Montana as a gold rush destination. Individuals and groups of miners would leave their previous lives behind in the quest for the precious metal, and many of them would take the Missouri River steamboats route to their destination.³⁸⁶ Harkness was skeptical when reports started to filter back that new gold deposits had been found. He noted: "Miners are coming in with reports of leads having been discovered, but I have little faith in them."³⁸⁷ On August 18, he arrived back in the Fort Benton/Fort LaBarge area, tired and exhausted.

³⁸⁵ Gates, "UM Geologist Describes Where the Gold Comes From." ; Meldahl, *Hard Road West*, XVII-XVX.

³⁸⁶ Meldahl, *Hard Road West*, XIX.

³⁸⁷ Harkness, "Diary of James Harkness," 355.

Fort LaBarge and Back to the USA

Though his mind had turned to his home and family in St. Louis, Harkness still had more work to do in the Fort Benton area. He set to work milling timber for a mackinaw boat that he and his remaining men would ride downstream.³⁸⁸ The saw mill that Harkness and the LaBarges brought up the river had been assembled and Harkness used it to mill timber around Fort LaBarge into usable boards; this steam-powered saw mill, brought up by steamboat, was the first in Montana and it changed the way settlers in the area were able to utilize and engage with the timber resources around them.³⁸⁹ As the Montana Gold Rush proceeded through the decade, many miners mimicked Harkness's journey to and from Montana. They would use steamboat technology for their upstream journey, employing technology when traveling in opposition to the forces of the natural current, but floating back downstream in mackinaw barges and utilizing those same natural currents to speed them on to their destination.³⁹⁰

Harkness worked as fast as possible to mill his lumber and construct his new vessel; he was anxious to be homeward bound and away from the growing number of Native American that were congregating at Fort Benton. On August 20 he mentioned that the "Crow Indians are here and the Piegans [Blackfeet] [are] expected every hour,

³⁸⁸ Harkness, "Diary of James Harkness," 357.

³⁸⁹ Sunder, *The Fur Trade on the Upper Missouri*, 239.

³⁹⁰ Athearn, Robert G. *Forts of the Upper Missouri* (Nebraska: Univ. of Nebraska Press, 1972), 95.

and I have sent for the agent to prevent a fight.”³⁹¹ Two days later he noted: “The Indians are so troublesome that little can be done; made the chiefs appoint ‘soldiers’ to keep them away from the mill and the store.”³⁹² On the plus side, he mentions that he had “[t]raded for fifty [buffalo] robes today.”³⁹³ Not a bad day’s work after all.

On the morning of August 26, Harkness launched his homemade mackinaw boat, which he christened *Maggie*.³⁹⁴ It was forty feet long by seven and a half feet wide and made good time, though it “leak[ed] considerably.”³⁹⁵ Harkness and his workers continued down through the rapids and past the mouths of the Judith River and the Musselshell River. They hunted from the boat, fished for trout, got stuck on quicksand-like sandbars, and were cooked by the 100⁰ temperatures.³⁹⁶ When the *Maggie* reached Dauphan’s cabin they were disappointed to learn that their steamboat *Shreveport* had already headed downstream a week earlier. This news was complicated by the fact that the tribes of the Sioux Nation had just declared open war on the northern plains against all Euro-Americans and any other Native peoples who were allied against the Sioux. Indeed, the *Shreveport* had been attacked on its downstream voyage, and “only by

³⁹¹ Harkness, "Diary of James Harkness," 357.

³⁹² Harkness, "Diary of James Harkness," 357.

³⁹³ Harkness, "Diary of James Harkness," 357.

³⁹⁴ Harkness, "Diary of James Harkness," 357.

³⁹⁵ Harkness, "Diary of James Harkness," 357.

³⁹⁶ Harkness, "Diary of James Harkness," 358.

planking up the pilot house and forward quarters of the vessel was it able to fight its way through hostile country.”³⁹⁷

The Sioux Uprising of 1862 was also known as the Dakota Uprising or Little Crow’s War. It began as a confrontation between Santee Sioux and Euro-Americans that resulted in the deaths of 500 Euro-American men, women and children in Minnesota, before spreading to envelop the entire Sioux Nation and their allies.³⁹⁸ Confrontations raged in different locations, ravaging the northern plains and diverting US Army attention away from the Civil War.³⁹⁹ The AFC agent Alexander Culbertson, husband to Natawista, was at Dauphan’s cabin when Harkness arrived from Fort LaBarge. Although Culbertson and the AFC were business competitors of Harkness, Culbertson decided to join his own mackinaw with the *Maggie* on the downstream journey for safety in numbers. Harkness then “cleaned out the boat and prepared to cook on board as it will be dangerous to have fires on shore.”⁴⁰⁰ This comment is revelatory as it highlights how the influence of the human cultural conflict had altered the Euro-American relationship to the physical shore of the river; the water was a safer place to be and the human conflict had changed the perception the shore-space, altering the dangers to be found on the land.

³⁹⁷ Athearn, *Forts of the Upper Missouri*, 105.

³⁹⁸ Athearn, *Forts of the Upper Missouri*, 90-92.

³⁹⁹ Athearn, *Forts of the Upper Missouri*, 90-92.

⁴⁰⁰ Harkness, "Diary of James Harkness," 358.

The following afternoon, after a smooth morning of running downstream, the *Maggie* was forced to pull over “by a band of Assiniboines [allies of the Sioux] who had robbed a boat the day before; they were very warlike at first, but when they saw that we were well armed they turned it into a friendly visit. [We] gave them some presents and got away from them.”⁴⁰¹ A few hours later the *Maggie* was hit by a torrential storm which nearly wrecked the boat and forced all the crew members into the water to try to pull the boat with a rope, but to no avail. They spent the night wet and scared with “nothing to eat and no fire, as we were lying at a sand bank and afraid of Indians.”⁴⁰² In the morning there was no mention of hunting as “it would likely cost a man his scalp to try it.”⁴⁰³

It was evening time on September 8, around 10 p.m., when the *Maggie* finally reached Fort Union near the mouth of the Yellowstone River. If Harkness and his men hoped for rest, they were not in luck, because just as they arrived at Union, the guard at the fort gave the alarm for ‘Indians in sight.’ Harkness noted: “This caused a stampede from both of the [mackinaw] boats to the fort, which had been attacked by the Sioux only two days before, when all the horses, except one old, blind pony, were stolen. They [the men at Fort Union] dare not leave the fort for anything.”⁴⁰⁴

⁴⁰¹ Harkness, "Diary of James Harkness," 358.

⁴⁰² Harkness, "Diary of James Harkness," 358.

⁴⁰³ Harkness, "Diary of James Harkness," 358.

⁴⁰⁴ Harkness, "Diary of James Harkness," 358.

Two days later, at 5 a.m. on September 10th, Harkness and the *Maggie* set out from Fort Union before dawn, using the natural darkness to conceal their exit and slip by any observers. They had taken on two more men at Fort Union and acquired two more oars so that they could proceed quicker. The next day, out of fresh meat and tired of eating salt-pork, Harkness risked the danger of discovery and shot a buffalo. It turned out to be fortuitous because while loading the buffalo meat they were joined by another mackinaw boat coming downstream. Harkness described them, saying: "There were eleven men and one woman; they had been robbed by the same war party that boarded us, and were nearly out of everything."⁴⁰⁵ Safety in numbers was a key to river travel in times of trouble on the plains, whether by steamboat or mackinaw, and Harkness knew well that their odds had just improved. He boasted: "Four boats, containing forty-nine men and one woman, make a fleet that the Indians will not care to attack."⁴⁰⁶ Like any herd animal, the presence of companions brought comfort and peace of mind to these Euro-American travelers.

The remainder of Harkness's journey down the Missouri River was cold and nerve-wracking, but he and his crew came through in the end. Harkness and his crew on-board the mackinaw *Maggie* finally reached Omaha, Nebraska a little after dark on September 29. According to Harkness, they made the journey from Fort Benton in "just

⁴⁰⁵ Harkness, "Diary of James Harkness," 359.

⁴⁰⁶ Harkness, "Diary of James Harkness," 359.

thirty-three days and the distance twenty-two hundred and fifty miles, the quickest I know of by mackinaw.”⁴⁰⁷ He managed to sell the ‘*Maggie*’ for five dollars and on October 3 hopped onto a commercial steamboat, the *Robert Campbell*, which he rode down to Hannibal, Missouri.⁴⁰⁸ From there Harkness was able to get a train to his home of St. Louis. Arriving at 6 a.m. on October 6th, 1862, Harkness concluded his diary by stating: “Found my family all well. Thus ended my first trip down the Missouri River.”⁴⁰⁹

Harkness’s journey up and down the Missouri River in 1862 provides a window into the Montana landscape at the very beginning of the Montana Gold Rush. The relatively small amount of gold taken out of Montana in 1862 was enough to spark gold-fever and the following years brought more prospective miners up the Missouri River and into the mountainous landscape of Montana. The following year, 1863, saw another major gold strike at Alder Gulch and the town of Virginia City was born. Over the next three years the diggings at Alder Gulch alone would generate \$30 million worth of gold.⁴¹⁰ In 1864 still another rich vein of gold was found at Last Chance Gulch, and the town of Helena grew out of this mining community. All told, these gold mining regions

⁴⁰⁷ Harkness, "Diary of James Harkness," 360.

⁴⁰⁸ Harkness, "Diary of James Harkness," 360.

⁴⁰⁹ Harkness, "Diary of James Harkness," 360.

⁴¹⁰ Lass, *A History of Steamboating of the Upper Missouri River*, 32.

excavated thousands of pounds of gold that were transported downstream on Missouri River steamboats. The mines of Montana shipped \$8 million worth of gold down the Missouri River in 1863, and this increased to \$16 million the following year.⁴¹¹ The importance of the profits from these mining operations paved the way for the establishment of the Montana Territory in 1864.

The Dakota Uprising that broke out in 1862 also continued to have ramifications on the northern plains for the coming years. In the spring of 1863, the steamboats *Shreveport* and *Robert Campbell No. 2* were both attacked by Sioux war-parties while getting firewood downstream from Fort Union, near the Gros Ventre villages. In doing so the Sioux demonstrated their understanding of steamboat dynamics, attacking the steamers at their most vulnerable: on shore and exposed. The vessels fled downstream but the Sioux followed them by horseback for fifty miles before the steamboats got stuck on sandbars; the Sioux then demanded food, guns, and bullets.⁴¹² Natawista (Mrs. Culbertson) was on board for these eventful experiences too.

In an attempt to punish and subjugate the Sioux for these and other attacks, the US Army dispatched large military forces to the northern plains in both 1863 and 1864. Each of these military expeditions relied on steamboats for logistical support, with varying degrees of success. The low-water of 1863 meant that steamboat progress on the

⁴¹¹ Lass, *A History of Steamboating of the Upper Missouri River*, 32-33.

⁴¹² Athearn, *Forts of the Upper Missouri*, 104-5.

Missouri was very ponderous throughout the summer. The following year, 1864, General Sully engaged the services of 12 steamboats for logistical support in his campaign against the Sioux; in all, the boats transported 4,000 tons of construction materials to build new military forts in the region and thousands of US Army troops to man those new outposts.⁴¹³ But again there was no definitive battle and they were stuck trying desperately to get west to the Yellowstone River, where they had set a rendezvous with three of their steamboats. Trudging overland, and harassed by the Sioux forces from behind, Sully and his troopers finally reached the Yellowstone River near present-day Glendive.⁴¹⁴ Two of the steamboats were there, the first ever steamboats to navigate in the waters of the Yellowstone River. The third steamboat had snagged and sunk with a cargo of cornmeal near Fort Union. The two boats still afloat ferried the demoralized troops to the safety on the west shore of the Yellowstone.⁴¹⁵ No steamer would enter the waters of the Yellowstone River again until 1873.

The experiences of James Harkness in his 1862 journey to Fort Benton onboard the steamboat *Emilie* highlight many of the themes present throughout the steamboat era in Montana. Harkness and his business partners were in the region to trade both with Native Americans groups and Euro-American miners, emphasizing the changing trade

⁴¹³ Athearn, *Forts of the Upper Missouri*, 127.

⁴¹⁴ Athearn, *Forts of the Upper Missouri*, 134-141.

⁴¹⁵ Athearn, *Forts of the Upper Missouri*, 134-141.

dynamic in the region as the fur trade diminished and the Gold Rush era began. Harkness's company, along with the competing American Fur Company, brought trade goods into the region which changed the material culture for various communities. Native American groups like the Blackfeet came to rely more on the treaty annuities brought up by steamers as well as the trade goods and liquor they carried. The Mullan Road had been constructed with logistical support from steamboats and Harkness' experience shows how the road continued to be used by Euro-Americans as a migration route and as a way to transport material goods into the Montana hinterland. The heavy machinery like saw mills and quartz mills, which arrived on steamboats, changed the way that Euro-Americans processed the natural materials they harvested from the landscape and further cemented the Euro-American foothold in the region. When compared to the Blackfeet relationship with the steamers, the outbreak of the 1862 Sioux Uprising emphasized how different tribes interacted with steamboat travel in unique ways, the Sioux seeing steamboats (and un-motorized mackinaw boats) as a way to attack and thwart Euro-American encroachment. At the same time, the attacks by Sioux tribes solidified the idea of steamboats as safe-spaces; the vessels were perceived by Euro-American as safe places, seemingly removed from the terrestrial landscape and the dangers that the shore held. This perception was partially true, at best, as will be explored in the next chapter, which follows the journey of Serena Washburn and her family as they headed up the Missouri River to take up residence in the newly created Montana Territory.

CHAPTER SIX

1869 – SERENA WASHBURN AND FAMILY

This chapter follows the journey of Serena Washburn and her family as they traveled up the Missouri River in the summer of 1869. Washburn recounted her experiences in a typed, autobiographic memoir 35 years after her journey. Her text was reprinted in a two-part publication edited by Aubrey Haines in *Montana: The Magazine of Western History*. Washburn's experiences emphasize the changing dynamics of steamboat travel during the later years of the Montana Gold Rush and the early years of Montana Territory. It portrays the expansion of Euro-American settlement along the Missouri River in the Great Plains as well as the dramatic increase of steamboat technology use by women and families during the Montana Territorial period. The story shows how the movement of the conceptualized women's-sphere was influenced by the perception of steamboats as a Euro-American safe-space removed from the dangers of shore. Washburn's experiences with Native American woodhawks exemplify the changing ways that Native peoples related to steamboat travel and how they integrated steamboat labor into their seasonal rounds by harvesting timber and game for the vessels. The trend of fueling industrial machinery like steamboats off the energy of others by burning abandoned houses and villages is further explored, as is the way that steamboats could be hybridized with different landscape materials along the shores to repair damages caused by those same landscapes. The low-water experiences of the journey provide a contrast to the high-water travel in Harkness' journey, and the potentially violent conflict with tribes along the shoreline also emphasizes the changing relationship between

steamboats and Native peoples during the period. This experience shows how the Euro-Americans perception of steamboats as a safe-space did not always hold true.

The Montana Territory was created by President Abraham Lincoln on May 26, 1864, its boundaries carved from the cartographic dominion of Washington, Idaho, and Dakota Territories. Its establishment was the direct result of the Montana Gold Rush, which had begun in earnest in 1862 and drawn thousands of prospectors to the northern Rocky Mountains by horse, wagon, and steamboat. The first three capitals of the territory were all based around mining camps: the boom-town of Bannock became the first territorial capital of Montana (1864-1865), followed by Virginia City (1865-1875), and finally Helena (1875-1889, statehood). Throughout this territorial period, steamboats on the Missouri River continued to supply the mining camps and growing settlements via Fort Benton, the Mullan Road, and the various other overland cut-offs and short-cuts which connected the Missouri River to the mountains and valleys of Montana Territory.

Two years after the creation of Montana Territory, a new conflict broke out between the forces of the US Army and the Lakota Sioux, the hegemonic Native American power of the north-western plains. Red Cloud's War, which ran from 1866 to 1868, took place in the northern Rockies and plains, primarily in the grasslands of the Powder River country (a tributary of the Yellowstone River in present-day Wyoming) that had been included at Crow territory in the 1851 Fort Laramie Treaty. But Red Cloud (an Ogala Lakota Sioux leader), along with his Arapaho and Cheyenne allies, had taken possession of this land and were infuriated by the use of the Bozeman Trail through this

acquired territory. The Bozeman Trail was a northern overland route branching off of the Oregon Trail; it looped east around the Big Horn mountains, into the Yellowstone Valley, over today's Bozeman Pass, and into the town of Bozeman on the Gallatin River. This was the most direct overland route to the Montana gold mines and Red Cloud actively attacked migrants on this route, making travel in the region perilous for Euro-American. This territorial struggle persisted for two years until the Fort Laramie Treaty of 1868 generate a tentative peace by creating the Great Sioux Reservation, which encompassed a large swath of land including the Powder River drainage.

This development was important to the steamboat transportation industry in the northern plains and Rocky Mountains because it effectively cut-off use of the Bozeman Trail. Its closure left would-be emigrants from the east with two options into Montana: up the Missouri River by steamboat to Fort Benton, or a longer overland route all the way to southern Idaho and then north into Montana. The number of steamboat landings at Fort Benton responded accordingly and business was booming: mining materials, mercantile interests, land speculation, construction, annuity transportation, and the ever-valuable contracts with the US Army kept steamboat operating at full capacity. By being involved in all of these changing and developing facets of business and war in the northern plains, steamboat technologies continued to play a major role in shaping the human geographies in the region, influencing how people related with their surrounding environments.

