

“LIVING SYMBOLS OF THE HISTORIC AND PIONEER SPIRIT OF THE WEST”:
IMPACTS OF SETTLER COLONIAL LOGICS ON THE MANAGEMENT OF RANGE
EQUINES IN THE UNITED STATES

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DISSERTATION ABSTRACT

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Doctor of Philosophy

Department of Sociology

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Title: "Living Symbols of the Historic and Pioneer Spirit of the West": Impacts of Settler Colonial Logics on the Management of Range Equines in the United States

Legally required federal management of horse and burro (donkey) populations on the American West rangelands has proven to be a challenge for the United States government. Federal management has resulted in more than desired population numbers, environmental impacts, legal contestation, and unsustainable operating costs. Ultimately, the Bureau of Land Management (BLM), the agency tasked with overseeing most herds through their Wild Horse and Burro (WHB) Program, is tasked with "maintaining healthy horses on healthy rangelands". However, for many of their herd management areas, they have been unable to achieve these goals. As horses and burros are socially imbued with different cultural meanings, there are many factors that constrain or enable different social and managerial approaches to addressing concerns about horse and burro overpopulation. In this dissertation, I provide one way to think about federal lands management challenge by orienting within the social history and context of settler colonialism. The analyses reported in this dissertation come from a portion of a larger BLM-approved empirical research project focused on WHB Program decision-making more broadly. Over the course of 22-months, I engaged in interviews, field observations, and textual analyses as part of an institutional ethnography on WHB program decision-making. This dissertation shows that settler colonialism is ongoing and structured into the BLM's WHB Program through organizational, political, and legal mechanisms. These mechanisms were

developed long before current WHB Program personnel and largely exist outside of their decision-making discretion. Through this dissertation I problematize the settler colonial context as that which has informed environmental, cultural, and structural contexts for which people are concerned.

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CHAPTER 1: PREFACE

The presence of people with European ancestry in North America is a direct result of colonization that began in 1492. Over the course of a few hundred years, settlers from the Atlantic to the Pacific Coasts fought present Indigenous peoples to promote their own survival, prosperity, sovereignty, and land-use practices. This fight, though may not be apparent to settlers today, is ongoing within Indigenous communities that face United States control, jurisdiction, bureaucracy, and forced labor and economic relations within a global capitalist regime (Biolsi 2010; Bacon and Norton 2019). This fight for settler prosperity and political power, which has resulted in new social-ecological relations in North America, such as urbanization, did not end during the initial wave of colonization, but is enduring. Patrick Wolfe articulates that settler colonialism is a structure, not simply a one-time event, meaning that it has been imbedded within modern law, policy, economy, social relations, governance, education, etc. (Wolfe 2006).

This dissertation deals with the impacts of settler colonialism within a modern federal animal and environmental governance regime. Broadly, I ask, what are the contemporary manifestations of settler colonial logics? How have they been transmuted and institutionalized within modern, normalized, and legal state operations? I focus attention on one federal land management challenge that has been difficult for the United States to resolve, the management of range equines. These are horses and donkeys that have been brought by people to live in some of the most arid and semi-arid rangelands of present United States. Horses, although a returned specie to North America, mimic the settlement of Europeans and were deeply tied to their ability to colonize North America. Colonization would have been near impossible at the time it occurred without the use of these beings.

I was brought to this work, not because I have a deep connection with range equines, the ecologies they reside within, or Indigenous communities that engage in horse herd management. Rather, I came to this issue because of its depiction within settler news outlets. The process by which I entered this research project, the departmental and federal approval processes for its conduct, the methods I employed, and the way I engage in theorizing settler colonialism come from a settler method and practice, such as program-wide exploration versus a place-based approach. This informs my approach to studying the management of range equines and how I analyze and make sense of the information that I collected.

I am a settler and come from ancestors that were early U.S. settlers. They lived in the south and Midwest in the 1700s. On my father's side, I have ancestors that traveled and settled in the Southern Willamette Valley in Eugene, OR in the mid-1800's. They were laid to rest in the Eugene Pioneer Cemetery, next to the University of Oregon. On my mother's side, I have ancestors that traveled and homesteaded near the Sandy River in the Northern Willamette Valley in the mid-1800's. They ranched on the outskirts of present-day Portland. Now, 150 years later, I exist in the Willamette Valley. I was raised in Portland and am pursuing my Ph.D. degree from the University of Oregon in Eugene.

My interest as a settler in the topic of animal/environmental governance and settler colonial theory come from a few places. First, I recognize that federally managed lands are experiencing undesired and degraded environmental conditions, such as in the places where range equines are managed. Our planet is experiencing ecological transformations, specie loss, and rising temperatures. This is caused by colonization, globalization, international trade, a capitalist economic regime premised on the exploitation of people and places, racism, and many other processes. Second, I recognize that science, decisions, and thought are informed by those

who have the most power, typically those who have economic privilege. Decisions that benefit groups with the most power and privilege historically are embedded within the laws and practices that guide federal land management today. Third, and most importantly, Indigenous sovereignty continues to be circumscribed by white political power. I work with intention towards Indigenous land restitution, knowledge, management, decision-making, and sovereignty. Therefore, I employ a critical sociological perspective, meaning critically exploring the narratives, decisions, history, etc. as it relates to human-made decisions about range equines within the present United States. Exploring the social structures and events that produce contemporary environmental conditions in herd management areas is relevant not only for understanding why these places are the way that they are, but also for understanding how to make tangible changes to improve their conditions.

I first conceived of this research project in March 2020, the same month when government officials stopped social gatherings because of loss of life from the COVID-19 outbreak. I began by reading literature on horse and donkey environmental impacts and how ecologists' study and make sense of novel ecosystems. At this time, two scholars informed my understanding about horses from an Indigenous perspective. The first is Jonaki Bhattacharyya, who works with Xeni Gwet'in First Nation in present-day British Columbia. They studied the cultural values, perspectives, and management of range equines grounded within the place, culture, Xeni Gwet'in Nation, and regional ecologies of that place (Bhattacharyya, Slocombe, and Murphy 2011; Bhattacharyya and Larson 2014; Bhattacharyya 2015; Bhattacharyya and Slocombe 2017). They articulated nuances and challenges in framing horses as invasive, given the goals and interests of the Xeni Gwet'in. The second, Yvette Runninghorse Collins is Lakota and writes about Traditional Knowledge of the horse in Indigenous culture (Collin 2014; Hunska

Taşunke Icu et al. 2023; Taylor et al. 2023). In their dissertation, they argue that the Indigenous horse of the Americas was not fully eradicated, and that multiple Indigenous communities in North America had relationships and cultural practices with horses from the Pleistocene epoch through settler colonization (Collin 2017).

This place-based knowledge contrasts with knowledge and concerns presented by Tribal Nations that are located near herd management areas in the American West. The National Tribal Horse Coalition, comprising the Confederated Tribes and Bands of the Yakima Nation, the Confederated Tribes of Warm Springs, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Colville Reservation, and the Shoshone Bannock Tribes, refer and communicate that horses are “non-native” and “invasive” (Meninick 2022:2). One interview with a non-Indigenous Tribal/Nation Natural Resource Director, who themselves understood horses as non-native, communicated that their Tribal Council understood horses on their reservation as “bad wildlife”. What is important to communicate here is variation between individual and Tribal perspectives on range equines and how that differs across places. There is not one universal “Indigenous perspective” within or across Tribes/Nations when it comes to range equines. For these reasons, I do not take a stance on horse nativity. In fact, federal management is legally required regardless of range equine nativity.