Despite the potential violence on the migration routes to Montana, the territory's Euro-American population continued to grow through the late 1860s and the population of the once-male-dominated mining camps gradually evolved into villages and towns.

More Euro-American women and families arrived to settle permanently, many of them by steamboat up the Missouri River.⁴¹⁶ With these changes in population dynamics, the economic base of Montana Territory diversified and expanded to include supplies and services not just for miners but for the growing number of Euro-American settlers and permanent residents. By 1870, Helena was the largest town in Montana Territory with a population of 3,100. Growing communities like Virginia City (1870 pop: 867) and Bozeman (1870 pop: 574) had thriving businesses that included mercantile stores, breweries, and taverns.⁴¹⁷

With the founding of Montana Territory, the number of steamboat landings at Fort Benton steadily increased for the next five years. While there had been only between two to four steamboat landings per year at Fort Benton from 1860 to 1864 (and none in 1861), the numbers grew after territory-hood. The ending of the Civil War likely helped divert the cumulative attention of the United States back to the possibilities held in the landscapes of the American West too. In 1865 there were eight landings at Fort Benton and the number rapidly expanded over the next few years: 1866 had 31 landings, 1867 had 39 landings, and 1868 had 34 landings.⁴¹⁸ Business was booming for steamboat

⁴¹⁶ Lass, William E. *Navigating the Missouri: Steamboating on Nature's Highway, 1819-1935* (Norman, Okla.: Arthur H. Clark, 2008), 143; Schwantes, Carlos A. "The Steamboat and Stagecoach Era in Montana and the Northern West." *Montana: The Magazine of Western History* 49, no. 4 (1999): 2-15.

⁴¹⁷ "1870 Census" US Census Bureau.

⁴¹⁸ "Steamboat Arrivals at Fort Benton and Vicinity," *Contributions to the Historical Society of Montana*, Montana Historical Society, 317-320.

companies as their vessels plied the challenging riverscape of the Far Upper Missouri River and continued to learn its intricacies.

In the summer of 1869, a very low-water year, there would be a total of 24 steamboats that succeeded in overcoming the shallow rapids and landing at the Fort Benton shore. The environmental constraints put on steamboats during the 1869 season can be seen in the number of vessels that were unable to surmount Dauphin's Rapid and had to double-trip back down to this treacherous stretch of river. Of the 24 steamboats that landed at Fort Benton in 1869, 18 of them off-loaded half of their cargo on the shore at Dauphin's Rapid, ran up to Fort Benton with a light load, and then returned to Dauphin's Rapid for the second half of their cargo.⁴¹⁹ This loading and unloading of cargo, from steamboat to barge to shore, was labor and time intensive, but by double-tripping these vessels and their cargos were able to reach Fort Benton eventually. For the summer of 1869, those that made it to Fort Benton were the lucky ones. Many steamboats in Montana that summer could not even make it to real rapids and were instead stuck wallowing in the shallows of central Montana's badlands.

⁴¹⁹ "Steamboat Arrivals at Fort Benton and Vicinity"

It was May 26th, 1869 when Serena Washburn and her family loaded onto an ominously named steamboat, the *Submarine No. 13*, at the St. Louis river wharf.⁴²⁰ They planned to travel by river as far as Fort Benton, Montana and then take a wagon overland to Helena where the family would take up residence and Serena's husband, Henry Dana Washburn, would begin his new job as the Surveyor General of Montana Territory. Aside from her husband, Serena traveled their son Aquila and daughter Lelia, Serena's half-sister Thirza with her husband Nelse Anderson, and a family friend named Palmer Crabb.⁴²¹ Stepping onboard the *Submarine No. 13*, they anticipated that the river journey to Fort Benton would take about six weeks.⁴²²

Through the Great Plains

As the vessel passed through the plains, the passengers and crew were assaulted by early summer storms: thunder and lightning, wind and rain. Washburn wrote about one storm which blew down one of the ship's big smoke-stack chimneys, and another storm where "the wind gathered up the sand from the neighboring bank and showered it upon us, almost choking us, and we were swept into a whirlpool."⁴²³ Describing the

⁴²⁰ Washburn, Serena J. "Autobiography of Serena J. Washburn," 25. Typed reminiscence bound in green suede, fifty-four pages. Yellowstone National Park Research Library. [Cited hereafter as Washburn Autobiography]

⁴²¹ Haines, Aubrey L. "A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, part 1." *Montana; The Magazine of Western History* 49, no. 4 (1999), 20.

⁴²² Washburn, "Washburn Autobiography," 33.

⁴²³ Washburn, "Washburn Autobiography," 26

chaotic scenes, she continued: “The rocking and creaking of the boat in its circling race, the roaring of the storm, the falling rigging, the engines blowing off steam, men hurrying and racing to obey the mate’s orders, all made a deep impression on us.”⁴²⁴ The storm battered the steamboat and damaged their paddlewheel by blowing them into the shore.⁴²⁵ They had to harvest wood for the repair and then a skilled laborer, a carpenter, would have then fashioned the raw wood into a usable form and attached it to the paddlewheel. All of these steps necessary to repair the propulsion technology required time, materials and human energy; in effect, this addition of local timber to the steamboat helped make the vessel a hybrid of different material landscapes. The Washburn party was quickly learning that travel on the Missouri River was no easy feat due to environmental conditions, even in the shallower and flatter lower stretches of the river.

The *Submarine No. 13* spent two days in Sioux City before entering the shallow and sandy waters of the Upper Missouri River. At the time, Sioux City had about 3,000 residents and railroad tracks had first reached the town the previous year.⁴²⁶ This rail connectivity meant that Sioux City was now the highest railroad point along the Missouri River, further linking Sioux City to the thriving hubs of commerce at Chicago, and other industrialized cities further to the east. The year 1869, when Serena Washburn head up

⁴²⁴ Washburn, “Washburn Autobiography,” 26.

⁴²⁵ Washburn, “Washburn Autobiography,” 26.

⁴²⁶ Haines, “A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, part 1,” 23 fn 27 ; Lass, William E. *Navigating the Missouri: Steamboating on Nature's Highway*, 57.

the Missouri River, was the first year that all goods transported for the US Army and the Bureau of Indian Affairs traveled to Sioux City by rail and were then loaded onto steamers for transport into Dakota and Montana Territories.⁴²⁷ In this way, the expansion of railroad networks changed the dynamics of material transportation up the Far Upper Missouri. While the pattern was still railroad-steamboat-wagon, the length of the railroad portion expanded with the tracks and the steamboat portion was shortened by almost a thousand river-miles.⁴²⁸

Above Sioux City, the *Submarine No 13*. and her crew soon found that the river was unseasonably shallow, making upriver progress difficult, time consuming, and labor intensive. Though they had started from St. Louis in late May, the seasonal June Rise high-water event failed to materialized and the fickle currents of the Missouri River barely provided sufficient water for steamboats to float. Serena wrote: “From [Sioux City] onward, our journey is well punctuated with stops on sand-bars. We broke our rudder twice the first day out, then broke our pilot wheel [paddle wheel].”⁴²⁹ These repairs all took time and energy, as well as the further integration of raw materials from the landscape.

As the *Submarine No. 13* approached the Yankton Sioux Agency, near present-day Yankton, South Dakota, the vessel managed to get stuck on one sandbar for twenty-

⁴²⁷ Lass, *Navigating the Missouri: Steamboating on Nature's Highway, 1819-1935*, 64.

⁴²⁸ Lass, *Navigating the Missouri: Steamboating on Nature's Highway*, 57.

⁴²⁹ Washburn, “Washburn Autobiography,” 27.

four hours straight, and was only able to get off with the use of spars.⁴³⁰ Nearly all steamboats operating in these waters carried telephone-pole-sized spars at the bow of the vessel so the boats could stilt-walk over sandbars with the use auxiliary mechanical technologies (steam-capstans) and stout rope. The deep draft a vessel had, the more often it would bottom-out and require the spars. It was said that a steamboat which “cannot, on occasion, climb a steep clay bank, go across a cornfield and corner a river that is trying to get away, has little excuse for trying the navigate the Missouri.”⁴³¹

One of times when the *Submarine No. 13* stopped for the crew to mend their broken paddlewheel, Washburn mentioned the necessity of getting wood for the journey: “How the chips flew! There were very few opportunities now to buy wood.”⁴³² The presence of timber dictated the vessel’s schedule each day, with Washburn noting: “We usually have to stop about three hour a day now to cut wood.”⁴³³ They had left most of the riverside woodlots behind and now had to fend for themselves in attaining wood for fuel. A few days later, luck was in the *Submarine No. 13*’s favor when the crew found trees that had already been cut down by local beavers.⁴³⁴ The natural wood-cutting instincts of the beaver population, the landscape’s original lumberjack, were essentially

⁴³⁰ Washburn, “Washburn Autobiography,” 27.

⁴³¹ Corbin, Annalies. *The Life and times of the Steamboat Red Cloud, Or, How Merchants, Mounties, and the Missouri Transformed the West* (College Station: Texas A&M University Press, 2006), 13.

⁴³² Washburn, “Washburn Autobiography,” 27.

⁴³³ Washburn, “Washburn Autobiography,” 29.

⁴³⁴ Washburn, “Washburn Autobiography,” 29.

assisting the deck crew by providing the physical labor to fell trees, saving the human workers much time and energy. This is slightly ironic, as the thick fur of beaver pelts were one of the first drivers of steamboat to the region; now the beavers were helping steamboats acquire their essential fuel for locomotion. They were an element of the natural environment helping humans to harvest another natural element of the landscape.

Like many steamboats before them, the *Submarine No. 13* also succumbed to burning abandoned Native American villages to feed their boiler-fires. Washburn mentioned that “[o]nce we wooded where Indians had wintered. We used the poles for wood from which the ponies had gnawed the bark during the winter.”⁴³⁵ This had been a common practice for feeding horses on the harsh northern plains since at least the early 19th century.⁴³⁶ She does not specify which tribe the village had belonged to, though in that stretch of river they were likely Dakota or Yanktonais Sioux. Washburn also does not distinguish the village as a true ‘winter camp,’ where the Native Americans would be returning after a summer of hunting buffalo, or if it was another village decimated by death and disease. Another possibility was that the villagers left the site when they agreed to relocate to reservation lands in the Fort Laramie Treaty of 1868.

⁴³⁵ Washburn, “Washburn Autobiography,” 27.

⁴³⁶ Wood, *Missing the Boat*, 237.

Violence on the Northern Plains

Aside from the dangers of disease, there were the forces warfare on the Great Plains as Serena Washburn steamed through in the summer of 1869. Death was a presence at locations where the *Submarine No. 13* wooded and resupplied. Between Sioux City and Yankton, South Dakota, Washburn mentioned purchasing wood at an old homestead where “only a few years before had been a happy home.”⁴³⁷ The crew of the *Submarine No. 13* bought firewood from a Euro-American woodhawk there who told Serena of his story, which she related in her journal: “While the parents were away for supplies, the Indians entered and killed all their five children. The grief stricken mother soon joined her little ones and the father said he only lived to shoot the red man.”⁴³⁸ This was a homesteading family that had suffered from the tumult which began with the 1862 Dakota Uprising on the northern plains and the tension that continued through Red Cloud’s War between 1866 and 1868.

While the Fort Laramie Treaty of 1868 had officially ended Red Cloud’s War, the danger of violent confrontations between steamboats and plains tribes had not disappeared. Because steamboats held the role of both military vanguard and logistical support tool, assaults on vessels were a pragmatic way for Sioux tribes and their allies to inhibit the western spread of Euro-American occupation. Although the creation of

⁴³⁷ Washburn, “Washburn Autobiography,” 27.

⁴³⁸ Washburn, “Washburn Autobiography,” 27.

reservations by the 1868 Fort Laramie Treaty attempted to keep antagonistic tribal members away from each other, and away from migrant Euro-Americans, there were many bands of Sioux tribes that refused to give up their traditional life ways and continued to violently oppose the violation of Sioux territories by the forces of American imperialism. Steamboats traveling up the river were prime targets for this animosity.

After passing the mouth of the Big Sioux River and entering into Dakota Territory in June of 1869, Serena Washburn noted that the rumors of violent confrontation with Native American tribes were once again running rampant. Serena described the preparations made for potential attack and how material supplies intended for the soldiers at US Army posts were instead used as fortification materials for the passenger of the steamboat. She recorded how: “The pilot house and windows are all boarded up with heavy timber [...] Our boat was loaded with sacks of shelled corn for the government. These sacks were brought up and a complete wall built around the deck. The women and children were told to stay in the saloon and get behind the trunks for safety.”⁴³⁹

Armoring the pilothouse with dense materials like hardwood or old boiler iron had long been common practice, especially in the northern plains where tribes of Lakota and Dakota resented the encroachment of steamboats in the territory; these Sioux groups often had sufficient strength of arms to actively resist the intrusions. As more families began to make the journey upriver to Montana in this time of intercultural conflict,

⁴³⁹ Washburn, “Washburn Autobiography,” 28.

riverboat captains took more serious precautions to protect the entire boat and its valuable human cargo.

Wood and Native American Woodhawks

There was no need for the steamboat to take a martial stance the following day, when the *Submarine No 13* encountered Native Americans on the side of the river. Their interaction was one of business not confrontation. At the time, Euro-American lumberjacks, known as woodhawks, operated primarily downstream from Fort Randall, on the South Dakota/Nebraska border; they could often get \$8.00 per cord for the wood they cut and sold.⁴⁴⁰ But having left the woodlots of Euro-Americans behind, entrepreneurial Native Americans took up the axe to harvest firewood for steamboats. For the Native Americans, this woodhawk work was a cultural change, a augmentation of their seasonal round which had formally involved hunting buffalo on the plains during the summer. Instead, the creation of reservations limited where these tribes could hunt and spurred them to integrate other forms of subsistence labor into their seasonal round. This was a sign of growing dependency on Euro-American market forces for subsistence of these Native Americans, further compounding the effects of disease and dispossession of land.⁴⁴¹ Chopping firewood and selling it to passing steamboats was a way to generate

⁴⁴⁰ Haines, "A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, part 1," 24, fn 30.

⁴⁴¹ White, Richard. *The Roots of Dependency*, 317.

income for the tribal members, and also likely influenced the further integration of cash-currency economy into Native communities.

No matter their background, working as a woodhawk was profitable business because steamboats consumed an average of twenty-five cords of hardwood, or thirty cords of cottonwood, for every twenty-four hours of operation.⁴⁴² Cottonwood, while officially a hardwood, grows much quicker than most other hardwoods and is less dense as a result. This lack of density means that cottonwood also contains less concentrated-energy in its timber. Every cord of cottonwood (4'x4'x8') only has 16.8 million British Thermal Units (BTUs), a unit of heat-energy where one BTU is the amount of energy needed to raise the temperature of one pound of water by one degree Fahrenheit.⁴⁴³ Cottonwood trees have the lowest BTU rating of all trees in the American West, hard or soft wood, making it the wood-fuel with the weakest ability to create steam. Different varieties of oak trees have BTU ratings that range from 27.4 to 36.6 million BTUs per cord (or about 86% energy by volume); even all the western softwood trees like firs, pines, cedars, and spruces have between 20 to 26.5 million BTUs per cord (70-77% energy by volume). Sugar pine is the one exception to this, but at 19.6 million BTUs per cord, sugar pine is still a better option than cottonwood as a source of heat.⁴⁴⁴

⁴⁴² Hanson, Joseph Mills. *The Conquest of the Missouri: Being the Story of the Life and Exploits of Captain Grant Marsh* (Pelican Publishing, 1918), 115-6.

⁴⁴³ Smil, *Energy and Civilization: A History*, 10; "Firewood BTU Ratings," World Forest Industries (2019).

⁴⁴⁴ Williams, *Americans and their forests: a historical geography*, 77; "Firewood BTU Ratings," World Forest Industries (2019).

Serena Washburn's observation of the Native American woodhawks also noted a gendered division of labor for their work. When the *Submarine No. 13* stopped to purchase wood that had been chopped and dried on the side of the river, Washburn described how "The squaws cut and cord the wood. The bucks sell it."⁴⁴⁵ In some ways this division echoed Native traditions of gendered work on the plains while hunting and processing buffalo. In many Native American plains cultures the work of hunting and killing buffalo traditionally was done by the men of the tribe, while the women did the tedious and labor-intensive work of cleaning the fat and meat from the hides and curing them. It seems that, in some ways, this gendered dynamic transferred to Indigenous woodhawking work. The women did the hard physical work of cutting and stacking the wood, while the men simply did the haggling and bargaining with customers.⁴⁴⁶

Dynamics of the Northern Plains

Continuing upriver, the *Submarine No. 13* encountered more sandbars, more military forts, and more Native American villages. They spent the night stuck on a sandbar near Old Fort George and reached the Cheyenne Agency, where Washburn noted that there was "quite a village of Indian tepees, hand-painted, fine ponies, many dogs and children, and fifteen hundred Indians were here."⁴⁴⁷ The following day they made no

⁴⁴⁵ Washburn, "Washburn Autobiography," 29.

⁴⁴⁶ Schneiders, *Big Sky Rivers*, 173-175.

⁴⁴⁷ Washburn, "Washburn Autobiography," 27-29.

progress because of fog and rain, an indication of the way humidity and water vapor in the air could inhibit a steamboat's progress. The crew and passengers had hoped that the rain would at least add some water to the river channel, but when they awoke the next morning the river had dropped a further six inches overnight.⁴⁴⁸ Due to the daunting low-water conditions, the *Submarine No. 13* soon had to off-load some of its cargo to shore and resort to double-tripping. This meant that the steamboat crew transferred some of their cargo into a mackinaw barge (a 'lighter') and then either tow the mackinaw upstream through a shallow section by hand, or deposited the cargo on shore for the steamboat to return for on a second trip, hence double-tripping.⁴⁴⁹ This was a common low-water practice on western rivers, and was often performed throughout the steamboat season on the perpetually shallow Missouri River.

Aside from the physical labor required to transfer the cargo from boat to mackinaw to shore (repeated until the vessel was buoyant enough to pass over an obstacle), there was also the complicating physical danger for crew members on shore. Away from the safe-space of the boat, work crews on shore were vulnerable to assault from Native American forces, especially because of the valuable nature of the material cargo they were transferring. When Serena spotted the cargo on the shore of the river from another double-tripping vessel, the *Sully*, she noticed that there two crew members

⁴⁴⁸ Washburn, "Washburn Autobiography," 28.

⁴⁴⁹ Lass, *A History of Steamboating of the Upper Missouri River*, 13.

of that boat standing guard over the cache of goods.⁴⁵⁰ This was doubtlessly an unnerving position for those men who held the guard duty; Sioux bands opposed to Euro-American encroachment would have seen these weakly-guarded materials as a strong temptation, a way to access the wealth and resources embodied by steamboats.

On June 28 the Submarine No. 13 reached Fort Buford, the US Army fort which had replaced Fort Union near mouth of the Yellowstone. The old AFC-owned Fort Union had been falling apart by the early 1860s and 1864 the US Army's General Sully plotted out a new military fort near the mouth of the Yellowstone, one that would be more easy to access from steamboat.⁴⁵¹ In 1865 the Charles Chouteau officially sold all of the AFC's Upper Missouri River holdings, including Fort Union and Fort Benton.⁴⁵² The US Army soldiers constructed the new Fort Buford throughout the summer and autumn months of 1866.⁴⁵³ At Fort Buford, Serena Washburn and her party transferred to a different vessel, the steamboat *Lacon*, because the *Submarine No. 13* was too deep-drafted to make the shallow trip to Fort Benton. It was almost July and the river level was already very low for the season.⁴⁵⁴

⁴⁵⁰ Washburn, "Washburn Autobiography,"30.

⁴⁵¹ Sunder, *The Fur Trade on the Upper Missouri*, 143.

⁴⁵² Sunder, *The Fur Trade on the Upper Missouri*, 262.

⁴⁵³ Sunder, *The Fur Trade on the Upper Missouri*, 232.

⁴⁵⁴ Washburn, "Washburn Autobiography,"29.

Far Upper Missouri River

Above the Yellowstone River, the *Lacon* passed other steamers struggling to negotiate the low water; the *Lacon* was forced to double-trip again. On July 9 Washburn wrote: “No water, and had to unload freight and double trip it. Run, or rather sparred, three miles against a stiff breeze, then had to lay by for half a day.”⁴⁵⁵ Nature was not facilitating their upstream progress, and as a result the crew member of the *Lacon* were laboring hard and using auxiliary technologies (spars and steam-capstans). This was a way to augment the mechanical work of the main paddlewheel and counteract the effects of the low-water environment by raising the boat out of the water with the spars.

On July 13 the *Lacon* got stuck on the same sandbar as another steamboat, the *Farragut*, and both vessels had to unload their cargo on the bar to lighten their draft. Washburn and the other women socialized in the middle of the river, with Washburn noting: “We visited with the ladies on the other boat and compared notes on a trip up the river in low water.”⁴⁵⁶ This image of upper-class Euro-American women socializing on a sandbar in the midst of the Missouri River is a superb example of how the 19th century ‘women’s sphere’ migrated up Montana’s Missouri River borderland and found its way to Fort Benton and the growing hinterland communities beyond. While steamboats were not the only mode of transportation into the Montana Territory, it was the way of

⁴⁵⁵ Washburn, “Washburn Autobiography,” 30.

⁴⁵⁶ Washburn, “Washburn Autobiography,” 31.

traveling chosen by the majority of women and families who emigrated to Montana during the territorial period due to its relative safety and comfort.⁴⁵⁷

Stopped by Low-Water & Turning Around

As the days slowly passed, the low-water of the Far Upper Missouri River did not abate. The *Lacon* struggled with sandbars continually; the crew and auxiliary technologies laboring nearly continuously, mile after tedious mile. At one point, about 170 miles above the mouth of the Milk River, the boat was stuck on the same sandbar for 36 hours. When the crew finally got them off the sandbar, the vessel quickly got stuck again.⁴⁵⁸ The captain sent out crew members to find a deeper channel in the river but the deepest route they could find only held 2 feet 3 inches of water.⁴⁵⁹ They were fighting a losing battle against the elements and the officers of the *Lacon* knew they would not make it to Fort Benton. When the steamboat *Farragut* appeared again, Serena and her family tried to hitch a ride but were rebuked by the captain who said: “No. We have one hundred and fifty passengers, many of them women and children, and our provisions are almost gone. We simply cannot take anyone.”⁴⁶⁰

⁴⁵⁷ Athearn, *Forts of the Upper Missouri*, 85.

⁴⁵⁸ Washburn, “Washburn Autobiography,” 32.

⁴⁵⁹ Washburn, “Washburn Autobiography,” 32.

⁴⁶⁰ Washburn, “Washburn Autobiography,” 34.

Washburn was obviously disheartened by the news, and frustrated by their predicament. She and her fellow passengers had come to expect relatively prompt timing and efficiency from the experience of steamboat travel on other rivers, but the Missouri River presented a different environmental dynamic that challenged their assumptions. While these passengers believed that steamboat technology had effectively shortened the time and distance between the USA-proper and its northern territories, environmental factors now threatened their belief in the powers of mechanical technology. Washburn lamented: "The captain says we must return, for we cannot go any farther. We have been in Montana Territory for three weeks and on the river eleven weeks, and we had expected to make the entire trip to Fort Benton in six weeks."⁴⁶¹ Washburn's exasperation at their situation and the radical difference between expected timing and the reality on the river highlights how the human concept of time could be deeply influenced by the interaction of nature and technology.

On July 15, the steamboat *Lacon* stopped its upstream progress, turned around, and started back downstream having failed to reach Fort Benton. The vessel had made it 400-miles above Fort Buford and the mouth of the Yellowstone River, yet it was still at least 387-miles from the stated destination of Fort Benton.⁴⁶² The boat was only 64-miles below the mouth of the Musselshell River, a place where they had hopped they

⁴⁶¹ Washburn, "Washburn Autobiography," 33.

⁴⁶² Haines, "A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, part 1," 28 fn 58.

could get a ox-wagon to Fort Benton, but the conditions of the river meant that even this secondary alternative was not an option.⁴⁶³ As the steamboat pilot turned the vessel around, the passengers on board broke into song, with Serena noting: “So we turn our face homeward and try to sing *Homeward Bound*, but there is not much joy in the sound.”⁴⁶⁴

The *Lacon* was far from the only steamboat to struggle mightily in the Far Upper Missouri River in the summer of 1869. Serena and her fellow passengers had witnessed many steamboats double-tripping, but they did not see how many more vessels were forced to double-trip through the rapids further upstream. During the 1869 season there were a total of 24 steamboats that managed to reach Fort Benton, but of those 24 vessels, there were 18 that offloaded cargo at the crux-point of Dauphin’s Rapid and had to backtrack from Fort Benton to get the second half of their loads.⁴⁶⁵ Other vessels got stuck even lower, such as the *Tempest*, which got stranded at Cow Island (at the transition from the Sandy River dynamic to the steeper Rocky River); it spent most of the summer beached at Cow Island until its cargo, passengers, and crew were transferred to another steamboat coming down from Fort Benton to help.⁴⁶⁶

⁴⁶³ Washburn, “Washburn Autobiography,” 33.

⁴⁶⁴ Washburn, “Washburn Autobiography,” 34.

⁴⁶⁵ “Steamboat Arrivals at Fort Benton and Vicinity.”

⁴⁶⁶ Haines, “A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, part 1,” 28, fn 55.

Running low on food and helpless against the low-water, the *Lacon* ventured back downstream. The passengers and crew continued to see large herds of buffalo on shore and game meat kept them in protein. But foodstuffs that the landscape could not provide were getting desperately low. Serena mentioned “We have had no meat for some time except as we killed it. For three weeks we have been dependent upon our huntsmen.” She goes on to describe the remaining food stored on board, saying: “Thirza and I counted the sacks of flour in the store room and the steward said there was just enough to last nine days, and very little dried fruit. What will we do!”⁴⁶⁷

Perilous Downstream Journey

Other steamboats passed the slow-moving *Lacon* as they headed back downstream, all trying desperately to get out of the shallow upper river. From one of these boats, Washburn and her fellow passengers learned that there had been a “great battle with the Indians” near the mouth of the Musselshell river, 200 miles upstream.⁴⁶⁸ She continued that the defeated Indians were “making travel very uncertain.”⁴⁶⁹ The battle she referred to could have been one of two conflict between the US Army and Sioux fighters that had occurred earlier in the summer of 1869. In the springtime there was a battle on the Musselshell River between Sioux warriors and part of the US Army’s

⁴⁶⁷ Washburn, “Washburn Autobiography,” 34.

⁴⁶⁸ Washburn, “Washburn Autobiography,” 33.

⁴⁶⁹ Washburn, “Washburn Autobiography,” 33.

13th Calvary at Camp Cooke. Later in the summer a group of 100 Sioux fought with US soldiers but were turned back when the Army units fired on them with howitzer rounds, a type of field artillery piece often used with exploding rounds.⁴⁷⁰ Both of these confrontations would certainly have contributed to the Sioux tribes' animosity towards any Euro-American trespassers and the steamboats they used to invade.

If trouble arose with the Sioux, or any other Native Americans, the *Lacon* would struggle to defend itself. Washburn wrote: "We cannot fight for we have nothing with which to fight. The government does not allow boats above Fort Berthold without taking on guns and good ones too, but our Captain was careless and permitted the passengers to hunt and use the ammunition and now there were not a dozen loads left."⁴⁷¹ They continued downstream with apprehension, knowing that they lacked the martial material necessary to defend themselves: cartridges for their firearms. By carelessly using all of the ammunition for sport and to acquire meat, the passengers and hunters had inadvertently comprised the safety of the vessel. Without strength of arms, and plagued by continual low-water challenges which exposed them further, the voyage through the dynamic human geography of the norther plains became significantly more perilous for those on board the *Lacon*.

⁴⁷⁰ Haines, "A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, part 1," 28 fn 53.

⁴⁷¹ Washburn, "Washburn Autobiography," 33.

A Snag

One day while heading back downriver, a large impact knocked Serena off her feet in her cabin, not an uncommon event on a Missouri River steamboat that grounded-out on a daily basis. But she soon learned that it wasn't simply another snag or sandbar; the boat was sinking! She noted: "We rushed out on deck, the boat trembled like a leaf suddenly struck, then with a gurgle sank to the bottom of the river and turned partly on its side. Fortunately it had sunk in shallow water and the upper deck and our staterooms were dry."⁴⁷² The shallow nature of the river had sunk the boat, but luckily the same shallow attribute of the Missouri River meant that the vessel could possibly be salvaged. On deeper rivers or ocean voyages, a sunk ship was usually a total loss. But on the Missouri River, cargo could usually be salvaged, passengers could be rescued, and sometimes the boat could be repaired and raised. A common joke on Missouri River steamers was that if someone went overboard, they were more likely to break their legs than drowned, testament to the rocky low-water conditions that prevailed.

The crew quickly set to work trying to repair the boat. They grabbed sacks of government corn, cargo intended for the US Army at Fort Benton, and threw them down into the water in front of the boat to block the current and try to see the damage on the bottom of the vessel. This was the second time these sacks of corn had been used

⁴⁷² Washburn, "Washburn Autobiography," 34-35.

creatively on the vessel, first serving as part of the deck fortification. Both of these innovative uses for material cargo on the *Lacon* speaks to the ingenuity of its crew and their integration of available resources to solve pressing issues. Still, the vessel was in dire straits, with Serena noting that “a snag, a part of a tree, had broken entirely through the hull, making a hole nine feet in length by three feet wide.”⁴⁷³

Repairing the massive gash would require more creative material solutions from the crew if the *Lacon* hoped to make it out of the Far Upper Missouri River. First they needed to make the hull waterproof again, and Washburn continued to describe their efforts: “Inside the wall made by the sacks of corn, the men went to work to raise the boat. They stretched a heavy tarpaulin over the hole on the inside of the boat, then brought blue clay from a bank near[by] in the yawl [row boat], and pounded it against the canvas. By three o'clock the leak from the outside was stopped.”⁴⁷⁴ The tarpaulin they used for this repair was likely heavy canvas made from either cotton or hemp. Both of these materials had a high tensile strength, meaning that they were durable and resisted breaking under pressure.⁴⁷⁵ With the canvas tarp pulled over the hole from the inside of the hull, the crew then took clay, a finely-grained and dense sediment, from the shore and pounded it into the canvas. In doing so, they would have filled the matrix of the canvas fabric with densely-packed clay particles and thus made the fabric almost water-tight.

⁴⁷³ Washburn, “Washburn Autobiography,” 35.

⁴⁷⁴ Washburn, “Washburn Autobiography,” 36.

⁴⁷⁵ “Materials,” *Tarps Plus* (2019).

Just as they had spliced their broken rudder with wood from the landscape earlier in the journey, this was yet another example of how damage caused by environmental factors forced repairs which inadvertently changed the vessel into a hybrid of different material landscapes.

After temporarily patching the hole, the ship's officers assembled everyone onboard and every possible tool to get the water out of the vessel. The crew and passengers set to work getting the water out of the hull, engaging both human labor and mechanical technology in the process. Serena and her sister worked side-by-side with the rest, commenting: "Steam pumps were put in readiness, hand pumps, kegs, buckets, and pans were used by the deck hands, officers and passengers, all working for dear life. Sister and I ran a pump till we blistered our hands."⁴⁷⁶ In these times of need on steamboats, gender and class dissolved in the hard work required to survive. In four hours of grueling physical work, with everyone pitching-in together and the boat's mate encouraging their labor, the water in the boat was reduced and Serena wrote: "At 7 o'clock in the evening the boat was afloat after a hard day's work"⁴⁷⁷

Being afloat again was a huge sense of relief for all onboard, but the crew and passengers of the steamboat *Lacon* were not the only ones in the area. The whole repair operation had been observed from the surrounding hilltops by Native Americans. Serena

⁴⁷⁶ Washburn, "Washburn Autobiography," 36.

⁴⁷⁷ Washburn, "Washburn Autobiography," 37.

mentioned that “upon the top-most crag of the mountains could be seen the Indian sentry who was keeping watch over our movements.”⁴⁷⁸ In her recollections, Serena then bemoaned her dire situation: “Sunset, wolves, deer, elk, buffaloes and Indians, is there any wonder, then, that I shuddered when the hungry cry of the wolves rent the air?”⁴⁷⁹ The officers of the *Lacon* were worried that the steamboat would break in two, sinking completely and forcing all on board to try their luck traveling by land.

In the boat sunk further, it would have been a truly desperate situation for the passengers and crew. The boat and the river were much safer spaces for Euro-American travelers than the land, a place where they were much more vulnerable. The steamboat and the distance from danger afforded by the river’s breadth created a physical refuge from the perils of shore. The loss of the vessel would be the loss of a culturally connection as well; the boat was a physical embodiment of American culture that provided the travelers with a semblance of stability in an otherwise mutable landscape. To avoid a dangerous overland expedition, the officers discussed sending the women and children downstream to Fort Buford in the yawl (small rowboat), hoping that the small boat could slip past the Indians unnoticed during the night time.⁴⁸⁰

Although the *Lacon* was afloat again, the patch in the hull was temporary and water was soon getting the better of the pumps and filling the hull again. The passengers

⁴⁷⁸ Washburn, “Washburn Autobiography,” 38.

⁴⁷⁹ Washburn, “Washburn Autobiography,” 38.

⁴⁸⁰ Washburn, “Washburn Autobiography,” 38.

and crew were roused from their beds at two in the morning to bail out the water. They managed to get the boat floating high enough that they could steam to shore and start a more permeant repair. On the river-bank, the crew engaged one of the vessel's spars, the big telephone-pole-sized timber stilts at the front of the steamboat, and used the steam-capstan (winch) to lift one side of the vessel high out of the water so they could work on the bottom of the hull from shore.⁴⁸¹ Now able to access the hole in the hull, the crew started to prepare a heavy-duty patch for the massive leak.

A Confrontation

As the repair work got underway on the damaged hull, Serena noted: "Some passengers are looking on, others are fishing, when suddenly we are startled by the clatter of hoofs and a war party of Indians were upon us. They jumped from their ponies and the thicket seemed full of them as they lined up and placed their arrows in their bows. A few had heavy rifles."⁴⁸² This scene is an apt example of the way the river's shore was a place of physical danger for these Euro-American travelers. This is in contrast to the steamboat space and the river itself, both of which provided a certain amount of security and safety because of their physical attributes. Serena continued: "Captains, officers, and everyone hurriedly came aboard the boat," attempting to access the safety provided by this

⁴⁸¹ Washburn, "Washburn Autobiography," 38-39.