Beginning this project at the start of the COVID-19 pandemic was challenging. Working hundreds of miles away from where the federal program I study operates, without funding for relocation to towns near herd management areas, and following a history of settler misuse and devaluation of Indigenous knowledge, I struggled to develop and maintain relationships with Indigenous communities and people who live near herd management areas. My analysis, though focused on studying the embeddedness of settler colonialism within modern environmental

management, is limited because I am missing one of the most prominent foils for settler colonial management, locally based Indigenous Knowledge. Additionally, I am missing my own foil by approaching a broad theoretical question across a multi-focal program versus orienting within a specific place, which is a settler scientific practice. My goal in this dissertation is to communicate settler promoted thought and management, including its multi-focality, and how that continues to result in the circumscribing of Indigenous sovereignty as it relates to range equine relationships and management. This dissertation is focused on critically understanding the settler colonial state and how it continues to create undesired environmental conditions from its management formation and practices. This focus and analyses stem from my own sociological theoretical interests and should not be a reflection on BLM agency research goals or approval, nor that of my dissertation committee.

The analyses reported in this dissertation come from a portion of a larger BLM-approved research project focused on WHB Program decision-making. Because of the scope of data collected for the larger project, required time for inductive analyses, and constrained funding timelines, I decided to document the social history and social-structural factors that have formed the WHB Program and operate largely outside of BLM personnel decision-making. I analyzed collected data from a larger institutional ethnographic methodological approach. Institutional ethnography begins from the experience of people and then follows the complex social relationships and institutional processes for which those experiences are embedded (Devault and McCoy 2006:21). It is a method for studying how an institution can shape multiple places, people, and outcomes, often in a universalizing way. Much of our everyday experiences and environmental outcomes are shaped and controlled by institutions that apply or enforce legal

structures. However, those who work within institutions also engage in sense-making about their work, including navigating social discourse about the topic and method of their work.

The institutional ethnographic methodological approach requires the integration of field observations, interviews, and textual analysis. To better understand institutional processes, I needed to speak with and learn from federal agency employees engaged in range equine management. Therefore, I worked with the Bureau of Land Management's (BLM) Wild Horse and Burro (WHB) Program, the agency and program tasked with range equine management, to receive federal approval for this research project. Agreed research outcomes related to BLM WHB decision-making will be provided to the agency and are not systematically analyzed in this dissertation.

I completed field observations, interviews, and textual analysis over the course of 22-months, between May 2021 and March 2023. Because I primarily worked out of Eugene, OR, I attended virtual meetings and conducted multiple fieldwork trips to herd management areas and events. I drove over 8,000 miles, took a bus, and a flight. I camped on BLM, Forest Service, city, state, and private campgrounds during these fieldwork trips (Figure 1 is one of these campsites at sunset). The images provided in this dissertation depict what I saw. I conducted interviews with those involved in range equine management virtually and in-person while on fieldwork trips. I collected textual documents that guide location-specific management, and that which guides range equine management nationally. For the purposes of this dissertation, I analyzed data collected through a flexible coding strategy based on settler colonial literature (Deterding and Waters 2021).



Figure 1: Campsite at sunset, 2022

As it relates to my question about what the contemporary manifestations of settler colonial logics are, my dissertation shows that where range equines are currently being managed is a direct result of settler colonialism. Indigenous-horse relations have been significantly impacted by settler colonization. Where horses are managed today are based on where settlers brought them and are legalized as belonging in these places because of settlers' recent past in these places. The settler colonial logics that informed these outcomes were premised on settler idealized superior land-use logics (see chapter 3) and the logic of erasure (see chapter 5). Because of the ways that these logics became embedded within federal organizational, political, and legal mechanisms, they continue to operate through social structure.

Related to my question about how settler colonialism is transmuted and institutionalized within modern, normalized, and legal state operation, my dissertation shows that this occurs through a settler governmentality and biopolitical control (see chapter 2), propertied boundaries (see chapter 3), and the embeddedness of settler science and management within governance regimes that make alternative social-ecological relations, including implementing Indigenous management goals, nearly impossible (see chapter 4 and 5). Through the institutional ethnographic study of BLM's WHB Program, I find that this settler colonial management system is based on a white ethical superiority, separation of people from place, limited awareness of the human labor requirement within environments, assumes a balance in an otherwise socially-transformed environment, applies a reductionist management approach, generalizes management tactics across large and varied ecologies, problematizes species not the social decisions that guides specie management, and struggles to be transformed because this management systems is embedded within settler legal and cultural frameworks.

This project comes at a time when the United States federal government is attempting to rectify Federal - Indigenous relations through executive orders, joint-secretary orders, and memorandum premised on agency determination and use of Indigenous Knowledge in federal lands management. This project comes at a time when settlers, including myself, are beginning to trust Indigenous knowledge and promote the rectification and inclusion of Indigenous ways and worldviews across different sectors in the United States. My hope is that for those who read this dissertation, that any goals of improving Federal-Indigenous relations in any federal lands management topic require addressing the settler colonial history and ongoing institutional processes, logics, and discourses that continue to denigrate and circumscribe Indigenous sovereignty. To improve Federal – Indigenous relations, we must not add to what we are doing. We must fundamentally alter what we as settlers have been doing for the past 500 years. For instance, we must make new determinations about where it is appropriate for range equine to roam, and re-introduce horses back into human relations. We must re-organize institutions, re-evaluate existing laws, transform our property regime, decentralize decisions, address settler racialized perceptions, let go of economic requirements. As settlers, we must humbly let go of the structures and processes that give us power over others. As is clear in range equine management, what we have been doing has not and will not continue to work in a world that is transforming ecologically.

CHAPTER 2: INTRODUCTION

I rode with a Bureau of Land Management specialist on the remote highway from the field office to the campground meeting location. It was June, but the landscape already appeared quite dry. What forage remained was “crispy”. This area has only experienced half of the precipitation that it usually receives, totaling six inches in six months. Specialists within the Bureau of Land Management predict that by the end of the summer there will be no moisture within the top three feet of soil. The tap root of a foot tall sagebrush will be without water. Horses, donkeys, wildlife, and livestock in these regions are dependent on sagebrush ecosystems.



Figure 2: BLM field office staff hugging a sagebrush they planted after a fire within a herd management area

The arid and semi-arid rangelands in the United States are nearing ecosystem collapse (Wisdom, Rowland, and Suring 2005). These rangelands are in the Great Basin and Intermountain West regions where vast swaths of plateau valleys pattern rugged and mountain terrain across hundreds of miles. This is where range horses and donkeys (from here on referred to as equines) roam. For those who have seen these beings while on federally managed lands often communicate a sense of wonder and awe.

Located within the most rural sections of the Oregon, California, Nevada, Utah, Arizona, Idaho, Montana, New Mexico, Washington, Colorado, and Wyoming states, this is where sagebrush and grasslands intermix, and trees are few. Many springs have dried up from mining, irrigation, ground water wells, and desertification (Patten, Rouse, and Stromberg 2008). This is the region that you carry extra fuel, water, coolant, and are prepared to change your own tire because it may take a few hundred miles to reach the next town with service. The expansive sagebrush steppe ecosystem is often invisible to the urbanite, Midwesterner, East coaster, and

even academic scholars. The expansive sagebrush steppe ecosystem is only located in North America, and it is imperiled (Chambers and Wisdom 2009).