⁴⁸² Washburn, "Washburn Autobiography," 39.

space.⁴⁸³ Serena described the commander of the *Lacon*, Captain Sedan, as a “timid man”; instead of Sedan it was Henry Washburn, Serena’s husband, who took charge of the situation. Henry Washburn commanded “every man on deck with a gun ([and] it really took a man with a gun to drive the deck hands out of the [ship’s] hold to hold a gun, they were so frightened) [...] The Indians saw such a company of men and such a supply of guns, but they did not know they were empty, for we had used all the ammunition before this time.”⁴⁸⁴ The passengers and crew of the *Lacon* were bluffing the Native Americans, hoping that the physical appearance of their weapons would stop an attack on the vessel, despite the lack of material ammunition. A brief standoff ensued on the river shore, the boundary-line between two different physical spaces, each of which held culturally constructed significance for the populations involved.

As the standoff continued, Serena said simply: “It was thought best to make overtures of peace.”⁴⁸⁵ This peace overture first took the form of a material offering for the Native Americans. The steward of the *Lacon* brought out a basket with the vessel’s “meager supplies”; then a military officer, Captain Bailey (not the steamboat’s captain), “went out to smoke the pipe of peace with them.”⁴⁸⁶ Instead of a fight, a reluctant peace pipe ceremony ensued. Serena noted that Captain Bailey “smoked the long-handled pipe

⁴⁸³ Washburn, “Washburn Autobiography,” 39.

⁴⁸⁴ Washburn, “Washburn Autobiography,” 39-40.

⁴⁸⁵ Washburn, “Washburn Autobiography,” 40.

⁴⁸⁶ Washburn, “Washburn Autobiography,” 40.

for awhile, then handed it to the chief, who stood a little in advance of his men, but the chief took no notice of the pipe or of Captain Bailey.”⁴⁸⁷ In the tension of the moment, Serena’s horror grew when she noticed that the chief had six human scalps on his arm, one of which light-haired. She continued describing the scene: “Captain Bailey smoke three times, and still no notice was given his offer of peace. Then the chief reached out his hand and took the pipe and smoked it a long time. Again we felt another crisis had passed.”⁴⁸⁸ The passengers’ bluff with the unloaded firearms had paid-off. The material offer of supplies, and the socially-constructed significance of smoking the tobacco plant in the long-handled pipe, cemented this uneasy truce.

The Indians remained around the steamboat for half the day before moving onward, the sense of impending danger diminishing as they left. In her remembrances of this journey on the Missouri River, 35 years after the fact, Serena Washburn identifies the Native Americans from this incident as “a war party of Crow going to fight the Sioux.”⁴⁸⁹ If taken at face-value this is problematic because there are no other confirmed accounts of Crow Indians attacking Euro-American groups on the river (or anywhere else).⁴⁹⁰ The Crow were usually aligned with Euro-American forces against the Sioux, who were traditional enemies of the Crow. In the case of the Serena Washburn and the steamboat

⁴⁸⁷ Washburn, “Washburn Autobiography,” 40.

⁴⁸⁸ Washburn, “Washburn Autobiography,” 40.

⁴⁸⁹ Washburn, “Washburn Autobiography,” 41.

⁴⁹⁰ Juneau, *Montana Indians: Their History and Location*, 16-18.

Lacon, it is possible that Washburn received incorrect information from Fort Peck in 1869. She could also have misunderstood the positions of the Indian groups when she received this information, reversing the roles of the Crow and the Sioux. Washburn could also have simply misremembered the tribal details when she narrated her story 35 year later. Alternatively, Washburn could have gotten her facts correct and this account would then provide historical evidence of a near-confrontation between the Crow and a Euro-American steamboat.

Rescue

As the Native American group left the shoreline where the *Lacon* was stranded, the crew got back to work repairing their damaged vessel. Time was ticking and the river level continued to drop. All of the passengers and crew on board believed there were no more steamboats upstream of them and that they were the last of the season, but they were wrong. The steamboat *Ida Stockdale* came chugging down the river, heavily loaded and running out of provisions. Henry Washburn used a “liberal cash offer” to convince the captain of the *Ida Stockdale* to take on six passengers, including himself, Serena, their daughter, and her three other female relatives. The captain of the *Ida Stockdale* refused to take Serena’s son, saying “the young men could fight their way through some way.”⁴⁹¹ This statement reveals some of the gendered dynamics present on steamboats by the end

⁴⁹¹ Washburn, “Washburn Autobiography,” 41.

of the 1860s. Because of their gender, the safety of women and families took a higher priority and they were thus better able to access the safe-space of the steamboat. Men, even younger ones like Serena's son, would have to survive (or not) on the terrestrial landscape that held more physical danger for Euro-Americans.

Although, the captain of the *Ida Stockdale* would not take the Washburns' son, he did agree to carry the Washburn's piano, which had gotten soaked when the *Lacon* sank. The Washburns had brought the piano with them for their new home in Helena, Montana, another example of American material culture (and musical culture) being exported to Montana via the Missouri River. The *Ida Stockdale* took it onboard and put it near the engine to dry out. This turned out to be a poor decision when the piano caught fire and sent up a worried cry throughout the boat. But luck was on their side this time and the fire was quickly put out.⁴⁹²

Heading downstream on the *Ida Stockdale*, Washburn noted when they repassed the cargo left on shore by the steamboat *Sully*, which was double-tripping back down to pick-up the remainder. The *Ida Stockdale* stopped briefly to give the guards some flour; Washburn noticed that the men standing guard "had placed a number of paddies around their camp to make it look like there were more men."⁴⁹³ By creating these strawmen to increase the appearance of their numbers, these guards were attempting to change the

⁴⁹² Washburn, "Washburn Autobiography," 41.

⁴⁹³ Washburn, "Washburn Autobiography," 41.

perceived human dynamic at the site. The material cargo they guarded was desirable and therefore dangerous to protect. The guards used the available natural resources to create the illusion of more men to inspire safety in numbers, something that was especially important in the more-dangerous and vulnerable terrestrial shore space.

Fort Buford and the Yellowstone River

As Serena Washburn and the *Ida Stockdale* approached Fort Buford, near the mouth of the Yellowstone River, Washburn commented on the Native Americans she observed from the boat, though not specifying their tribal affiliations. She said: “The Indians will follow the boat all day, sometimes, hoping it will land. And when it does tie up they rush from every direction, running or riding, often three children on one pony carrying their dogs. They come in blankets and buffalo robes and a few of them in their bare skins.”⁴⁹⁴ Washburn does not express what exactly the Indians wanted to get on board the vessel for, and it’s likely that she was not sure herself what their goals were. But she knew that the captain and the passengers did not want them on board. To deter this type of attention from the Native Americans as they passed Fort Buford, the captain of the *Ida Stockdale* hung out a ‘smallpox flag.’⁴⁹⁵ This was a cruel intimidation technique against tribes that had been decimated by small-pox over the previous two

⁴⁹⁴ Washburn, “Washburn Autobiography,” 41.

⁴⁹⁵ Washburn, “Washburn Autobiography,” 41.

centuries; some of these smallpox outbreaks had been started by steamboats bringing the diseases upstream. By flying the smallpox flag from the steamboat the captain was continuing the Euro-American practice of exploiting Indigenous fear of disease, essentially bullying the tribes into worrying for their safety and the health of their communities.⁴⁹⁶

When they arrived at the confluence with the Yellowstone River, those on board the *Ida Stockdale* were treated to an ancient but quickly disappearing sight: a fleet of Gros Ventre women paddling down the Yellowstone River in two-hundred round boats filled with buffalo meat.⁴⁹⁷ The boats were a type of vessel called bull-boats and Washburn described their construction and operation well: “Their boats are made by bending willow poles, making a round basket about ten feet in diameter, this being covered by buffalo robes, skin side out, and perfectly waterproof. Several of these are tied together. A squaw sits in the front of the first one and propels the boat with a single paddle.”⁴⁹⁸ This was a Native American technology that was a physical representation of the relationship between Native peoples, the buffalo, and the Missouri River landscape they all shared. It was an ancient technology that had been around for hundreds (if not thousands) of years; but it would soon begin disappearing with the buffalo themselves. Washburn said that there were over two hundred bull-boats in this fleet. Many of the

⁴⁹⁶ Estes, *Our History Is the Future*, 86.

⁴⁹⁷ Washburn, “Washburn Autobiography,” 42.

⁴⁹⁸ Washburn, “Washburn Autobiography,” 42.

women in the bull-boats had children with them, who “sit on the meat and relish a piece of raw fat buffalo meat [*sic*] while the mother works.”⁴⁹⁹

Riding along the river shore to protect the Gros Ventre women were “two hundred mounted warriors on each side of the river.”⁵⁰⁰ Washburn said that this protection was critical because “they were passing through the country belonging to another tribe, and they are constantly warring with one another.”⁵⁰¹ The other tribe Washburn referenced here was likely the Assiniboine tribe.⁵⁰² The Assiniboine, who were allied with their linguistic relatives the Sioux, had traded near the mouth of the Yellowstone River for years and considered the Gros Ventre, Blackfeet, and Crow tribes to be their enemies.⁵⁰³ The bull-boats were an integration of Native American labor, traditional technologies, and the natural elements of buffalo and river. As such, they provide a point of comparison with steamboat travel in the same area. The scene provides another example of how human travel technologies (like boats of all types) were an embodiment of natural landscape elements, technological innovation, and human labor, none of which could be disentangled from the other elements.

⁴⁹⁹ Washburn, “Washburn Autobiography,” 42.

⁵⁰⁰ Washburn, “Washburn Autobiography,” 42.

⁵⁰¹ Washburn, “Washburn Autobiography,” 42.

⁵⁰² Haines, Aubrey L. “A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, Part II.” *Montana; The Magazine of Western History* 50, no. 1 (2000), 23 fn. 9.

⁵⁰³ Haines, “A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, Part II,” 23 fn. 9

One of the Gros Ventre men on horseback even decided to hitch a ride for himself and his family on the passing steamboat. Washburn mentioned: “A chief wanted to come on the boat for the rest of the journey. The Captain was afraid to refuse, so the squaw unloaded their boats and the two braves, the squaw, and the pappoose [*sic*] came on board, paying three buffalo robes for the short trip.”⁵⁰⁴ This action of the Gros Ventre chief is enlightening because it shows how Native American perspectives of the relationship between the river and technology was changing. The chief and his family abandoned their traditional transportation technology of the plains (the bull-boat), and their more recently acquired transportation technology (the horse), to hitch a ride downstream on the steamboat. The chief also understood the capitalist assumptions that went with the journey and what was expected of him for the transportation services rendered; he paid for their passage with three buffalo robes.

The effects of extreme low-water were evident as the *Ida Stockdale* continued downstream back to the lower river, with Serena noting that they “passed several wrecks, as there are many boats lost on this turbulent and crooked river.”⁵⁰⁵ They finally arrived back at Sioux City, Iowa on August 4, where the majority of passengers disembarked,

⁵⁰⁴ Washburn, “Washburn Autobiography,” 41.

⁵⁰⁵ Washburn, “Washburn Autobiography,” 44.

likely taking the train back east and happy to be off of the daunting river currents. The Washburn family stayed on the *Ida Stockdale* for one more day, ending their river journey at Omaha, Nebraska on August 5.⁵⁰⁶ It was from Omaha that the Union Pacific Railroad had started stretching westward earlier in the decade and the first Transcontinental Railroad had been completed at Corinne, Utah on May 10 of 1869, weeks before Serena and her family boarded for the start of their upriver journey.

Now back in Omaha after their challenging journey up and down the Missouri River without reaching their destination, taking the railroad option likely seemed the best choice in hindsight. Henry Washburn still had a responsibility to get to Helena, Montana Territory, to take up his new position as territorial surveyor general, and he got on the new Transcontinental Railroad at Omaha and headed west. From Corrine, Utah it was a four day wagon ride to Helena, travelling day and night.⁵⁰⁷ Serena mentioned in her memoir that she was too frail for an overland journey, and she went back home to Indiana.

Henry Washburn took up his position as surveyor general of Montana Territory at the end of August, 1869 and was a leader of the military escort which accompanied the Langford Survey in the summer of 1870. This was a surveying and mapping mission of the landscape that would become Yellowstone National Park in March of 1872.⁵⁰⁸ The

⁵⁰⁶ Washburn, "Washburn Autobiography," 44.

⁵⁰⁷ Haines, "A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, Part II," 24 fn 12.

⁵⁰⁸ Haines, "A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, Part II," 25.

goals of this surveying mission were accomplished, but Henry Washburn's got sick during a summer snowstorm in the Yellowstone country and never fully recovered. Whether this was an aggravation of his consumption or pneumonia has been debated, but when he returned home to Indiana in December he did not improve; Henry Washburn died in January of 1872, leaving Serena and their children to fend for themselves.⁵⁰⁹ In the mid-1880s Serena homesteaded a 160-acre plot in the Kansas Territory, and spent much of her later years traveling to visit family and friends around the country. She passed away in 1917, on the day that the United States declared war on Germany and entered the First World War.⁵¹⁰

The experiences of Serena Washburn and her fellow travelers on three different vessels during the summer of 1869 highlights many important themes of steamboat travel during the Montana Territorial period. One of the largest takeaways from her voyage was the importance of sufficient water in the river channel to make steamboat travel feasible. While some vessels did make it to Fort Benton in 1869, the low-water challenges of the Missouri River made it critical that vessels were of the shallow-hulled,

⁵⁰⁹ Haines, "A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, Part II," 25-6.

⁵¹⁰ Haines, "A voyage to Montana: Serena Washburn's account of her trip up the Missouri River in 1869, Part II," 26.

stern-wheeled variety in order to contend with the sandbars and snags of the fickle river. These environmental challenges resulted in additional labor for the crew and additional material inputs to operate the vessels. In this way, the low-water environmental situation of the Missouri Valley increased the energy needs of steamboats to overcome natural obstacles despite the fact that the river itself flowed with reduced downstream energy in 1869. Low-water also caused an increase in the danger faced by Euro-American steamboat crews and travelers by forcing them onto shore for additional fuel, as well as to make repairs when the Missouri River environment punctured a hole in the hull of the steamboat. Washburn's observations of the Gros Ventre bull-boats and the use of the steamboat for travel by the Gros Ventre chief highlights another change to the way that Native peoples related to steamboat technology as the Montana steamboat era progressed. While tribes that attacked the vessels saw steamboats as an invasion of their terrain, other Native groups still utilized them for the transportation. Washburn's experiences also speak to the continuing challenges of steamboat travel on the Missouri River, setting the stage for the arrival of the next important transportation technology to influence the landscape: railroads. The next chapter explores how steamboats continued to operate despite the encroachment of railroad tracks and the rail-wagon transportation routes into the territory. The expansion of the Northern Pacific Railroad lines into the Yellowstone River Valley of Montana was a critical step in railroad development, and the following chapter explores how steamboats in Montana helped to facilitate the surveying of the Northern Pacific into the Yellowstone Valley. At the same time, steamboats also served as critical transportation technologies for the US military forces which protected the

survey crews and pursued the Native tribes that attempted to hinder the railroad's expansion.

CHAPTER SEVEN

1873 & 1875 - CAPTAIN GRANT MARSH
AND THE YELLOWSTONE RIVER

This chapter follows the riverboat pilot Grant Marsh on two steamboat journeys up the Yellowstone River. The details of Marsh's trips were recounted in an as-told-to biography written by Joseph Mills Hanson in 1909 entitled *The Conquest of the Missouri: Being the Story of the Life and Exploits of Captain Grant Marsh*. The trips took place in 1873 and 1875, when Marsh navigated into the waters of the Yellowstone River under orders from the US Army. While recounting Marsh's experiences, this chapters explores how steamboats interacted with the environmental and cultural realities of the Yellowstone Valley and the ways that the Yellowstone's own unique energy systems differed from those of the Missouri River. The impacts of Marsh's trips were two-fold. First, steamboats provided a safe-space for Northern Pacific Railroad surveyors in order to document and map the landscape of the Yellowstone Valley for future tracks. Second, the steamboats served as logistical support vessels for US Army activities against the Sioux and their allies in the Yellowstone Valley. Both of these goals exemplify the ways that steamboats in Montana were a critical part of American imperialist expansion into the region and how steamboat technology was intertwined with the growth of railroad lines into the Yellowstone Valley and Montana in general. In the process, Marsh's experiences show how survey crews physically integrated human labor, steamboat technology, and the surrounding landscape to conduct their survey and map the terrain. This chapter also shows how the unique adaptation of auxiliary steamboat technologies

made steamboat travel on tributaries of the Yellowstone possible, especially on the Big Horn River. Finally, this chapter argues that the expansion of steamboat travel into the Yellowstone Valley influenced the ways that different groups of Native Americans related to the landscape of the Yellowstone Valley while also influencing the way that Euro-American settlers and boosters envisioned the possibilities in the landscape.

The Euro-American population of Montana Territory continued to expand into the 1870s, driven by a combination of gold mining, ranching, farming and homesteading activities. Settlements near the gold mines grew from small camps into towns; in the 1870 census the largest populations in the territory were in Helena (pop: 3,106), Virginia City (pop: 867), and Deer Lodge (pop: 788).⁵¹¹ The Transcontinental line had been completed at Corinne, Utah in May of 1869, and at long-last the Atlantic and Pacific Oceans were connected by rail. In the early 1870s, this rail route started to influence how and where material goods were being shipped into Montana Territory.

Fort Benton was still the main Missouri River port in Montana and continued to see steamboat traffic, but the official population had only grown to 367 people by 1870. Steamboat travel to Montana had reached its first peak in 1867, with thirty-seven steamboat landings in Fort Benton, and still had a large number of landings in 1868 (35

⁵¹¹ US Census Bureau, "1870 Census."

landings) and 1869 (24 landings).⁵¹² But in the early 1870s the number of steamboats reaching the region dropped off precipitously due to the influence of the Transcontinental Railroad. In 1870 the number of landings was down to eight and there were only six steamboats that arrived at Fort Benton in 1871 (through there were an additional five boats that made the attempt and were stopped by low-water near Cow Creek, at the transition to the Rocky River dynamic).⁵¹³ The number of steamboat landings was back up to twelve in 1872, and there were seven vessels that completed the journey in 1873. While these wavering numbers might have indicated that the importance of steamboat travel would soon disappear and be replaced by the iron horses of the railroad, there was still much work for steamboats to do in Montana and on the northern plains.

Settlements continued to expand in other areas of Montana Territory, though the growth was slower and more stable than the boom-bust pattern seen in the some mining camps and rivertowns. In the Gallatin Valley, Bozeman was the largest Euro-American settlement. The town of Bozeman had begun as a stopover on a migrant road to the gold mines known as the Montana Trail, or the Bozeman Trail (named for its pioneer, John Bozeman). It was a northern off-shoot of the Oregon Trail and brought migrant wagon-trains through the upper valley of the Yellowstone River before crossing west, up and over Bozeman Pass, down into the Gallatin River Valley, and onward to Virginia City.

⁵¹² "Steamboat Arrivals at Fort Benton and Vicinity," *Contributions to the Historical Society of Montana*.

⁵¹³ "Steamboat Arrivals at Fort Benton and Vicinity," *Contributions to the Historical Society of Montana*.

The town of Bozeman was platted in 1864, just west from Bozeman Pass and near the head of the East Gallatin River. By 1870, its population had grown to 574 residents.⁵¹⁴ Though the Bozeman Trail into the Gallatin Valley had been effectively closed by the Fort Laramie Treaty of 1868, Euro-American migrants continued to be interested in the Yellowstone Valley for both travel, prospecting, and settlement.

By the early 1870s, the expansion of the Northern Pacific Railroad (NPRR) through the Yellowstone Valley and over Bozeman Pass was seen as key to opening the area to further growth. Surveying the landscape was a critical factor in this, as it had been for the Transcontinental Railroad a decade earlier.⁵¹⁵ There were multiple railroad survey attempts of the Yellowstone Valley during this period; the survey crews tried approaching overland from the west and by steamboat from the east. The US government was the biggest benefactor of American railroads, providing land-grants and funding for railroad construction. The government also supplied military support. In 1871 a crew of NPRR surveyors left Bozeman with a small US Army escort from the garrison at Fort Ellis, at the head of the Gallatin Valley. The group managed to survey the Yellowstone Valley as far as the mouth of the Pryor's Fork River before being turned back by Sioux attacks.⁵¹⁶ The following year, 1872, another NPRR survey crew set out

⁵¹⁴ US Census Bureau, "1870 Census."

⁵¹⁵ Fiege, *Republic of Nature*, 236-241.

⁵¹⁶ Hanson, Joseph Mills. *The Conquest of the Missouri: Being the Story of the Life and Exploits of Captain Grant Marsh* (Pelican Publishing, 1918), 146.

from Fort Ellis to complete the survey line. Having learned their lesson about Indigenous resistance in the Yellowstone Valley, this time they were escorted by 400 troops under the command of Maj. Baker. Once again, they only managed to get as far as Pryor's Fork before being attacked by a war party of 1,000 Sioux and Cheyenne.⁵¹⁷ Though they repulsed the attacks, the NPRR survey crew lost faith in their safety and insisted that the expedition return to Bozeman with the survey uncompleted.⁵¹⁸ These Native American attacks on railroad survey crews mirrored similar Indinigenous assaults on survey crews as the Union Pacific Railroads; they were attacks to express some form of power over the encroaching Euro-Americans and their technologies.⁵¹⁹ As the survey crews returned back west to Bozeman, they left the Yellowstone Valley with approximately 200-miles of un-surveyed terrain.

This 200-mile section of the central Yellowstone remained unmapped at the start of 1873, a glaring indication of the way that NPRR survey crews struggled to map and record the physical topography of the Yellowstone Valley using overland techniques alone. The NPRR and the US government soon began planning another survey of the Yellowstone Valley, this time with the aid of steamboats, a technology that had only been used on the Yellowstone River once before. In the spring of 1873, the NPRR and US Army contracted with the Coulson Packet Company for steamboats to move railroad

⁵¹⁷ Hanson, *The Conquest of the Missouri*, 146.

⁵¹⁸ Hanson, *The Conquest of the Missouri*, 146.

⁵¹⁹ Fiege, *Republic of Nature*, 255.

surveyors and survey supplies up the Yellowstone Valley, as well as the US military forces that would protect the expedition. In doing so, the Coulson Packet Company were facilitation the transition to a new transportation technology in the region, one that would eventually make steamboat traffic obsolete. But in the meantime, there was money to be made from the railroad's interest in the northern plains and the Yellowstone River drainage.

Two Routes to the Yellowstone Valley

It was mid-June when riverboat pilot Captain Grant Marsh and the steamboat *Key West* arrived at Fort Rice, in present-day South Dakota. Onboard the steamboat were the wives and children of General Custer's 7th Calvary unit, along with the officers luggage and the units laundresses.⁵²⁰ There was not space for much else and the bulk of military supplies and foodstuffs were onboard two other steamers: the *Far West* and the *Peninah*.⁵²¹ Pulling up to the chaotic shoreline at Fort Rice, Marsh was making his second trip up the Missouri River for the season. His first trip of the year, in early May, had taken him up the Yellowstone River Valley, into waters that had never seen steamboat traffic before. The shallow nature of the Yellowstone had long kept significant steamboat travel at bay, keeping Euro-American industrial encroachment away and

⁵²⁰ Hanson, *The Conquest of the Missouri*, 172.

⁵²¹ Hanson, *The Conquest of the Missouri*, 172.

creating a temporary refuge from tribes like the Sioux.⁵²² But the Yellowstone Valley and its inhabitants would soon see the arrival more steamboats and experience the industrial systems that energized them.⁵²³

Earlier in the spring, the US Army's General Philip Sheridan had ordered Captain Grant Marsh to pilot the steamboat *Key West* up the Missouri River, enter the Yellowstone River, and explore up as far as the mouth of the Powder River (between modern Miles City and Glendive). Steamboats had first entered the waters of the Yellowstone River in 1864 but there had been no steamboats on the Yellowstone since then. Those boats had made it as far as Glendive Creek, 125-miles up from the mouth of the Yellowstone.⁵²⁴ Marsh and the *Key West* had entered the waters of the Yellowstone River on May 6, 1873, and on May 12, they navigated to within two miles of the Powder River where they were stopped short by "an insurmountable reef of rocks."⁵²⁵

Having returned from this first expedition in the Yellowstone River, Captain Grant Marsh and the *Key West* were now headed to the Yellowstone country again. This time they were providing logistical support and assistance to a Northern Pacific Railroad survey crew, as well as column of infantry soldiers that would protect the surveyors in the

⁵²² Schneiders, *Big Sky Rivers*, 201.

⁵²³ Smil, *Energy and Civilization: A History*, 228-9.

⁵²⁴ Athearn, Robert G. *Forts of the Upper Missouri* (Nebraska: Univ. of Nebraska Press, 1972), 141; Hanson, *The Conquest of the Missouri*, 162

⁵²⁵ Hanson, *The Conquest of the Missouri*, 160, 164, 166; Schneiders, *Big Sky Rivers*, 201.

Yellowstone country. The surveyors were tasked with documenting and mapping the lower Yellowstone Valley, while the US Army soldiers were on an offensive mission. General Sheridan gave them orders to “deal the [Sioux] Indians a crushing blow if they could be brought to battle.”⁵²⁶ Many of the Lakota Sioux had been living in the drainages of the Yellowstone River since the 1840s and 1850s, pushing aside the Crow tribe in the region.⁵²⁷

At Fort Rice, still downstream of Fort Abraham Lincoln/Bismarck, all of the various military units for the expedition assembled for an overland journey to the Yellowstone Valley. Between the troopers of the 7th Cavalry and all the infantry companies involved in the campaign, there were eighty officers and 1,451 enlisted men on the overland expedition.⁵²⁸ The overland forces would rendezvous with the steamboats near Glendive Creek. The troops heading overland were able to march directly west to reach the Yellowstone Valley, while the steamboats had to continue north following the channel of the Missouri River through the badlands of western North Dakota for hundreds of miles before reaching the mouth of the Yellowstone and heading back south again. The environmental constraints of the riverine landscapes meant that steamboat travel influenced movement across time and space, but in non-linear ways. Using steamboats to access landscapes in the Yellowstone Valley actually elongated the

⁵²⁶ Hanson, *The Conquest of the Missouri*, 171.

⁵²⁷ Schneiders, *Big Sky Rivers*, 198.

⁵²⁸ Hanson, *The Conquest of the Missouri*, 174.

physical travel distance between two points while simultaneously shortening the time needed to travel between them.

On June 20, under the command of General David Stanley, the overland march to the west began; on that same date the three support steamboats of the expedition started upstream for the mouth of the Yellowstone River. It had been more than a month since Grant Marsh and the *Key West* had left the Yellowstone Valley, and they now found that the snowmelt in the mountains had swollen the flow of the Yellowstone River. The sandbars that had forced them to use spars near the mouth of the river now posed no obstacle at all, and the all three steamboats were able to steam to their rendezvous point at Glendive Creek without incident. Grant Marsh and the *Key West* remained at Glendive to await the Army column coming overland.⁵²⁹

They waited for the overland expedition for an additional twelve days.⁵³⁰ When General Custer and his vanguard finally came into view on the morning July 30, they had been marching for forty-one days, many of which were spent bogged down in rain and mud through the badlands.⁵³¹ This highlighted the different challenges created by badland terrain for different types of transportation technology; the badlands presented critical material challenges for both steamboats and horses, with steamboats struggling

⁵²⁹ Hanson, *The Conquest of the Missouri*, 174.

⁵³⁰ Hanson, *The Conquest of the Missouri*, 178.

⁵³¹ Hanson, *The Conquest of the Missouri*, 174.

from a lack of firewood for fuel-energy while horse travelers struggled from the lack of grass to energize their horses.⁵³²

General Custer boarded the *Key West* at Glendive and told Captain Marsh to head upstream another twenty miles to a good camping spot where the main column of troops would meet them. The steamboat arrived around dusk but the infantry troops had not yet appeared. In the evening hours, the military band of the 7th Cavalry reached the camp spot and proceeded to serenade the assembled soldiers and steamboat amidst the moon-light, bringing the classical tunes of Euro-American culture to a place that was traditionally home to the drums, songs, and dances of Native musical expression. Grant's biographer wrote how "the sweet strains of this splendid military band, on such a silent, moonlit night and in such surroundings, made a weirdly solemn impression on the listeners which time could never efface."⁵³³

Military Logistics and NPRR Survey Work

With all of the campaign's troops rallied in one place again, Captain Marsh and the crew of the *Key West* were given a variety of tasks to complete. They ferried all of the materials left at the Glendive depot up to the new camping spot, where the troops were erecting a rude fortification called Stanley's Stockade to protect the supplies. Grant

⁵³² Smil, *Energy and Civilization: A History*, 179, 228-9.

⁵³³ Hanson, *The Conquest of the Missouri*, 178.

also used the *Key West* to ferry General Stanley's troops and more some of the railroad surveyors across the Yellowstone River so that they could pursue their missions on the north side of the river.⁵³⁴ In analysis, these steamboat river crossings help to emphasize the logistical importance of the vessels in assisting US military activities in the region. It would have been difficult and impractical to attempt these logistical movements without the aid of steamboat technology, though it could have likely been accomplished with the use of unmotorized mackinaw boats and extensive physical labor. Mackinaw boats could not have been used in any realistic way for the *Key West*'s next task: transporting the main group of Northern Pacific surveyors fifty miles upstream of Glendive and then assisting them in the survey of the valley.

To document and understand the landscape of the Yellowstone Valley, the NPRR survey crew employed a novel method of taking distances which incorporated the use of steamboat technology for time purposes and for the safety that the steamboat-space represented. The survey crew positioned themselves on the top-most deck of the steamboat so that they were able to walk to full length of the vessel, 200-feet on the *Key West*.⁵³⁵ As the vessel proceeded upstream, a surveyor at the bow of the boat would chose a landmark on the shore, a tree or a rock or anything else stable, and then they would keep abreast of that landmark by walking towards the stern of the boat. When that

⁵³⁴ Hanson, *The Conquest of the Missouri*, 179.

⁵³⁵ Hanson, *The Conquest of the Missouri*, 205-6 ; Lass, William E. *A History of Steamboating of the Upper Missouri River* (Lincoln, Nebraska: University of Nebraska Press, 1962), 108.

surveyor arrived at the stern, having kept pace with the stationary object on shore, he had walked 200-feet and the steamboat itself had thus proceeded 200-feet upstream. As this first survey-walker reached the stern of the boat, a second survey-walker would start from the bow and keep pace with a new landmark on shore, working towards the back of the vessel.⁵³⁶ In this way the steamboat itself operated almost as a measuring tape; the boat was doubling as a survey line.

By surveying in this way, the NPRR crew incorporated their own physical engagement with both the vessel and the natural attributes of the landscape in order to document and chart the distances of the winding riverscape. While it may not have been quite as accurate as running a survey line along the shore, it was certainly more time efficient and safe for the survey crews. The challenges and dangers of overland survey had been highlighted by the attempts that had been made from Bozeman earlier in the 1870s, when multiple NRPP survey groups were turned back by Sioux and Cheyenne attacks. In this 1873 journey, Grant Marsh and the *Key West* assisted in the survey about 50 miles above Glendive Creek.⁵³⁷

Aside from documenting the physical attributes of the valley bottom, Marsh also took the time to apply Euro-American names to all of the physical aspects of the landscape that they encountered and recorded. In this way he assisted in Euro-

⁵³⁶ Hanson, *The Conquest of the Missouri*, 205-6.

⁵³⁷ Hanson, *The Conquest of the Missouri*, 179.

Americanizing the Yellowstone Valley, further dispossessing Native peoples of their cultural connection to the physical terrain and replacing these Indigenous connections with Euro-American land-claims.⁵³⁸ Many of the new titles were taken from famous US Army officer and renowned Indian fighter, further testament to the martial and imperial nature of this activity. Marsh's effort was a continuation of William Clark's naming (and claiming) work while heading down the Yellowstone River in 1806, when Clark had named all of the tributary creeks.⁵³⁹ Marsh applied names to cliffs, buttes, islands, rapids, and other landforms, naming nearly every attribute between the mouth of the Yellowstone River and the mouth its tributary Powder River, white-washing Native cultural associations from these places.⁵⁴⁰

Over the next weeks, while Marsh and the NPRR crew were surveying, General Stanley, General Custer, and their troopers engaged in multiple battles with forces of the Sioux Nation on the northern side of the Yellowstone River. In a series of engagements the Calvary lost a total of four men killed and another four wounded, while the Sioux lost an unreported number of warriors. In the end, the US forces eventually succeeded in driving the Sioux from the immediate area, at least temporarily, altering the Sioux's perception that the Yellowstone Valley was still a refuge for them.⁵⁴¹ The accompanying

⁵³⁸ Hanson, *The Conquest of the Missouri*, 166.

⁵³⁹ Hanson, *The Conquest of the Missouri*, 166.

⁵⁴⁰ Hanson, *The Conquest of the Missouri*, 165-6.

⁵⁴¹ Calloway, *One Vast Winter Count*, 13.

NPRR overland crew was able to complete their task of surveying the north shore of the Yellowstone as far as Pompey's Pillar. Here the NRPP workers connected with the survey line from two years earlier; between the work of these various expeditions, surveying from both land and riverboat, the entire length of the Yellowstone Valley had been surveyed for the first time, at least at a rudimentary level.⁵⁴² These measurements enabled the NPRR to continue planning the expansion of their tracks into the Yellowstone Valley, expediting the railroad's arrival in the region.