Much of the imperiled sagebrush steppe ecosystem in these rural regions is managed by the Bureau of Land Management (BLM), the largest U.S. federal lands manager. See Figure 2 for a visual of a BLM field office personnel hugging a sagebrush they planted in an attempt to recreate a sagebrush ecosystem after a wildfire burned through sagebrush plants. This bureaucratic agency was originally formed during the New Deal era to improve rangeland conditions after the Great Dust Bowl of the 1930s. The BLM is guided by federal laws and headquarter policy aimed at improving rangeland conditions. The practice and implementation of those policies filters through the daily operations of field offices that are understaffed and underfunded. Employees within the BLM navigate the often-contending ties and legal requirements for economic resource outputs and environmental regulation of multiple-use lands (Skillen 2009). As a scholar and former public lands employee, I am interested in how federal lands management agencies come to decisions about how to best manage the land and species under their jurisdiction.

The few people that live within these rural rangelands include Indigenous peoples who, before European settlement conquest and the U.S. sanctioned reservation system, migrated seasonally amongst the ecological systems that they co-created. These rural regions also include generational ranchers (including Indigenous ranchers), those who work in the service sector and town operations, and employees of the BLM who are tasked to manage these rangelands. Centered in these locals concerns and debates about the wellbeing of the sagebrush steppe ecosystem and the rangelands for which they are dependent for their cultural and economic

livelihood are the presence of range horses and burros (donkeys). See Figure 3 for a map of the areas that BLM manages range equines.

According to some of the people who live in these regions and range scholarship, these two species affect negatively affect ecological sites (Beever and Brussard 2000; Beever and Herrick 2006; Nimmo and Miller 2007 for a review; Boyd, Davies, and Collins 2017; Eldridge,



Figure 3: BLM map of equine herd management areas, 2022

Ding, and Travers 2020). This is important as range equines are located and fenced within the rangelands that don't have access to irrigation lines. The federal government is trying to manage charismatic megafauna within changing environments that are becoming more desert-like. The social problem

framing about these populations depends on perspectives and may also vary by terrain and precipitation, but are primarily centered around environmental degradation. United States federal debates and funding decisions mirror the concern about range equine populations (BLM 2005).

In this dissertation, I analyze this case through a settler colonial perspective recognizing that range equine biogeography and social history are deeply intertwined with settler colonization of the American West. For instance, many of the horses used in the Pony Express, which allowed for communication between the Midwest and California, were often ridden by “wild horses” (Wilson 2009). Horse herds in these regions were managed for U.S. military purposes, and were used in warring against Indigenous peoples. They were used in the South's slavery economy and later in policing, sharecropping, tenant farming, and other debt peonage forced labor, neo-slavery (Blackman 2008). The idealized pioneer freedom of range equines, although not explicit, is

directly tied to white settlers and their belief in their own freedom which was achieved via the horse. Reflecting on this history, I ask, what are the contemporary manifestations of settler colonial logics? How have they been transmuted and institutionalized within modern, normalized, and legal state operation?

In this introductory chapter, I outline how those who work for the BLM and those who aim to influence their range equine management think about these species. I find that there are two predominant narratives about range equines, those who consider them to be problematic and those who believe they have an intrinsic right. Differing conceptualizations, as I will discuss below, result in divergent ways of managing range equines. I then situate this resource management issue within a broader social historical context and present an argument for exploring range management from a sociological perspective. Organizational and environmental sociology present useful inquiry into federal management processes that lead to undesired ecological outcomes. However, much of that work is only integrated within urban governance. Collectively, this literature misses historic contextualization on the state as well as the legal and political complexity of federal agency processes. To expand upon these theoretical shortcomings, I employ settler colonial theory to better understand both context and federal management processes that lead to undesired ecological outcomes. I then discuss my methodological approach, data collection, and analysis processes. I wrap up this introduction by providing an outline of the following five empirical chapters.

Literature Review

Conceptualizing Range Equines

I refer to the narrative used by those concerned about equine populations as the Feral Horse and Burro Problematic (named after the BLM's Wild Horse and Burro Program). The Problematic Narrative (from here on) argues that range equine populations are too large for what the environment and other species can sustain. This perspective presents a puzzle for federal management of range equines due to the social-ecological mismatches inherent in the contradictions among the laws and policies that protect these species as "living symbols of the historic and pioneer spirit of the West" (Beever, Huntsinger, and Petersen 2018). This is the site where I situate my practical and theoretical interest in federal land management decision-making. The Wild Horse and Burro (WHB) Program, specifically, presents a puzzle for federal decision-makers about how to maintain the material history and cultural logics of the settled American West while simultaneously restricting the undesired outcomes that stem from that settlement. This is the challenging task assigned to the BLM. WHB personnel are asked to develop the best population control mechanisms of two species protected because of their cultural symbolism with limited staffing and funding.

The Feral Horse and Burro Problematic Narrative begins in the 1970's with federal oversight over all range equines on federal lands, species that were previously managed by settler ranchers (Wild Free Roaming Horses and Burros Act of 1971). Equines under this narrative, are understood as "feral", resulting from settler rancher management and breed influence. Congress tasked the BLM, a meagerly staffed and large bureaucratic agency, to manage equine herds. The BLM, however, only staff one person within the role of Wild Horse and Burro Specialist across multiple herd management areas, each of which span hundreds of

thousands of acres. Even with the assistance of a contracted horse gather crew every few years, they are not as well equipped to maintain horse herd population numbers as communities of settler ranchers may have been, or historically roaming Indigenous communities had been.

Beginning in 2010, population numbers began to increase from 1970's records. The reportedly growing horse and burro population is the focal concern of The Problematic Narrative. The BLM reported about 27,000 animals in 1971. However, recent surveys identify about 86,000 animals across the rangelands, a total of 59,000 "excess" animals (BLM, HMA Statistics, 2020)¹. BLM management is driven by an assessment of what they determine the ideal population is to maintain a "thriving and natural ecological balance". Any numbers above this value range are determined to be "excess" according to case law.

Attempting to resolve the growing population rate, the BLM regularly gathers equines and provides a financial adoption incentive available to the U.S. public \$1,000. Little demand for untrained mustangs has resulted in 58,000 horses stored in off-range corrals or pastures (BLM 2022). Rounding up and housing horses account for most of the program's budget (81%), costing \$91 million in 2021 alone (BLM 2022).

Not only are the population numbers of concern, but these numbers are correlated with poor environmental conditions in already imperiled ecosystems. Current management approaches are based on an efficiency model developed from those with experience gathering horses, ranchers and mustangers. Gather operations typically look like helicopter driving horses into a corral. Unfortunately, this approach requires more financial support and social buy-in for it to be effective long term. This practice cost taxpayers millions of dollars. This perspective is

¹ https://www.blm.gov/sites/blm.gov/files/wildhorse_2020_HAHMA_Stats_508.pdf

supported by rangeland ecologists, land-grant extension service agents, the BLM, and some elected officials.