Steamboat *Josephine*

Grant Marsh and the *Key West* remained around Stanley's Stockade while the troops and surveyors roamed the hills and ravines further upstream. In mid-August, Marsh was delighted when he encountered the steamboat *Josephine* coming up the Yellowstone. The *Josephine* had been specially built in Freedom, Pennsylvania (on the Ohio River, downstream from Pittsburgh) under special instructions from Marsh. It was a light-draft vessel that was better suited to the shallow whims of the Yellowstone's current. Captain Marsh immediately transferred to the new boat and sent the *Key West* back downstream with the other riverboat pilot. General Stanley must have been happy

⁵⁴² Hanson, *The Conquest of the Missouri*, 183.

to see the new vessel when he arrived back at camp on September 10. Captain Marsh had named it *Josephine* after Stanley's daughter, who lived at Fort Sully.⁵⁴³

On September 22nd, with the river typically shallow for that time of year, Grant Marsh used the *Josephine* to ferry Calvary troops and some infantry units to the east shore of the Yellowstone so they could commence their overland march back to Fort Rice in Dakota Territory. The *Josephine* then headed back downstream towards the Missouri River with two battalions of infantry troops, as well as all of the wounded soldiers from Stanley's campaign. While the Stanley's mission was considered a success in military terms, in reality, the Sioux had only been temporarily driven from the Yellowstone area and quickly reoccupied the region soon after the *Josephine* disappeared back downstream. Additionally, the damage inflicted by Stanley and his troopers, with the help of steamboat power, only served to further enrage the Sioux. Military leaders of the Sioux groups that evaded the reservations and refused to submit to US authority used the NPRR expedition of 1873 to garner more support from the Sioux who were on reservations.⁵⁴⁴ The NPRR surveyors and military columns that steamboats transported up the Yellowstone were essentially used as propaganda by the non-reservation Sioux. The progress of steamboats up this river valley was further evidence that Euro-American expansion into even these remote regions would never stop, and the Sioux used this logic

⁵⁴³ Hanson, *The Conquest of the Missouri*, 183-4.

⁵⁴⁴ Hanson, *The Conquest of the Missouri*, 189.

to recruit more fighters into their struggle, including those who had been neutral (or at least non-violent) up until that point.

Grant Marsh and the Josephine - 1875

It would be another two years before Grant Marsh, or any other steamboat pilot, navigated into the waters of the Yellowstone Valley. In the meantime, the animosity of the Sioux Nation was further incensed by General George Custer's calvary explorations of the Black Hills region in southern Dakota Territory in 1874. This was a sacred landscape for many plains tribes, and the Fort Laramie Treaty of 1868 had officially declared the Black Hills to be part of the Great Sioux Reservation, an area off-limits to Euro-American settlement. The region was the heart of the Sioux homeland, a holy place that the Sioux believed should never suffer to be trod upon by Euro-American feet. But General Sheridan ordered Custer to explore the area for resources and to find a location for a potential military fort which could be used to strong-arm the Sioux. While on this exploration, some of Custer's soldiers found small deposits of gold, the news of which would eventually spark the Black Hills Gold Rush of the mid-1870s. In many ways, it was the Euro-American encroachment of the hold Black Hills that eventually brought the Sioux-Euro-American conflict to a head at the Battle of the Little Big Horn in 1876.⁵⁴⁵

⁵⁴⁵ Hanson, *The Conquest of the Missouri*, 191-2.

The Northern Pacific Railroad did not lay any track during 1874, nor did the company conduct further surveys that year. The worldwide financial Panic of 1873, one of the causes of which was speculation in the American railroad industry, meant that railroad construction projects were halted around the country. In January of 1875, General Philip Sheridan again contracted with the Coulson Packet Company for the steamboat *Josephine* and Captain Marsh to proceed up the Yellowstone River as far as possible and establish the head of navigation on that stream.⁵⁴⁶

In a letter to his military secretary, Lt. Col. James Forsyth, Sheridan's orders are plain. He wrote from Chicago on May 19, 1875 that the *Josephine* was at Forsyth's disposal "for an examination of the Yellowstone River from its mouth to the mouth of the Big Horn [river], or still further up, if practicable."⁵⁴⁷ Sheridan continued: "I want a careful examination made of the south bank of the Yellowstone and the mouths and immediate valleys of the rivers coming in from the Black Hills [...] giving an account of the timber, soil, and geological formations, also the depth of the water in a general way, and the character of any rapids passed over above the mouth of the Powder River."⁵⁴⁸ Sheridan concluded his letter with a statement that revealed part of the motivation of this expedition. "It may be necessary," he wrote, "at some time in the immediate future, to occupy by a military force the country in and about the mouths of the Tongue River and

⁵⁴⁶ Hanson, *The Conquest of the Missouri*, 197.

⁵⁴⁷ Hanson, *The Conquest of the Missouri*, 195-6.

⁵⁴⁸ Hanson, *The Conquest of the Missouri*, 196.

the Big Horn.”⁵⁴⁹ The *Josephine* was being sent on a scouting mission into the Yellowstone country in advance of a potential military occupation by the US Army, a tool of American empire on the northern plains.

Arriving at Buford on May 25th, the *Josephine* took on a military escort that consisted of 100 enlisted men and seven officers, as well as four more scouts to work with hunter/scout Reynolds. The *Josephine* also took on additional armaments that included a one-inch Gatling gun and 10,000 rounds of ammunition for this automatic firearm. In doing so, they introduced the first rapid-fire weapon into the Yellowstone Valley, a technology of industrialized warfare transported by steamboat into a new landscape. The expedition also packed enough rifle ammunition for 350 rounds per soldier. When they again departed from Fort Buford, the *Josephine* was loaded with 300 tons of materials but still only displaced 20-inches of water.⁵⁵⁰

The *Josephine* left Fort Buford at 6 p.m. on May 26th and managed to steam twelve miles up the Yellowstone River before the twilight had faded from the sky and they pulled over to shore.⁵⁵¹ The river level was high, due to snowmelt in the mountains, and the *Josephine* was able to make good progress without being impeded by sandbars or rocky reefs. While the conditions for the 160 soldiers, officers, and crew members onboard were comfortable, the reality of their martial mission showed when the soldiers

⁵⁴⁹ Hanson, *The Conquest of the Missouri*, 196.

⁵⁵⁰ Hanson, *The Conquest of the Missouri*, 198.

⁵⁵¹ Hanson, *The Conquest of the Missouri*, 199.

were ordered to establish a security perimeter around the bank where the vessel was tied-up for the night. This practice would continue for the whole expedition, both when they landed for the evenings and when crew members were onshore to procure firewood for the boilers.⁵⁵²

On May 29th, the *Josephine* arrived at the treacherous Wolf Rapids, the rocky and tumultuous section of water downstream from the mouth of the Powder River that had stopped Marsh and the *Key West* in 1873.⁵⁵³ This time, as Marsh and the *Josephine* headed upstream through the rapids, they found the main channel through the rapid has swollen with snowmelt from the mountains and was eight feet deep at its shallowest.⁵⁵⁴ The 28-miles stretch of river between the mouths of the Powder and Tongue Rivers was relatively devoid of timber and the *Josephine*'s crew spent much time cutting timber for fuel while being guarded by Army soldiers. Firewood became plentiful again above the mouth of the Tongue River, where the crew members soon found massive cottonwood trees that were five or six feet wide.⁵⁵⁵ The commander of the expedition, Gen. Forsyth, remarked in his report of the expedition that the forested islands were "so handsome that they almost make the voyager believe that they are the well-kept grounds pertaining to some English country-house. I never saw so fine a growth of cottonwood in my life as on

⁵⁵² Hanson, *The Conquest of the Missouri*, 199.

⁵⁵³ Hanson, *The Conquest of the Missouri*, 199.

⁵⁵⁴ Hanson, *The Conquest of the Missouri*, 199.

⁵⁵⁵ Hanson, *The Conquest of the Missouri*, 202; Schneiders, *Big Sky Rivers*, 40-43.

the Yellowstone twenty-five miles above the Tongue River.”⁵⁵⁶ It is likely that these manicured-looking landscapes were the result of a combination human and natural forces. The undergrowth of the forests could have been trimmed back by hungry horses and ponies if there were Native American winter-camps in the area. Alternatively, the open forests could have been the result of active small-scale burning by tribes in an effort to both encourage game animals in the areas and to allow for clean shooting-lanes when hunting these game animals.⁵⁵⁷

Up until the point when the *Josephine* reached the Tongue River they had still yet to encounter any Native Americans, but that changed around twilight on May 30th when the vessel rounded a bend in the river and steam-stumble-upon a sizable Indian camp. The Native Americans were just as surprised by the new arrival, and based on their reaction, they were likely affiliated with the Sioux; the group quickly abandoned their camp. The soldiers onboard the steamboat were also surprised and did not have time to even contemplate an attack, much less execute one.⁵⁵⁸ Although there was no conflict from this interaction, the local tribes were now aware of the *Josephine*'s presence. For the rest of the journey, those onboard the steamboat observed Indian smoke signals from

⁵⁵⁶ Hanson, *The Conquest of the Missouri*, 202-3

⁵⁵⁷ Williams, *Americans and their Forests: A Historical Geography*, 43.

⁵⁵⁸ Hanson, *The Conquest of the Missouri*, 203.

the surrounding hillsides and bluffs. These signals warned others Indian bands of the Euro-American steamboat's presence.⁵⁵⁹

In the stretch of water above the mouth of the Tongue River, the *Josephine* encountered massive herds of buffalo crossing the river. The buffalo were making their seasonal migration to the northern plains from the mountainous foothills where they had spent the winter time.⁵⁶⁰ The presence of the buffalo had most likely drawn the Native Americans to the valley. This human- buffalo connection was enduring even as the herd-sizes diminished, and tribes still integrated buffalo hunting into their seasonal round.

Past the Big Horn River and into the Narrows

On June 1st the *Josephine* passed the mouth of the Rosebud River, and the following afternoon steamed to the mouth of the Big Horn. This was one of the largest affluents of the Yellowstone River. Draining from the Big Horn Mountains in the west, the mouth of the Big Horn River was 150-yards wide when the *Josephine* arrived. Grant Marsh steamed the *Josephine* into the channel of the Big Horn and navigated upstream through muddy chutes and channels for twelve miles before finally being stopped by the shallows. The *Josephine* had established the Big Horn's head of navigation, at least for the time being.⁵⁶¹

⁵⁵⁹ Hanson, *The Conquest of the Missouri*, 203.

⁵⁶⁰ Hanson, *The Conquest of the Missouri*, 218.

⁵⁶¹ Hanson, *The Conquest of the Missouri*, 214.

Despite the large volume of water that the Big Horn contributed, the Yellowstone River was still between 300 and 1000 yards-wide above the mouth of the Big Horn and did not appear any diminished. This changed on June 3, twenty-seven-miles upriver from the Big Horn, when the cliffs closed in on either side of the shore and the river's channel contracted. Up until that point the speed of the Yellowstone's main channel had averaged approximately four miles per hour.⁵⁶² Now, as the river channel was contracted by the surrounding landscape, the speed of the main channel had risen to nine miles per hour.⁵⁶³

This was the aptly-named Narrows of the Yellowstone River. No matter how much steam Grant Marsh and the engineers of the *Josephine* put into their efforts, they could not stem the current on engine-power alone. Marsh's biographer described how: "every pound of steam was crowded on the *Josephine*'s boilers, and her paddle-wheel beat the water into foam, but the upmost speed she could make was one-sixth of a mile an hour, and most of the time she seemed to be standing still."⁵⁶⁴ For the first time on this journey, Grant Marsh ordered the *Josephine*'s sparring system into use; the physical labor of the crew and the work of the vessel's auxiliary technologies forced the boat through the tight and turbulent section that could not be stemmed with primary steamboat

⁵⁶² Hanson, *The Conquest of the Missouri*, 199.

⁵⁶³ Hanson, *The Conquest of the Missouri*, 215.

⁵⁶⁴ Hanson, *The Conquest of the Missouri*, 215.

technologies alone.⁵⁶⁵ The forces of the river were too strong for the basic technological capabilities and required human effort and diversified types of mechanical technology to augment the energy exchange between river, technology, and human workers.

Above the Narrows the river widened again and made for easier progress, a welcome situation for the crew of the vessel. All onboard were even more enthusiastic that afternoon, when the famous landmark Pompey's Pillar came into view. This butte had been named for Sacajawea's son, Pompey, by Captain William Clark on his return journey from the Pacific Ocean in 1806, when he and Merriweather Lewis and Clark had taken separate routes on their return journey to the USA.⁵⁶⁶ All onboard the *Josephine* spent the rest of the day exploring around the culturally significant sandstone butte, a place mythologized in lore of the American West and a symbol of the expansion and conquest that Lewis and Clark's expedition embodied. Finding Capt. Clark's name inscribed near the top of the landform, the soldiers and crew members added their own names to the rock, further cementing the United States' land-claim in the region. Captain Grant Marsh followed suit, and carved: "*Josephine*, June 3, 1875."⁵⁶⁷

On the northern shore of the river, opposite the mouth of the Pryor's Fork, the *Josephine* found a large camp of Crow Indians and their allies. The Crow tribe had long considered the Yellowstone Valley home territory and referred to the river as *E-chee-*

⁵⁶⁵ Hanson, *The Conquest of the Missouri*, 215.

⁵⁶⁶ Hanson, *The Conquest of the Missouri*, 216.

⁵⁶⁷ Hanson, *The Conquest of the Missouri*, 217.

dick-karsh-ah-shay, or Elk River; and the landscape was still thick with game.⁵⁶⁸ Unlike the response from the Sioux camp they had encountered near the Tongue River, the Crow welcomed the *Josephine* and her officers. It was likely that the Crow saw the presence of the steamboat in this new terrain as a good sign for offensive movements against their enemies, the Sioux. In all, the camp consisted of 351 lodges: 270 Crow lodges, 50 Nez Perces lodges, twenty Hidatsa lodges, ten Gros Ventres lodges, and one lodge of Bannock (Shoshone) Indians.⁵⁶⁹

All of the Native Americans in the camp were en route down the Yellowstone to go hunt buffalo in the valley of the Big Porcupine River. The American Bureau of Indian Affairs had given many Sharp's carbine rifles to the Crow in order to protect themselves from the Sioux.⁵⁷⁰ It was also a way to outsource some of the violent fighting against the Sioux, saving a few Euro-American lives in the process and intermingling Crow warriors into the American imperialist subjugation of other Native peoples. Every Indian man in the camp was armed with one of these quality guns. The government agency had also provided them with 15,000 rounds of ammunition for the weapons, giving the tribe confidence to boast that if Sitting Bull and the rest of the Sioux Nation could be forced into battle they would surely be defeated.⁵⁷¹ The Crow members of this hunting party

⁵⁶⁸ Red-Elk, Louis. "When Raptors Visit," *Mountains Journal* (2019).

⁵⁶⁹ Hanson, *The Conquest of the Missouri*, 218.

⁵⁷⁰ Hanson, *The Conquest of the Missouri*, 219.

⁵⁷¹ Hanson, *The Conquest of the Missouri*, 219.

were also horse-rich, with “vast herds of ponies” that “seemed to be grazing everywhere about the village.”⁵⁷²

After spending the night tied-up near the Crow hunting camp, the *Josephine* steamed further upstream the next day and encountered yet another challenging rapid. After struggling up the cataract and finally passing through at twilight, Captain Marsh gave it the name “Hell’s Roaring Rapids.”⁵⁷³ If they hoped to go any further they would have to use a combination of warping and sparring continually to make any progress. Forsyth and Marsh discussed the matter and came to the conclusion that “no adequate reward for the labor involved was to be gained by going further.”⁵⁷⁴ They had reached a critical point of energy exchange in the Yellowstone Valley, where the force of the current was accentuate by the angle and composition of the riverbed, all of which proved too much for the combined force of human labor and mechanical technology to overcome in a safe and timely fashion.

Grant Marsh and the *Josephine* had set another record, yet again establishing the head of navigation for the Yellowstone River. For Marsh personally, this was the third time that he had created a new head of navigation on this stream in two years. In a way, these were three incremental conquests of the Yellowstone, evidence of the American expansionist ideology of Manifest Destiny and American exceptionalism. Through hard

⁵⁷² Hanson, *The Conquest of the Missouri*, 219.

⁵⁷³ Hanson, *The Conquest of the Missouri*, 220.

⁵⁷⁴ Hanson, *The Conquest of the Missouri*, 220.

physical labor and mechanical maneuverings, the steamboat and its crew had reached 46-miles above Pompey's Pillar, 250-miles above the mouth of the Powder River (the previous head of navigation), and a whopping 483-miles from the confluence of the Yellowstone with the waters of the Missouri River. As the crew flew, the vessel was only 46-miles from Yellowstone National Park, which had been established three years earlier.⁵⁷⁵ Grant Marsh again carved the name of the vessel and the date into the landscape, this time in a massive cottonwood tree, to record their passage and their accomplishment. That afternoon, June 7, the *Josephine* turned around and headed back down the Yellowstone River towards the Missouri.⁵⁷⁶

Within four days the *Josephine* was back to Fort Buford, on the Missouri River, where they offloaded their military escort, and then continued down to Bismarck with the remainder of the passengers and cargo. The officers from the expedition reported to their superiors that the Yellowstone might offer a better route to supplying the growing settler-colonial outposts of Montana than the Missouri River route. All were confident that the Yellowstone could be run as far as the Big Horn River, and some believed it could be commercially navigated even further.⁵⁷⁷ The officers did not have to wait long to see their theories tested; the journey of the *Josephine* quickly inspired visions of grandeur for a steamboat-wagon transportation route through the Yellowstone Valley. Entrepreneurs

⁵⁷⁵ Hanson, *The Conquest of the Missouri*, 220.

⁵⁷⁶ Hanson, *The Conquest of the Missouri*, 220.

⁵⁷⁷ Hanson, *The Conquest of the Missouri*, 221.

envisioned how steamboats could be the way to profit from transportation in the Yellowstone Valley before the plodding progress of the Northern Pacific Railroad crews finally worked their way into the drainage.