Although the Feral Horse and Burro Problematic narrative is central in most management debates and discussions, there is another narrative that has come to the forefront, the Wild Horse and Burro Rights Narrative. These two narratives stem from diverging ethical, cultural, and political positions that conceptualize range equine species differently. The Rights Narrative (from here on) entered the public sphere in the 1950's from social concern over the handling of range equines by motorized mustangers (Kania 2012). It is perpetuated by range equine advocates, who live within and outside of these rangelands. Under The Rights Narrative, range equines belong on these rangelands. They attribute a pioneer nature to horses due to their historic ancestors including the development of the horse species in North America, granting them an intrinsic right to these rangelands (Lippold et al. 2011). Burros differ in that they do not have the same known lineage. They are also seen as having a right, however, because of animal welfare reasons and because they are threatened in their native ranges (Lundgren et al. 2022). Both horses and burros are also seen as having a right because of their role in settler colonization and because they are culturally seen as beautiful, even majestic.

This perspective is supported by some members of the scientific rewilding community. Put briefly, they promote ecological restoration to increase wildlife populations within and outside of their "native" ranges, including predators. They argue for a wider timescale purview of species movement and belonging, rather than determining species nativity based on where species were located during initial colonization in the 1500's and 1600's (Ripple et al. 2017; Lundgren et al. 2018, 2020; Wallach et al. 2018, 2020). Range equines under this narrative are

seen as “wildlife” and should not be harassed to capture or held in corrals, management activities promoted by the BLM and those ascribing to The Problematic Narrative.

Rather than range equines being the main cause of rangeland deterioration, The Rights Narrative argues that cattle and sheep livestock grazing should be the focus for eradication. According to this perspective, current livestock grazing allocations do not afford enough vegetation and water resources for wildlife species. Management suggestions under The Rights Narrative include reducing or eliminating cattle and sheep grazing permits, maintaining existing herd management areas, stopping helicopter-gathers, and for the BLM to focus on fertility control applications as the primary equine population reduction mechanism. These fertility control applications have been successfully conducted in partnership with volunteer non-profit organizations that subscribe to this narrative. However, this success has typically occurred in herds located near towns. In Table 1, I outline some of the fundamental differences between the Problematic and the Rights Narratives, such as conceptualizations, methods, the cause of rangeland deterioration, management suggestions, and scientific community that supports each narrative.

These two narratives are generalizations I developed from my 22-month institutional ethnographic research within BLM’s Wild Horse and Burro Program decision-making process. However, one does not need look far to observe these perspectives within both national and local community news. Although these generalizations are prominent, those engaged in this program may subscribe to aspects of both narratives. Some partner across narratives in order to make stronger cases to Congress for more financial support. The Path Forward Initiative was a cross-narrative collaboration presented to Congress. They suggest a more intensive helicopter-gather plan (15,000-20,000 for the first three years of implementation, followed by 5,000-10,000 gather

years) and subsequent fertility control applications, more off-range pastures, and promoting more adoptions (Path Forward Initiative). These management activities are already practiced by the BLM, but this approach suggests more intensified financial support for these programs and to pursue public-private partnerships with the aim to reduce range equine population growth rate and reduce overall herd sizes. Then, with limited herd sizes, humane fertility control applications could establish more effectively.

Table 1: The Feral Horse and Burro Problematic Narrative Compared with the Wild Horse and Burro Rights Narrative as it relates to management thought and solutions

	Equine Conceptualization	Methodological Scope	Cause of Rangeland Ecosystem Deterioration	BLM Management Suggestion	Scientific Community
Feral Horse and Burro Problematic Narrative	Invasive and feral. View as a population. Economic value.	Assessment, Inventory, and Monitoring; Exclusion Transect Data; Trail Cameras.	Equine populations above the appropriate management level; prior poor management	Reduce herd populations predominantly through helicopter gather operations	Rangeland ecology, University extension agents
Wild Horse and Burro Rights Narrative	Native and wildlife, or otherwise existing and so belonging because of their cultural role in U.S. settlement. View as individuals. Intrinsic value.	Trail cameras; fertility control science; individual tracking and naming.	Mining and overgrazing by livestock; prior poor management	Prohibit livestock grazing, reduce the water available for mining, and increase habitat connectivity. Dart equines with fertility control as the primary population control. Increase the appropriate management level.	Rewilding ecology

Other stakeholders are not engaged in this initiative. Although the Path Forward only saw only one year of practice by Congressional appropriators (in 2022 the BLM gathered 20,193 range equines, all other years since 2019 the BLM gathered less than 15,000). The BLM was also limited in its ability to process tens of thousands of beings removed from the range in a year. Helicopter gather plants for 2023 estimate over 7,000 will be removed from the range. It is unclear whether Path Forward will develop more political fervor.

One philosophical difference between these two narratives is the perception of equines as “feral” or as “wildlife” (see Table 1 above). Conceptualizing a species as one or the other leads to different scientific questions and approaches for studying and measuring these populations (Kuhn 1970; Carolan 2008:72). The Problematic Narrative, for instance, recommends assessing appropriate populations numbers based on what populations were reported in the 1970s when the Wild Free Roaming Horse and Burro Act of 1971 was passed. The Rights Narrative, in comparison, recommends assessing appropriate population numbers based on the livability of these species determined by ecosystem capacity, research that has yet to be conducted program wide. Thus, these two leading narratives about range equine populations across the American West rangelands not only suggest different ways of knowing but also different strategies for assessing and managing.

The Problematic Narrative and the Rights Narrative both offer solutions, create strategic plans (2005, 2021), have experienced federal inspection (2010), conduct reports (1990, 2008, 2011, 2013), engage in litigation, and support a variety of managerial strategies, often referred to as the “tool box”. Those engaged in improving this program, equine welfare, and rangeland conditions are working on tangible solutions given the current scientific, political, and legal constraints. Even if stakeholder groups disagree, they are engaged, at the table, and are doing

their best. Those that study participatory engagement in decision-making argue that it is this engagement across conflicting groups that can lead to just decision-making (Brulle 2000; Ryfe 2005; Stewart and Sinclair 2007; Momtaz and Gladstone 2008; Reed 2008; Morrison-Saunders and Early 2008; Arts, Buijs, and Verschoor 2018). Some sociology of science scholars argue that we should include a variety of “different validation processes, perspectives, and types of knowledge” in order to find resolution (Sardar 2000:64). However, even with conflicting stakeholder engagement, at a large scale, environmental degradation on the rangeland has not been resolved.

This continuation of undesired conditions is not due to a lack of *effort* towards its resolution. This is concerning that such extensive federal and volunteer time, financial resources, reporting, and technological innovation have not had an impact on improving existing rangeland conditions broadly. This leads me wonder whether we are pursuing the appropriate scope for improving rangeland health where equids are managed. I argue we should expand scope to the social structural and cultural histories that constrain BLM management operations and decision-making.

Social Causes of Environmental Concern

Although the two dominant narratives about range equine species are markedly different, there are similarities that constrain their purview for assessing this program. The two narratives begin at the second half of the 20th Century, after equines were already managed by ranchers in these rural rangelands. Proponents of these two narratives accept the prior social history and take it as a given for “progress” and westwardly colonial settlement.