Influence on the Vision of Bozeman Boosters

The journey of the *Josephine* in 1875 had implications for everyone living in the region, Native American and Euro-American alike, as well as influencing the NPRR designs for the valley and the US government's intentions in Montana Territory. It had a major impact on the way Euro-American settlements in Montana perceived themselves as well. Residents of Bozeman, Montana latched onto reports of the *Josephine* and envisioned a combination train-steamboat-wagon route connecting Bozeman directly to the Northern Pacific railhead in Bismarck. They pictured goods and people traveling up the Missouri and Yellowstone Rivers to the mouth of the Big Horn, where a wagon road would then follow the Yellowstone to Bozeman Pass, climb out of the Yellowstone Valley and drop into the Gallatin River drainage, where Bozeman was located.⁵⁷⁸

The first Euro-American settlers that attempted to make this vision a reality were a group of Bozeman residents led by Fellows D. Pease.⁵⁷⁹ They departed Bozeman on June 15, 1875, the same date that Bozeman's newspaper, the *Avant Courier*, issued an

⁵⁷⁸ Hanson, *The Conquest of the Missouri*, 221-2.

⁵⁷⁹ McLemore, Clyde. "Fort Pease the First Attempted Settlement in Yellowstone Valley," *The Montana Magazine of History* 2, no. 1 (1952): 18.

extra edition with information about the *Josephine*'s exploits on the Yellowstone.⁵⁸⁰ The group of forty settlers soon reached the Big Horn River and built a small fortified stockade which they named Fort Pease.⁵⁸¹ While their business plan may have been conceptually sound, the men that built Fort Pease had not counted on the constant harassment that they received at the hands of the Sioux. Under near-constant assault throughout the autumn and winter months, those left alive at Fort Pease were rescued in March, 1876 when a column of cavalry horsemen from Fort Ellis arrived and escorted them back to Bozeman. The rag-tag settlers abandoned Fort Pease to the history books, though, like Grant Marsh the previous year, they left the American flag raised high over the fort in a last show of Euro-American defiance.⁵⁸²

Achilles Lamme & Nelson Story.

Other local boosters in the town of Bozeman latched onto the success of the steamboat *Josephine* and rallied around the idea of a transportation system through the Yellowstone Valley. In the autumn of 1875, two Bozeman residents banded together to form a new business: the Yellowstone Transportation Company. The business partners, Achilles Lamme and Nelson Story, wasted no time in getting started on their venture. Lamme and his son Edward booked passage to the east with the goal of purchasing or

⁵⁸⁰ McLemore, "Fort Pease the First Attempted Settlement in Yellowstone Valley," 20.

⁵⁸¹ Hanson, *The Conquest of the Missouri*, 222.

⁵⁸² Hanson, *The Conquest of the Missouri*, 225.

building a steamboat for use on the Yellowstone River. At the same time, Nelson Story made preparations to connect Bozeman to the head of navigation on the Yellowstone by wagon.⁵⁸³ The *Avant Courier* in Bozeman expressed the town's optimism at the prospect of a steamboat-wagon route up the Yellowstone, writing: "The Landing of the first boat at the head of navigation on the Yellowstone next season will be the dawn of a new era in Eastern Montana, bringing with it general prosperity to our people, and making Bozeman the most important town in the Territory."⁵⁸⁴ Towns like Bozeman had learned from the experience of Fort Benton that steamboats held the power to transform places that were connected to them. Steamboat technology had changed these individuals' concept of what was possible in their landscape and spurred new activity in the process.

The 150-foot steamboat that Achilles and Edward Lamme acquired for the Yellowstone Transportation Company was built in Jeffersonville, Indiana and was aptly named the *Yellowstone*.⁵⁸⁵ With the outbreak of war with the Sioux during 1876, the steamboat *Yellowstone* was unable to enter its namesake river during its initial season.⁵⁸⁶ The Yellowstone Transportation Company finally succeeded in shipping goods to Bozeman via the Yellowstone River route on board their steamboat *Yellowstone* in 1878, emphasizing that their transportation company concept was operable. But their business

⁵⁸³ Lass, "Steamboats on the Yellowstone," 31.

⁵⁸⁴ Lass, "Steamboats on the Yellowstone," 31.

⁵⁸⁵ Lass, "Steamboats on the Yellowstone," 31.

⁵⁸⁶ Lass, "Steamboats on the Yellowstone," 30-31.

venture came to an untimely end the next year, in 1879, when their steamer *Yellowstone* struck a rock ledge in Buffalo Rapid and sank. The vessel's cargo was salvaged from the wreck and shipped to Bozeman by wagon, while the thick oak hull-timbers were scavenged several years later and used to build a stout lodging house in the new settlement of Miles City.⁵⁸⁷

Little Big Horn – 1876

In the summer of 1876, riverboat pilot Captain Grant Marsh again headed up the Yellowstone River as a logistical support vessel for the US Army's offensive mission against the Sioux and their plains allies the Cheyenne and Arapaho. Marsh piloted the steamboat *Far West* into the Yellowstone drainage with supplies and soldiers for General Custer's Calvary, and navigated up to the mouth of the Rosebud River, where a conference was held onboard the *Far West* as the commanding officers of the mission planned their offensive.⁵⁸⁸ Different overland columns of US forces would approach a suspected Sioux camp from different directions in order to both surprise and confine the Native American camp, forcing them into confrontation. General Custer, whose column was likely to arrive at the camp first, was encouraged to take extra Calvary soldiers and

⁵⁸⁷ Lass, "Steamboats on the Yellowstone," p36, fn 35.

⁵⁸⁸ Hanson, *The Conquest of the Missouri*, 255-7.

the three Gatling guns which had been transported upstream by the steamboat.⁵⁸⁹ Custer refused both offers, stating that they would slow down the movement of his forces.

On the morning of June 22, 1876 Grant Marsh busily organized movement of the Army supplies that the columns would bring with them on their missions. This included 100 rifle rounds and 24 pistol rounds for each soldier, as well as food for 15 days in the field and 12lbs. of oats to feed their horses, all of which had been carried up by steamboat.⁵⁹⁰ Two days later, Marsh and the *Far West* steamed to the mouth of the Big Horn River, where the crew of 30 deck hands offloaded more material supplies for US Army troops on this excursion. The infantry troops under Gibbon's command received eight-day's worth of rations from the hold of the *Far West* and then the steamboat was used to ferry the infantry soldiers to the south bank of the Yellowstone, where they would commence their overland trek into the Big Horn drainage.⁵⁹¹

The commanding officer of the whole mission, General Terry, ordered Marsh to ascend the Big Horn River with the *Far West* so as to have reserve supplies close-at-hand for the expected confrontation. Marsh had his crew chop reserves of firewood and then set out on his ordered mission.⁵⁹² The river channel of the Big Horn was so shallow and contorted that the *Far West* resorted to warping the vessel by connecting cables to the

⁵⁸⁹ Hanson, *The Conquest of the Missouri*, 259.

⁵⁹⁰ Hanson, *The Conquest of the Missouri*, 259-60.

⁵⁹¹ Hanson, *The Conquest of the Missouri*, 268-9.

⁵⁹² Hanson, *The Conquest of the Missouri*, 268-70.

shore and using their steam-capstans to pull the steamboat upstream inch-by-inch. The river channel was so narrow that the crew of the *Far West* was able to attach warping cables to both shores of the river.⁵⁹³ This was a new and novel application of steamboat auxiliary technology, something that had never been done, because steamboats typically operated on rivers that were hundreds of feet wide, if not larger. Marsh and his crew had adapted their existing technologies to meet the challenges of a new operating environment.

Marsh and the *Far West* steamed beyond the mouth of the Little Big Horn River, proceeding up 15 miles further before returning to the Little Big Horn, where they had been ordered to wait.⁵⁹⁴ There they received news of Custer's stunning loss at the Battle of the Little Big Horn from one of Custer's Crow scouts, who had managed to escape.⁵⁹⁵ Over the next days the men on board the *Far West* started to take on wounded returning from the battlefield and took them down to the Yellowstone River. When Marsh finally received orders to take the wounded down to Bismarck he departed with the *Far West's* flag at half-mast and made a desperate attempt to get downstream as fast as possible with the wounded soldiers. It was a record-setting run, with the *Far West* steaming the 710 miles from the mouth of the Big Horn River to Bismarck in 54 hours.⁵⁹⁶ At the same

⁵⁹³ Hanson, *The Conquest of the Missouri*, 270.

⁵⁹⁴ Hanson, *The Conquest of the Missouri*, 272-3.

⁵⁹⁵ Hanson, *The Conquest of the Missouri*, 276-7.

⁵⁹⁶ Hanson, *The Conquest of the Missouri*, 306.

time, the steamboat *Far West* brought news of Custer's defeat to the rest of the country and the world. The events of the Battle of the Little Big Horn would have far-reaching consequences that rippled through the northern plains, eventually bringing the Sioux-USA conflict to a head.

This chapter portrayed the many ways that steamboats in the Yellowstone Valley influenced the lands and peoples of the region as railroad lines pushed farther into Montana Territory from the east and south. The Yellowstone River was a unique natural and cultural landscapes for steamboat travel, differentiated from the Missouri River in meaningful ways that required adaptations of labor, materials, and technology. The use of steamboat safe-spaces as a way to survey the valley, as well as a reasonably efficient way to move military supplies and soldiers into the region, highlighted the unique aspects of steamboats on the Yellowstone River. They influenced the ways that human populations in the region, both Indigenous and Euro-American, interacted with their surroundings. The Sioux saw steamboats on the Yellowstone as violating one of their few remaining refuges in the areas, while the Crow hunting party Marsh encountered viewed steamboats in the valley as a way to re-acquire the lands they had lost to the Sioux. Steamboats on the Yellowstone helped the US Army establish more outposts in the region, while also moving personnel and heavy weaponry like Gatling guns into the area. Euro-American settlers in places like Bozeman had their vision of the Yellowstone Valley changed by steamboat travel, inspiring opportunistic missions like the Pease party and Lamme's Yellowstone Transportation Company. But despite these meaningful

connections to lands and cultures, the critical importance of steamboat travel into Montana would continue to wane during the late 1870s and early 1880s. To compete with the encroaching railroads, steamboat companies attempted to find new sources of revenue and new types of vessels. The Coulson Packet Company, Grant Marsh's employer was one of the businesses that increased the physical size of their vessels as a way of remaining competitive. The next and final chapter of this project focuses on the steamboat *Montana*, one of the few mountains-steamboat behemoths plying the waters of the Upper Missouri River basin at the end of the steamboat era in the region.

CHAPTER EIGHT

CONCLUSION

Steamboat *Montana*

The steamboat *Montana* was a large and luxurious stern-wheeled steamboat, a crystal-plate-type vessel of a scale and design never before used on the Far Upper Missouri River. It was 250-feet long and 48-feet wide, weighing 959-tons unloaded.⁵⁹⁷ Samuel Coulson's Missouri River Transportation Company ordered it built in the Pittsburg area in 1878, along with two sister-ships, the *Wyoming*, and the *Dacotah* [sic]. They each cost approximated \$48,000 to construct, and were sumptuously decorated with custom furniture, fancy upholstery, fine table-settings, and pianos.⁵⁹⁸ All three of these large-scale vessels were launched for the 1879 season with the goal of operating in the Fort Benton trade.

In the first season of operation in its namesake territory, the *Montana* was feted for carrying the largest-ever cargo of goods to the Fort Benton shoreline, a whopping 600-tons of materials in a single load.⁵⁹⁹ It's initial glory quickly faded later that summer

⁵⁹⁷ Lass, William E. *A History of Steamboating of the Upper Missouri River* (Lincoln, Nebraska: University of Nebraska Press, 1962), 109.

⁵⁹⁸ Lass, *A History of Steamboating of the Upper Missouri River*, 109

⁵⁹⁹ Lass, *A History of Steamboating of the Upper Missouri River*, 110 ; Corbin, Annalies and Bradley A. Rodgers. "Steamboat Montana (1879–1884)—Leviathan of the American Plains." *International Journal of Nautical Archaeology* 36, no. 1 (2007), 62.

when a wind storm hit the vessel near Bismarck, slamming the *Montana* into the shore and causing serious damage. It cost the Coulson Company \$2,000 - \$3,000 to have the vessel towed back to St. Louis and repaired.⁶⁰⁰ The *Montana* spent the next few years plying the waters around the St. Louis area, far from the turbulent mountain waters for which she was built. During the its sixth season of operation, in 1884, while navigating on the lower Missouri River, the *Montana* collided with the railroad bridge at St. Charles, Missouri. As the boat started to sink, the pilot quickly steamed them to shore and beached the vessel so its cargo and valuable machinery could be salvaged.⁶⁰¹ Railroad tracks, and the bridge they used to span the Missouri River, spelled the demise for the steamboat *Montana*, much like the railroad industry heralded the end of the steamboat travel in Montana Territory. A new transportation technology had taken over and steamboats in the region would soon be a thing of memory.

The completion of the Transcontinental Railroad in 1869 was the first blow to steamboat hegemony in the Montana transportation industry, and as railroad tracks inched closer to place like Butte and Bozeman, steamboat operators knew that rail linkages would likely be the demise of their industry. The Utah and Northern Railroad expanded north during the mid and late 1970s, constructing railroad tracks through

⁶⁰⁰ Lass, *A History of Steamboating of the Upper Missouri River*, 110.

⁶⁰¹ Corbin, "Steamboat Montana (1879–1884)—Leviathan of the American Plains," 62.

southern Idaho on the way to the mining communities in southwestern Montana, like Butte, where the tracks finally reached in 1881.⁶⁰² This rail connection, the first to reach into the Montana Territory, was the opening of the railroad era in the region. From the east, the Northern Pacific Railroad work crews continued laying tracks up the valley of the Yellowstone River, following the survey of the valley in the early 1870s. Businesses like Coulson's Missouri River Transportation Company sought to overcome increased rail competition by enlarging their vessels. The construction of the *Montana*, *Wyoming*, and *Dacotah* were a response to railroad pressures; Coulson hoped that increasing carrying capacity, for both cargo and passengers, would result in economies-of-scale savings and reduce overall transportation costs.⁶⁰³

I. G. Baker's and Company, the other main Montana steamboat transport line in the late 1870s, competed with the railroad operations in a different way. Baker diversified his business operations by carrying Canadian military supplies for use in the plains and mountains of western Canada.⁶⁰⁴ The Canadian military's pattern of steamboat use was different than the way the US government employed the vessels. The Canadian forces relied on Missouri River steamboats as a general transportation link for the movement of cargo and supplies. Between 1875 and 1883, nearly one-third of all

⁶⁰² "New Rail Route to Montana via the Union Pacific and Utah & Northern Railroads: Save Money, Time and 1,000 Miles of Distance to All Points in Montana and Yellowstone Park," *Union Pacific Railroad Company and Utah & Northern Railroad*. Omaha, Neb.: Union Pacific, 1879.

⁶⁰³ Corbin, "Steamboat Montana (1879–1884)—Leviathan of the American Plains," 62.

⁶⁰⁴ Corbin, "Steamboat Montana (1879–1884)—Leviathan of the American Plains," 38-9.

supplies coming through Fort Benton were destined to travel up north into Canada.⁶⁰⁵ After being offloaded from Missouri River steamers, wagons carried goods up the Whoop-Up Trail, an old whiskey smuggling route from Fort Benton to the illegal whiskey trading post of Fort Whoop-Up.⁶⁰⁶ To stop this illicit trade, Euro-Canadian forces constructed Fort Macleod; this new fort was garrisoned with forces from the Canadian Northwest Mounted Police and was supplied by Missouri River steamboats.⁶⁰⁷

Travel on the Yellowstone River was another way for steamboat companies to continue operating despite railroad competition. Following in the wake of the steamboat *Josephine's* 1875 journey up the Yellowstone River, other steamboat companies operating in Montana Territory diversified their routes and started moving people and materials up the Yellowstone River as far as the Big Horn.⁶⁰⁸ During this time, steamboat traffic on the Missouri River declined, with only six boats reaching Fort Benton in both 1875 and 1876.⁶⁰⁹ None the less, the US military operations against the Sioux, both in the Yellowstone Valley and elsewhere on the plains, kept steamboats busy throughout the 1870s.

⁶⁰⁵ Corbin, "Steamboat Montana (1879–1884)—Leviathan of the American Plains," 38-9.

⁶⁰⁶ Corbin, "Steamboat Montana (1879–1884)—Leviathan of the American Plains," 41.

⁶⁰⁷ Corbin, "Steamboat Montana (1879–1884)—Leviathan of the American Plains," 38-9.

⁶⁰⁸ Lass, William E. "Steamboats on the Yellowstone." *Montana: The Magazine of Western History* 35, no. 4 (1985): 35-38.

⁶⁰⁹ Lass, *A History of Steamboating of the Upper Missouri River*, 130-1.

The formation of the Yellowstone National Park, in March 1872, also had ramifications for the use of steamboats in Montana, impacting demand for the vessels throughout the decade and influencing the way that new travelers in the region were able to access the park. When Philetus W. Norris, the second superintendent of Yellowstone National Park, headed up the Missouri-Yellowstone River steamboat route in 1877, he was frustrated by the lack of efficient steamboats on the shallow river. In that year, demand for steamboats on the Missouri River had risen again and there were 25 steamboats that docked at Fort Benton for the season.⁶¹⁰ The US government and military contracts for the year comprised much of that business, leaving private travelers and businesses without many viable options for shipping goods by river into Montana.⁶¹¹

In his report to the Secretary of the Interior in 1877, Yellowstone Park superintendent Norris noted that due to the government contracts with steamboat companies, the Yellowstone route to the new national park had “a totally inadequate supply of necessary light draught powerful steamboats, or officers of experience on that route.”⁶¹² Norris continued to expound on the importance of steamboat travel to the region and the necessity of having the proper technological equipment and human expertise to run the complicated Yellowstone channel. In his report, Norris emphasized

⁶¹⁰ Lass, *A History of Steamboating of the Upper Missouri River*, 131.