These approaches also follow a belief in modernity and technological development to resolve environmental concerns (Dunlap and Van Liere 1984). Although technology creates new approaches for management (such as motorized equipment), that technology operates within equine social decision-making. Additionally, decisions about technological use and implementation as done by people. Humans are part of the equation. After helicopter-gather operations, for instance, range equine population numbers rebound at a rapid pace, referred as “compensatory reproduction” (NRC 2013). Some herd management areas experience helicopter gathers, where the BLM contracts a gather crew to collect and transport horses to BLM corral facilities. In some herd management areas, gathers may occur about every other year and still have thousands of horses above the agency desired population numbers. Fertility control methods to reduce populations have proven effective in a few small herds near more robust towns or cities with an involved volunteer fertility control application non-profit group, however, they have yet to be employed in a way that research supports to most herds, especially those with populations above 500. For fertility control to be effective at lowering the population growth rate, about 75% of the mares (female horses) or jennies (female donkeys) need to be fully treated. Fertility control typically requires booster immunocontraception doses. There has been substantial time and resources spent on resolving range equine concerns from a technological development approach, and it has only proven effective in 35 of the 177 herd management areas that are able to maintain stable populations (BLM 2022).

Most argue that issues around the WHB Program are a direct result of limited funding and staffing. For example, the removal of range equines is constrained by scheduling and paying contractors, BLM corral space, and off range pastures. See Figure 4 for a view of what BLM corral spaces look like in Burns, OR. In 2022, the Cañon City corrals in Colorado witnessed the death of 145 horses from a common influenza. This was due to a lack of BLM personnel to administer vaccines and provide required humane care as outlined in BLM WHB policy (Kane 2022)².



Figure 4: Range equines eating dropped hay piles in BLM Oregon Corrals, 2021

Although funding and staffing would significantly help pay to remove range equines from the range and storing them off-range, this approach requires ongoing steady program investment for success. Removals at that scale will face social and legal challenges, as currently exist. Additionally, there are methods of management structured into regulation that affect range equine herds. For example, predation management. This is not only a funding and staffing issue, it is also a problem with social-ecological mismatches structured into the WHB Program under a reductionist paradigm (Beever et al. 2018; Harrison 2019). Reductionism understands “that the essence of the entity is a function of its parts” (Keller and Golley 2000). Therefore, we can know

² <https://coloradosun.com/2022/05/27/wild-horses-equine-flu-outbreak/>

more about an ecology by breaking it down into its fundamental parts and knowing those parts separately. Well regarded philosophers, Serres and Latour (1995), argue that scientific reductionism is an intentional choice because of the uncertainty and fragility of conceptualizing ecosystems, processes, interactions, etc. at larger scales. When one expands the scales of observation, the certainty of our understanding decreases.

Prior to 1971, when the U.S. government took over horse management as legally mandated by the Wild Free Roaming Horses and Burros Act of 1971, human communities had managed range equines. Some gathered and sold mustangs to slaughter. Some used horses, others motorized equipment. Some used horse populations as a national resource for economic gain. Rather than assessing range equine management beginning with the 1971 Act, I recommend viewing this program through the biogeography, history, and ethology of anthropogenic-controlled equine populations in North America. My inquiry here then is focused on the context for which this program exists rather than available decision-making options. I argue that the history of social and ecological interactions combined in ways that lead to our current challenges for resolving concerns related to range equine populations and the environmental degradation. In this research, I focus on the social causes that led to the creation of this program and its enduring social structural elements.

This dissertation suggests directing attention to how social histories interact with ecological histories, which act as “constellations of causal mechanisms” codetermining the current material conditions (Steinmetz 1998:177). These mechanisms are causal because the process of becoming the current reality (or thought about our current reality) is contingent on the combination of social-ecological circumstance. For the WHB case, this includes the historical biogeography of equines in North America; the human cultural assumptions and practices in

relation with these species; and the mass transition towards fossil fuel energy that decreased human reliance on equines for transportation, extraction, and labor.

Thus, exploring the arrangements of structures and events that not only inform environmental conditions, but also structure contemporary management approaches is relevant for understanding why these places are the way that they are and how they constrain management options. For example, from a temporal view of where range equines are currently managed is based on management that occurred long before 1970s. Both settler prior management and settler justifications for horse preservation are both deeply intertwined in settler colonization of the American West.

Contemporary Social Challenges

Contemporarily, the social aspects of this program are often seen as that which the BLM has little control over and is external to the agency: Congressional decisions and public activities by those who subscribe to The Rights Narrative. For example, the National Academy of Sciences has published multiple reports on BLM's WHB Program. In all of these reports, they focus social attention on that which is external to the agency, such as public engagement (1980, 1982, 2013). The BLM currently engages with the public, including neighboring Indigenous Nations, in what is referred to as "consultation", where they inform, solicit input, hold public hearings, and consider concerns without a requirement to come to agreement (NRC 2013:278). The NAS recommends a more participatory and collaborative approach for this program, a suggestion also outlined in BLM's Land Use Planning Handbook (2005). Research on the rural American West (Charnley, Sheridan, and Nabhan 2014) and the U.S. Forest Service (Spies et al. 2019) has found

that collaboration is essential for achieving ecological and socioeconomic goals and that even when issues appear highly intractable, win-win outcomes are potential.

Critical research on formal consultation and public engagement processes within environmental policy have been found to systematically marginalize the role of environmental justice frames, including the distributive, procedural, and cognitive justice (Shilling, London, and Liévanos 2009). Shilling and co-authors (2009) argue that this outcome is due to the inherent tensions between systems based on market dominance, state legitimation, and environmental justice. My previous work on public comment processes within U.S. Forest Service Environmental Impact Statements identifies that it is difficult, if not impossible, for agency personnel to incorporate public concerns into projects at that stage (except for site-specific or editorial suggestions) as they often contradict with other bureaucratic, economic, and legal designations that the agency must follow (De'Arman 2020). Agency personnel are thus required to respond to most comments in a way that deny their worth in order to support their proposed alternative (De'Arman 2020).

Collaboration and improved participatory decision-making are challenging opportunities for this program. This is due in part to the starkly different philosophical perspectives of The Problematic Narrative and The Rights Narrative. In this way, the framing of the issue and the science itself is contested by some of the involved public. The ecological science used to inform these decisions is based on what information is best available. However, some of the scientific decisions that guide range management has data limitations (e.g., timescale comparisons), experience uncertainty as is typical with management at large-scales under changing conditions (e.g., climate change), and is situated within important scientific debates (e.g., horse nativity or rewilding). Some argue that even if all the scientific research necessary to come to clear and

certain arguments about the ecological science, the implementation, communication, shared norms and understanding around these species and relations with the public are social in nature. Environmental and resource management decisions are not only informed by ecological science. They are also informed by laws (De'Arman 2020), interest group logics (Culhane 1981), economics (Jasanoff 1987), and feasibility (Hulvey et al. 2013). Scientific insight is weighted “against social and political considerations” (Pellizzoni 2010:167).

Although the program has taken many important steps to improve its scientific process and communication as outlined in the NRC 2013 report and as recommended by the National WHB Advisory Board such as increasing collaboration with the USGS, posting common myths about the program on the WHB website, there still exists public mistrust in the development of some of these decisions. Primarily, there is concern by those within The Rights Narrative about the ways that the BLM has set their appropriate population management levels - the number of horses the agency says should be on the rangeland - and the lack of distinguishment between environmental effects from a variety of causes, such as livestock grazing and mining. Some are even concerned that range equines are “scapegoated” as the only or main source of ecological degradation in herd management areas (National WH&B Advisory Board meeting notes, 2019).

Beever, Huntsinger, and Petersen (2018:324), three of the nationally leading rangeland ecology authors on the NRC 2013 publication, identified that there are three social-ecological mismatches that lead to the intractable nature of BLM WHB management. Social-ecological mismatches are “when components of a social-ecological system fail to integrate with each other” (Beever et al. 2018:324). The first social-ecological mismatch is the use of “steady-state goals employed to manage highly variable environments.” This deals directly with structural guidelines outlined in the WFRHBA (1971). That requires the maintenance of population

numbers within changing rangeland habitat. The second, “the methods to evaluate evidence, resolve conflicting beliefs, and achieve objectives in scientific vs. political realms” recognizes that environmental science can and should provide evidence regarding management decisions, however, it is socio-political processes that ultimately guide policies, practices, and management objectives. Legally required equine preservation in places with little to no water resources is one example of this social-ecological mismatch. The third, “conflicts between the deeply felt values of stakeholders and scientific methods” identifies a lack of integration of cultural factors (ethics, ideology, etc.) into management communication and collaboration (Beever et al. 2018:324). All three of these social-ecological mismatches relate to the social, cultural, and political aspects of the WHB Program. It is worth exploring these WHB internal BLM and federal social dynamics to better understand the social causes of equine population management and environmental rangeland concerns to expand the set organizational approaches to resolve program concerns.

Organization and Environmental Sociology Theoretical Traditions

Organizational and environmental sociology present useful inquiry into governance processes that lead to undesired ecological outcomes. I begin this section by presenting a broad discussion of the relevance of organizational literature to understand the variety of ways that institutional actors may or may not be able to inform organizational priorities. I then situate these organizational complexities within environmental sociology on the state. This literature is largely influenced by social movement and urban environmental justice scholarship.

Early social theorists and philosophers, such as Frederick Engels, observed that the more humans become in conscious control of their interaction with nature, there “exists here a colossal disproportion between the proposed aims and the results arrived at, that unforeseen effects

predominate, and that the uncontrolled forces are far more powerful than those set into motion according to plan” (Engels 1940:49). This perspective is referred to as unintended consequences of purposive social action (Merton 1936). For example, tightly coupled mechanical production operations allow the potential for system failures that occur at often unpredictable times and can lead to deadly accidents (Perrow 1984). Standardization procedures often used with the goal of producing more equitable results across multiple locations still fail at transforming these hierarchies (Bosk 2020). For environmental examples, efforts to create a global agricultural market through intensive monocultural production in the U.S. Midwest, directly resulted in the Dust Bowl devastation (Holleman 2018). Criminalizing Indigenous prescribed burning and settler fire suppression, for the sake of saving human lives and maintaining un-burnt property, has resulted in the build-up of fuels and increased fire intensity and frequency (Hagmann et al. 2021). Using an unintended consequences of purposive social action perspective to better understand the WHB Program requires an exploration into the organizational and environmental disciplines.

Organizational behavior is concerned with how beliefs, norms, practices, and rules are instituted, adopted, and challenged within organizational operations. This can be seen from the top-down macro control (Weber 1978 [1924]) as well as negotiated order from organizational members themselves (Strauss 1978; Strauss et al. 1963). Institutional theory provides a somewhat loosely defined avenue for exploring how both structures and culture guide activities within an organization (Scott 1987, 2008). This process, as defined by Tolbert and Zucker (1999), involves the presence of external forces that influences innovation in a particular structure or culture of the organization and a chain of organizational responses, including habituation, objectification, institutionalization, and sedimentation so that these structures or

cultures are maintained even as people within the organization change. Research in environmental sociology flow from these traditions. When examining environmental governing agencies, scholars explore why environmental justice policy is or is not institutionalized within an agency, and attribute that outcome to the cultural “state resonance” of environmental justice claims (Liévanos 2012; Harrison 2019).

Fine’s (1984; 1996) research, which focuses largely on how organizational activities and daily routines are a product of the interplay between organizational structure and interpretive processes, argues for expanding organizational focus to the environment for which that organization operates and to the people that work within organizations. As Fine argues, “the ultimate organizational variable is the meaning that the environment has for the organizational member” (1984:243). Organizations do not exist or function without the people who create them. This perspective developed in large part as a critique of the more dominant organizational perspectives that tend to view organizations and bureaucracies as independent entities devoid of people (Hallett and Ventresca 2006). A focus on the micro, for instance, understands that daily work routines characterize workplace organizations (Fine and Hallett 2014; Weber and Dacin 2011).



Figure 5: BLM herd management area in Wyoming, 2022

Here, people, meaning, and place matter in organizational operations. Thus, place and space are not merely backdrops against which action happens, or an object of study in terms of worker outcomes and efficiency but are important parts of interactive processes of meaning-making, cultural production, and worker interactions (see also Gieryn 2000). See Figure 5, a herd management area, the organizational location that informs management decision-making. The people that work for the BLM, for instance, enter these institutions from a variety of backgrounds that, through daily interactions, negotiate organizational order and culture. However, there are institutionalized processes present in bureaucratic organizations that shape and refine employee activities and knowledge (Weber 1978[1924]). Often, there are a variety of ways in which people reconstitute discourse and ways in which an institution normalizes discourse and knowledge. This affects the ways in which BLM employees and the agency itself think about their work as it relates to the WHB Program. Focusing on the macro- and micro-organizational interactions is important and relevant for this project. However, a focus solely on organizations misses the contexts and environments for which the WHB Program operates.

An environmental sociological perspective can provide a useful lens for examining the cultural logics, discourses, and justifications of natural science regimes (Carolan 2004, 2005). These regimes, primarily instituted by the governing state, are based on assumptions of the state of nature and human's role within it (Botkin 1990; Scott 1998; Yanco, Nelson, and Ramp 2019). This project investigates how a governing state thinks about land, the interrelations of species on it, and the state's role in ecosystem management. Environmental sociological research has proven to be quite useful at exposing the social aspects of environmental concerns (Pellow and Brehm 2013) and how environmental conditions lead to social concern (Beck 1992). Sociological attention here has focused on developing theoretical frameworks for identifying

how social processes negatively impact ecosystems. This research explores the macro (Foster 1999a; York, Rosa, and Dietz 2003; Foster, Clark, and York 2010; Holleman 2018) and micro forces that threaten environmental sustainability (Cilia 2019). This research tradition has identified the economic, militaristic, technological, and social structural forms that lead to ecological degradation.

Most environmental sociological research has focused largely on the negative environmental outcomes that stem from economic growth (Foster et al. 2010), commodification of resources (Longo, Clausen, and Clark 2015), investment in labor saving technology (Gould, Pellow, and Schnaiberg 2004, 2008), and the military industrial complex (Hooks and Smith 2004; Alvarez 2016). More recent scholarship has also expanded attention to the lack of state environmental regulation in the unequal impacts of environmental harms (Pulido, Kohl, and Cotton 2016; Pellow 2018).