⁶¹¹ Norris, P. W. *Report upon the Yellowstone National Park to the Secretary of the Interior, by PW Norris Superintendent* (US Government Printing Office, 1877), 337.

⁶¹² Norris, *Report upon the Yellowstone National Park to the Secretary of the Interior*, 337.

the importance of using steamboats crafted specially for shallow rivers by noting the difficulties with the “season's unfortunate experiment of running huge, loggy Ohio and Mississippi packets upon the large and beautiful but unknown, uniformly rapid, and often rocky Yellowstone.”⁶¹³ While railroad traffic would soon eclipse the use of steamboat transportation in Montana, Yellowstone and Missouri River steamboats still had work to do in servicing niche markets for years to come.

Final Analysis

Social History: Conquest and Imperialism

The themes of conquest and imperialism run throughout the story of steamboats on the northern plains and badlands of the Yellowstone and Far Upper Missouri Rivers. This is true of the physical progress steamboats made up the rivers themselves, as well as the ways they facilitated imperialist conquest through the material and cultural elements they transported upstream in their passage.

In a physical sense, the movement of steamboats upstream through the dynamic rapids and shallows of the Missouri and Yellowstone were conquests of these rivers. These expeditions were attempts at dominance over a physical landscape by humans and their tools; this was exemplified in the title of riverboat pilot Grant Marsh's biography: *Conquest of the Missouri River*. The continual competition to establish higher heads-of-

⁶¹³ Norris, *Report upon the Yellowstone National Park to the Secretary of the Interior*, 338.

navigation on the river, along with the glory and rewards for these accomplishments, were all examples of the American expansionist mentality during the mid-19th century. These riverine triumphs, and the cultural associations that went with them, highlight the theme of conquest, both in thought and action, running through the expansion of steamboat travel in the Upper Missouri River basin.

The conquest of and dominance over Native peoples in the northern Rocky Mountains and plains is a prevalent theme throughout the stories of steamboats in Montana. Euro-American imperialist forces, both physical and cultural, attempted to assert control and power over the Native American communities in the Missouri River basin in many ways. The use of steamboats to support US military missions in the region provided numerous examples of the way this technology facilitated the subjugation of Native tribes in the plains and mountains. The movement of treaty goods and annuities as payment for lost lands and cultural sacrifices was another way that steamboats aided the subjugation of Native populations in Montana. By providing material goods as compensation for territorial dispossession and forced cultural change, treaty payments were a type of paternalistic ‘carrot’ offered to Native communities, while suppression by military forces was the ‘stick’ of punishment; steamboats played critical roles in moving material for both approaches to Indigenous policy. Beyond these elements of physical control, Euro-American white-washing of the Montana landscape was another form of American imperialism and conquest facilitated by steamboats. On the Missouri and Yellowstone Rivers, Crow and Sioux and Blackfeet place-names were replaced with those of Euro-American politicians and US Army officers. This had the effect of

displacing Native American place-names and the cultural associations they went with them.

American imperialist influences can also be seen in the exploitation of the lands encompassing the Upper Missouri River basin. The fur trade was a way to profit from and exploit the natural resources and Native communities; steamboats facilitated these exchanges by transporting the trade goods upstream and the furs back downstream. This barter economy helped Euro-Americans reap the rewards from Indigenous labor in the beaver and buffalo trade, while simultaneously entangling Native communities in the cultures and economies of Euro-America. Beyond the capitalist profiteering in these exchanges, the general activities of resource extraction and the exploitation of natural landscapes in the region highlight the Euro-American imperial mechanisms active in the Montana region. The slaughter and extirpation of the *Bison bison* from the northern plains was facilitated and expedited by steamboat traffic, while the consumption of riverside timber and game by steamboats and their crews emphasize the intensive use of materials required to fuel steamboat missions. All of these were different manifestations of the Euro-American imperialist goals of conquest and dominance over lands and peoples in the American West.

Social History: 'Facing East' Perspective

In striving to understand the many broad ways that steamboat imperialism affected Native American communities in the region, this study has attempted to present Indigenous populations with a long durée history of cultural continuity. The analysis of early human activity on the Montana landscape emphasized the extensive timeline of

human history in the region and the study of tribal backgrounds and cultures, albeit brief and insufficient, allowed Native American individuals to be better understood in light of the steamboat era. Different tribes had unique cultures and traditions. This study did not have space to explore all of these variations in-depth, but does make an effort to distinguish between different groups of Native peoples and attempts to understand how they were impacted by steamboat travel in distinct ways. Beyond these tribal variations, this analysis of steamboat case studies sought out examples of Native individuals which emphasized emotion, personality traits, and struggles (both internal and external). By highlighting these human characteristics, Native American individuals took on more realistic dimensions in their interactions other groups of people and the arriving steamboats.

Social History: New Meanings and Practices

The presence of steamboats in the Montana landscape instigated many changes in the region, influencing the way that peoples interacted with each other and with the natural environments around them. By changing the meanings or importance of certain locations and materials, steamboat travel prompted intercultural and material exchanges revolving around new places and things. With new significance attached to them, locations and objects stimulated new human activities and practices, including new interactions between groups of people as well as activities related to acquiring, protecting, maintaining, or destroying material elements.

The practices of Native American fur trappers had been influenced by intercultural exchanges long before steamboat travel on the Upper Missouri River, but

steamboats facilitated the movement of furs, intensified the trade, and spurred new trading dynamics. Steamboat technology also influenced the way Euro-American gold miners understood the northern Rocky Mountain landscape and the best way to access gold mining regions. They developed new transportation patterns, up the river with steamboat technology, down the river with the natural flow, adding new significance both to the river and overall network of transportation to the gold mines. The experiences of Native American woodhawks provided another example of how steamboats in Montana created new meanings and practices. Loss of territory and changes to seasonal activities had left material gaps in some Native American communities that needed to be filled with different work. Chopping wood for passing steamboats provided an opportunity to supplement lost material income, creating new employment and new practices, and integrating a new form of labor into the seasonal round for some Native individuals and groups.

Aside from supplying wood for steamboats, the upriver movement of people and supplies changed the material and cultural relationship between Native peoples and the Missouri River system. Before the arrival of steamboats, Native peoples interacted with the river as a source of their own transportation and sustenance, the river was a place of community, a place for winter camps and grazing pony herds. But the steamboat era in Montana mutated the cultural associations with rivers, changing the natural downstream current and its benefits into a turbulent upstream flow of settlers, soldiers, finished-products, and annuity goods. In the Yellowstone River valley, a region which had long been a refuge away from Euro-American forces, steamboats helped change the riverine

landscape into a zone of battle and development. Native peoples understood all of this, they understood what steamboats were and what they were capable of doing; throughout the Montana steamboat era they continued to learn the dangers posed by steamboats and the varied imperialist ideologies they embodied.

For Euro-American travelers in the Montana region, steamboats also changed the meaning of the riverscape itself: the dry terrain of shore came to represent a more-vulnerable and dangerous space, whereas the river and the steamboats represented spaces of relative safety. When steamboats pulled over to the shore periodically to take-on firewood and to hunt game, the crew members on shore and the boats themselves were exposed to attack. But when steamboats were out in the river channel, the distance from shore provided a psychological safety buffer and the vessel's walls (along with other make-shift fortification elements like old boiler iron or sacks of corn) increased the sense of safety and security onboard the boats.

This safe-space concept was one force that stimulated Euro-American women to use steamboat transportation into the Montana region. As they traveled upstream, these women carried with them the concept of the women's sphere, a 19th century idealized zone of domestic and family activities which Euro-American women were expected to follow. Steamboats provided smoother and safer transportation to the growing settlements in Montana Territory, as least theoretically. In this way, steamboat travel offered a socially understandable and acceptable way for Euro-American women and their families to relocate to the northern Rocky Mountains during the territorial period. While overland travel was perceived as rough and dangerous, which it sometimes was,

the conceptual safe-space of steamboats made the vessels feel like an area protected from outside forces. This sense of safety and stability was not always well-founded, but the idea of comfort and security onboard steamboats empowered women to head upriver to the Montana settlements with their families in growing numbers.

Dynamic Energy Exchanges:
Landscapes, Humans, and Technologies

The study of steamboat travel on the rivers of Montana reveals the intertwined narratives of the natural environment, human beings attempting to live and thrive, and the technologies employed to help accomplish human goals. Human history and technology cannot be disentangled from the natural elements of the world, and this is seen in the physical construction and operation of steamboats themselves. Steamboats were constructed by people from materials found in natural landscapes; they were fueled by environmental elements which held stored energy. Steamboat designs changed to meet environmental constraints and when western steamboats were damaged by environmental forces they were repaired with material elements from the surround landscape and fixed by human toil. Even the motivations for steamboat use in the region were influenced by natural elements: furs and then gold drew many of the early steamers to the region, while the availability of cultivable lands brought more Euro-American settlers during the territorial period. As steamboat travelers proceeded upstream, they marked their progress with natural landforms like cliffs and buttes and rapids, environmental elements which took on socially-constructed significance.

Changes in the natural environment, including geological, climatic, and ecological forces, influenced the success or failure of steamboat transportation on western rivers. These were not environmental determinants, but they did shape the options available to people, influencing the development of technologies as well as the types of physical human labor required to overcome environmental challenges. In the process of fueling their technologies, and acquiring needed food for the journey, human workers engaged with both the natural and technological environments in physical, tactile ways. This was a three-way dynamic relationship of energy exchange, where environmental elements stimulated human and mechanical work, which were in turn fueled from the material landscape itself. The natural downstream force of the river was countered through a combination of human toil and mechanical advantage, but this was only possible when additional environmental factors were present, such as timber and game, to energize the technological and human elements.

An outgrowth of this changing energy dynamic was the development of new technologies to supplement human work and reduce the amount of human labor needed to accomplish goals. On steamboats this can be seen in the way certain auxiliary technologies were named for human activities. In *The Organic Machine*, Richard White explored this in his analysis of the replacement of Chinese workers in canning factories by machines, colloquially called “Iron C----” (using a racist derogatory term for Asians).

⁶¹⁴ There was a correlation to this on American steamboats when the manual capstan was replaced by the steam-capstan in the 1850s. This new steam-powered winch was called the “N---- Engine” throughout the Montana steamboat era, employing the racist word for the African Americans laborers tasked with operating the manual capstans in earlier days. By naming a mechanical technology after the human laborers that the technology replaced, steamboat workers showed their conceptual understanding for the way human labor could be supplemented by mechanical work. This was also seen in the aptly named “Doctor Engine,” a steam-pump which kept the boilers filled with water. This technology helped deck workers maintain sufficient water in the boilers; it got its name because personified a doctor’s role of keeping an engine healthy, reducing the danger of explosion and death.

Transportation Technology: Movement of
Materials, People, Cultures, and Ideas

Steamboats were a transportation technology that was critically important to the movement of materials, people, cultures, and ideas between the landscapes of Montana and the urban centers of the United States. From the very beginning of the Montana steamboat era, these vessels were responsible for helping to materially-connect the hinterlands of the northern Rocky Mountains and plains to industrial and agricultural operations in place like Pittsburg, St. Louis, and the growing hub of Chicago. At the

⁶¹⁴ Richard White. *The Organic Machine*. (New York: Hill and Wang, 1996), 31-32.

beginning of steamboat travel in Montana, the boats brought up products and goods for the fur trade, linking them to production facilities from St. Louis to Europe, as well as the farmers of Mississippi River settlements. On their return journeys the boats carried furs, and later gold, to add to the commodities exchanges of the United States. Annuity payments to Native American tribes came up river on steamboats, bringing more finished products and foodstuffs from the USA, while the transportation of military supplies meant steamboats also facilitated the movement of martial materials like guns, ammunition, cavalry horses, artillery pieces and machine guns. This mixture of commodities and finished products tied Montana materially to landscapes and production facilities thousands of miles away.

Steamboats facilitated the movement of many different people between landscapes as well, and these movements helped change the human demographics of the Upper Missouri River basin. At the start of the Montana steamboat era, the vessels brought fur company employees into the region for temporary residence, but most Euro-American steamboat travelers during the fur trading period were not there to settle. This changed with the discovery of gold and the quick expansion of settlement that went with it. Soon, steamboats were transporting many different people into the Montana region, including gold miners and immigrants, farmers and manual laborers, escaped slaves and free-blacks. Some of these individuals would call Montana home, while other continued moving elsewhere in the west. Euro-American women and families traveled upriver by steamboat too, altering the human demographics in the region and furthering cementing settlement.

Along with the growing number of people being transported on steamboats, came the movement of the cultures and ideas that they possessed. Christianity and the missionaries who preached its doctrines were carried up into the Montana landscape onboard steamboats, as were the concepts of capitalism and cash-based economies. Steamboats also imported physical elements of culture, such as saw-mills and quartz-mills, introducing industrial processes and ideas into the interaction between people and the Montana environment around them. The transportation of livestock was carried out on steamboats, adding to the early cattle ranching culture in Montana. All of these materials and ideas were transported on the decks and in the cabins of Missouri River steamboats; the river itself was the physical medium for this transfer, the natural tendril of communication on which steamboats plied their trade.

Time, Space, and Human Vision

The way that transportation technologies influence human perceptions of time and space is related to human understanding of the world around them. Steamboats travel to the Far Upper Missouri River changed the way that Euro-American populations conceptualized the time it took move between the United States and Montana. This compression of time brought the distant landscapes into closer temporal communication, both by the movement of people, and also through the transportation of information: letters, newspapers, serious matters and gossip. While this shortening of time between places was a change in mental perception which made the landscapes feel closer together, the physical reality was that steamboat travel to Montana often elongated the distance traveled. Boats were forced to take the winding river channel, ironically making the

cartographic distances between points longer by riverboat, though they were closer in time.

The augmentation of perceived time and distance by steamboats also affected human relationships with their surrounding environment, influencing human visions of opportunity and dangers in the world. Fur traders envisioned the use of steamboats in the Far Upper Missouri River as a way to increase profits, and diversify income streams. Gold rush migrants and the merchants who sold them supplies envisioned glittering hills of ore and saw steamboats as a new way to quickly access that wealth. Euro-American women and families used steamboats as a way to live out their envisioned lives in the American West, a way to make dream into reality within the existing social norms of the time. Settlers in places like Bozeman saw steamboats on the Yellowstone and envisioned a whole new transportation network up that stream, though the realities on the ground (and on the river) proved difficult. And throughout the whole Montana steamboat era, the US government and the US Army employed steamboat technologies and their crews to make their vision of a peaceful northern plains and mountains into a reality by subjugating and confining Native populations into smaller zones of occupation.

Changing Environments

The environmental and cultural ramifications of steamboat travel in Montana took many different forms during the years of the Montana steamboat era. Human cultural forces and their technology spurred new land use practices and altered the ways in which people interacted with their environment and understood their place on the landscape. One final anecdote about the intertwined narratives of human, technology, and

environment comes from riverboat pilot Grant Marsh's biography and reflects the way technology changed the human and natural geographies in the Yellowstone River Valley.

In recollecting his experience with steamboat travel on the Yellowstone River during the 1870s, Grant made a perceptive observation. He remembered: "During the early '70s, the absence of large timber in the [Yellowstone] valley was very noticeable. The cottonwoods, the largest tree indigenous to the section, were small and scattering, and it was difficult to find even green wood to cut, for though willow brush extended all along the banks, the individual trees were mere saplings."⁶¹⁵ Marsh attributed this to the fact that both the Crow and Sioux tribes possessed huge numbers of horses and they preferred to winter their herds in the riverside forests to protect against raids from rival tribes. He continued: "Forage being naturally poor in such localities, the animals gnawed the bark of the cottonwoods, the most palatable food they could find, and thus in the course of a few months the pony herd of a single camp would girdle and kill the cottonwoods for miles around."⁶¹⁶

When Marsh returned up the Yellowstone River around the turn of the century, he found the shores covered with mature cottonwood trees. He attributed this change to the removal of the local tribes, and their "calico ponies, with their gnawing proclivities," into the Indian reservation system.⁶¹⁷ Marsh's observation was insightful and provides a

⁶¹⁵ Hanson, *Conquest of the Missouri*, 161.

⁶¹⁶ Hanson, *Conquest of the Missouri*, 162.

⁶¹⁷ Hanson, *Conquest of the Missouri*, 162.

fitting example to end this study of steamboats in Montana. By attempting to remake the northern plains and mountains into a vision of civilization, Euro-American forces facilitated the extirpation of Native peoples and their horses from the valley.

As Marsh pointed-out, the presence of these peoples and their livestock had influenced the environmental dynamic of the landscape for years. By using steamboats as logistical military tools for the removal of these Native American communities, steamboats facilitated ecological changes in the Yellowstone Valley. This example speaks to the unintended and spiraling consequences of technology; steamboats were large consumers of timber for fuel and caused deforestation.⁶¹⁸ But in this case, due to complex interactions of humans and technologies, they caused more trees to grow. The give and take of these forces was a complex process. Steamboats used environmental resources to fuel their technologies and crews, but they also impacted human communities residing in the region, changing the way those communities engaged with the land, causing additional and unintended environmental changes.

⁶¹⁸ Schneiders, *Big Sky Rivers*, 183.

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