The role of the state in environmental governance demonstrates variance in their ability to regulate environmental harms. The 1960's/1970's environmental movement in the U.S., was able to achieve movement goals through whites advocating to the state (Bullard 2000; Taylor 2016). The state has legitimate power and has proven to curtail industry as advocated by environmental movement activists. The U.S. witnessed congressional changes to chemical regulation, environmental governance agencies, landscapes preservation from extractive industries, and even federal oversight of range equines. Because of these successes and role of the state in regulating capitalist profit-motive interests, the state has often been positioned as the only possible option to achieve healthy environmental and social change (Pulido et al. 2016).

The history of the environmental justice movement, however, has demonstrated that reliance on the state has inhibited the movement's ability to achieve their goals and reduce

experiences of environmental racism (Pulido et al. 2016; Pellow 2018). Pulido (2016, 2017) argues that the reliance on the state to achieve environmental justice goals is ineffective because it ignores the work that the state has done to intentionally commit harm against black and brown bodies. Pellow (2018) further articulates that “this is problematic because the state is one of the primary forces contributing to environmental injustice and related institutionalized violence” (2018:12). Therefore, environmental governance experiences its own internal negotiations regarding environmental meaning-making as well as the social locations of those experiencing environmental harms within a set of power relations. For a related example within the WHB Program, white-led animal advocacy has been better able to advocate to federal decision-makers than Indigenous communities still engaged in equine gathers for economic purposes are.

Pellow (2018) offers a critical environmental justice approach that puts forward four pillars that he argues has been previously lacking in earlier generations of environmental sociology and environmental justice studies. First, he suggests expanding focus to multiple forms of inequality, such as race and nationality. Second, he suggests expanding and using multiple scales for which to measure and find resolutions, such as temporal and spatial scales. Third, he suggests acknowledging that the state is not a solution to resolve environmental injustice and suggests that movement strategies include a deepening of direct democracy (cooperation, mutual assistance, and grassroots organizing). Fourth, he suggests scholars recognize the indispensability of both human and more-than-human beings that tend to be excluded and marginalized. Although not outlined by these four critical environmental justice pillars, this dissertation encompasses these pillars through the settler colonial contextualization of BLM’s WHB Program.

Exploring the role of the state in environmental governance of the WHB Program is relevant to environmental sociological literature for a few reasons. First, the WHB Programs is very expensive for the U.S. state and is not offset by profit-motive capitalistic or military actors, those typically framed as the causes of environmental concern³. This allows for a semi-isolated account on the state's environmental governance without a substantial profit incentive. Second, the BLM, who manages the WHB Program, is the largest federal land manager in the U.S., proving relevance for better understanding federal land management regimes. Third, the timing of the creation of the BLM (1946) and the WHB Program (1971) provide useful temporal maps for analyzing transformed social-ecological relations before and 50 years after.

Settler Colonial Theory

Analysis of the WHB Program decision-making must encompass a contextualization of the state and their role in anthropogenic-controlled equines in North America, including the creation of land management regimes where range equines are now located. Therefore, this dissertation begins by understanding WHB modern environmental governance challenges by expanding the temporal and spatial scales that led to this program's creation and contemporary challenges. The modern state is a powerful organization that has a monopoly over the legitimate use of force within a particular territory (Weber 1978). This territory is important for it is how states can maintain power (Moore, Kosek, and Pandian 2003). Without land, there would be no domain of control, decision-making, or domination. I thus center the forced transition in social-

³ Glover (2001) and the American Wild Horse Campaign (2022) outline that ranchers have created gather companies that are contracted by the BLM to gather horses. Although these contractors earn money for these operations, often in multimillion-dollar contracts, the operations include extensive overtime, helicopters, saddled horses, and specialized knowledge tasks. It is not determined that they earn any profit from this work.

ecological relations in North America from federally sanctioned settler colonialism across the rural American West. See Figure 6 for a cultural depiction of settler logging in the Cascade Mountain Range that required horse labor.



Figure 6: Mural of early settler logging operations in the Cascades, located in Klamath Falls, OR, 2022

Colonialism dramatically transformed social organization globally. World system theorists have explored this impact, but colonialism has only recently become more widespread within sociology as a discipline (Go 2013; Robison and Crenshaw 2014). The United States, for instance, has been normatively understood politically as an anomaly, where colonialism in the United States was a historic incident, concluding with the defeat of British control (Smith 2018). Such a narrative is an attempt towards colonial self-supersession, whereby United States' colonial history was superseded by a democratic state. In this view, the United States became postcolonial through settlers political, economic, and legal enactments. This postcolonial orientation ignores the present Indigenous peoples and is premised on the idea of Indigenous people's "going away" (Veracini 2011:2). Comparative historical sociologists have recently reconceptualized the United States as a colonial empire (Go 2011; Bacon and Norton 2019).

Indigenous scholars identify the process of settlers remaining after initial colonization with the purpose of accessing and controlling all beings and geographies within the place of

colonization as settler colonialism (Wolfe 2006; Veracini 2011; Glenn 2015; Whyte 2018)⁴.

Settlers created ruling relations, land ownership patterns, etc. that became structured into a new government premised on control over Indigenous peoples and the land they inhabit. Thus, settler invasion is understood as a “structure rather than an event”, embedded within a settler state’s formation and ongoing activities (Wolfe 2006:402).

Settler colonialism is a racialized project (McKay, Vinyeta, and Norgaard 2020; Vinyeta 2021). McKay and co-authors (2020) argue that “European theft, commodification, exclusive selling, and exclusive management of Indigenous land as administered and regulated by the settler state are at the heart of structural racism in the U.S.” (2020:6). Scholars have emphasized the roles of racialization and othering as the primary form of discursive legitimization for militaristic, political, cultural, and environmental genocide against colonized communities (Magubane 2004). The racial formation of Indigenous peoples is patterned by the colonial racial project, where European colonial settlers and their descendants constructed ideas around human difference and used that to justify unequal social relations (Omi and Winant 2014). The material-ideological motives of European imperialism, possessive logics of “the divine right of white

⁴ Whyte (2018) provides a more detailed definition of settler colonialism. It is “complex social processes in which at least one society seeks to move permanently onto the terrestrial, aquatic, and aerial places lived in by one or more other societies who already derive economic vitality, cultural flourishing, and political self-determination from the relationships they have established with the plants, animals, physical entities, and ecosystems of those places. When the process of settler colonialism takes place or has already occurred in some region, the societies who are moving in or have already done so can be called ‘settlers,’ and the societies already living there at the beginning of settlement, ‘Indigenous peoples.’ The settlers’ aspirations are to transform Indigenous homelands into settler homelands. Settlers create moralizing narratives about why it is (or was) necessary to destroy other peoples (e.g., military, or cultural inferiority), or they take great pains to forget or cover up the inevitable militancy and brutality of settlement. Settlement is deeply harmful and risk-laden for Indigenous peoples because settlers are literally seeking to erase Indigenous economies, cultures, and political organizations for the sake of establishing their own. Settler colonialism, then, is a type of injustice driven by settlers’ desire, conscious and tacit, to erase Indigenous peoples and to erase or legitimate settlers’ causation of such domination” (2018:134–35).

people to steal” were organized by white supremacy, profit motive, and capitalist ethics (DuBois 1920:55; Moreton-Robinson 2015a). It was made physically possible through colonization and genocide. Racism continues to define the lived experiences of Indigenous peoples and communities of color in North America.

Sociological analysis has recently begun to draw attention to settler colonialism. This scholarship focuses on federal-Indigenous relations, raising key questions about justice, emotions, identity, resistance, environmental relations, capitalism, and power (Steinman 2012, 2016; Norgaard and Reed 2017; Holleman 2017a, 2018; Norgaard 2019; Bacon 2019; Norgaard and Fenelon 2021). It is unclear to sociologists, however, how settler colonialism continues to operate, manifest, and be justified by a settler state. For instance, sociology has yet to theorize how settler colonialism undergirds normalized state logics and processes, including modern environmental governance regimes. By ignoring the ongoing processes of settler colonialism within the United States, sociology continues to perpetuate the quotidian naturalization of U.S. dominance over occupied Indigenous lands and misses important state-political contextualization.

Aside from a few studies (Bacon and Norton 2019; Rocha Beardall 2022), the ongoing settler colonial ramification inherent in U.S. modern state operation thus far has been neglected by sociological research. Although racism is central to settler colonialism and state logics, it has transmuted its logic “into different modalities, discourses and institutional formations” present in modern state operations (Wolfe 2006:402). A racialized discursive strategy, for instance, is no longer legally able to justify U.S. federal actions, at least overtly. This dissertation explores the banal processes in which white political power “circumscribes and mitigates the exercise of Indigenous sovereignty” within a federal agency program (Nicoll 2004:19). Thus, this work

contributes to our understanding of how an agency program whose activity is not scripted through a racialized lens still has racialized impacts. The focus of this research, more specifically then, is to explore how settler colonial logics continue to inform U.S. environmental land management regimes through the WHB Program case. I ask: What are the contemporary manifestations of ongoing settler colonial logics? How have they been transmitted and institutionalized within modern, normalized, and legal state operations?

Contemporary environmental rangeland conditions across the American West are in a dire state. Range equines are often framed as one of the predominant causes for these undesired and recently changed environmental conditions, primarily due to the lack of systematic management. Settler colonialism is a relevant theoretical tradition to contextualize the temporal and spatial U.S. state land management decisions about range equines because of its foundational relevance for the development of the U.S. state and because European colonial conquest transformed the social-ecological relations within the geography under study. Therefore, in this dissertation, I analyze the WHB Program from a settler colonial theoretical lens.

Methodological Approach and Data Collection

I use an institutional ethnographic (IE) methodological approach because it can explain how the management activities and decisions of BLM personnel are coordinated or ruled institutionally. IE begins from the experience of people and then follows the institutional processes that shape those experiences (Devault and McCoy 2006:21). This method of inquiry “explores the translocal relations in which people’s local doings participate and by which they are organized... finding those extended relations that coordinate multiple settings translocally” (Smith 2005:49), such as when an agency headquarters guides activities at different locations.

This involves exploration at the various decision-making levels to discover the institutional factors that shape social organization (Smith 2005). By social organization, I mean that “people’s actions are coordinated and concerted by something beyond their own motivations and intentions” (Campbell and Gregor 2004:30). Social organization guides workplace activities, perceptions of range equines, and what management activities are legally allowed. The IE methodological approach recognizes that social organization and relations are highly organized and do not happen by chance.

Although early IE methodological approach was originally used to understand individual-level experiences, I think it is also a relevant method for understanding WHB Program experiences due to its focus on internal social organizations. More recent projects that used an IE approach include the Mars Rover Spacecraft decision-making (Vertesi 2015) and international environmental governance decision-making (Eastwood 2019). It was also employed as a decolonizing method for health research with the Sheshatshiu Innu First Nation (Morton Ninomiya, Hurley, and Penashue 2020).

I argue that IE is a useful method of inquiry to map the settler colonial ruling relations that structure range equine management in the United States. “Some elements of ruling arise formally and explicitly through legally binding discourses. Often ruling happens less explicitly as people consult their own understandings of prevailing and dominant discourses and act accordingly” (Campbell and Gregor 2004:41). In this way, the proposed research suggests exploring how science and other decision-making factors create a “complex ruling apparatus” that agency employees navigate on a daily basis (Devault and McCoy 2002:754). Thus, this method is relevant for exploring settler colonial ruling relations that structure agency decision-making across multiple states. The method allows for a studying-up of the agency, from the field

to BLM Headquarters personnel, to case law. This allows me to respond to my research questions through an analysis of how settler colonialism “rules” the WHB Program.

Following an IE approach, I engaged in a variety of qualitative methods, including interviews, observations, and textual analysis. See Table 2, which outlines these three methods and an overview of the data I collected within each. Qualitative semi-structured interviews provide in-depth discussions with interview participants. Interviews allow for follow-up questions and provides a space for the interview participant to direct what information they think the researcher should know. The reasons for conducting interviews include developing detailed and holistic descriptions, integrating multiple personal experiences and perspectives, describing processes and events that occurred in the past, understanding how those events are interpreted by those involved, and allowing for intersubjectivity where quotes help readers better identify with respondent’s experiences (Weiss 1994:9–10). The underlying assumption of this method is that interviewees are objects of knowledge and the “aim is to hear from respondents about what *they* think is important about the topic at hand and to hear it in their own words” (Blackstone 2012:9.2, emphasis in original).

Table 2: Overview of methods and data collected

	Type	Quantity
Interviews	BLM employees, WHB advisory board members, range scientists, livestock ranchers, WHB advocates, federal lobbyists, Tribal Natural Resource Directors	49
Observation	BLM organized, WHB stakeholder organized, public auctions and adoption events, horse helicopter and bait trap gathers,	32
Documents	Environmental assessments and impact statements, court case opinions, BLM procedures, federal letters and testimonies, advisory board meeting minutes, federal laws, and WHB reports	227

I collected data over the course of 22 months between May 2021 and March 2023. During this time, I completed 49 interviews with 47 people from across nine different states⁵. Interviewees included BLM field and headquarters personnel, national WHB Program advisory board members, livestock ranchers, natural resource directors from Indigenous Nations, members from cooperative partner organizations, western scientists, horse and burro advocates, and federal lobbyists. I conducted interviews in a variety of locations, including virtually, on rangelands, in casino restaurants, and even in grocery store parking lots. Interviews averaged almost 2 hours in length.

I also attended BLM WHB public events and hearings, which are useful for understanding how people communicate WHB Program frameworks and decisions. This also provided insight into how those who attempt to influence BLM WHB decisions communicate their knowledge, perspectives, values, etc. In this way, observations lend themselves to understanding accessible agency-public interaction. I attended 32 public and private events both organized by the BLM as well as those organized by WHB stakeholder organizations. A few of these events were held virtually, while others were in-person. Some of these virtual and in-person events lasted for multiple days. Some examples of the kinds of events I attended include BLM helicopter and bait trap horse gathers, BLM motorized vehicle use hearings, adoption events, cooperative non-profit board meetings, conferences, educational events, and Resource Advisory Committee meetings.

I went on five separate fieldwork trips to six different states, driving a total of 8,000 miles. I additionally traveled by bus and airplane. During these fieldwork trips, I visited 10 herd management areas in six different states to better understand the landscapes of concern. Seven of

⁵ Some interviews were conducted with two participants. I also interviewed some participants more than once.

the herd management area visits were led by a BLM personnel as a range tour, lasting at least three hours each. I visited six museums and cultural centers to better understand cultural place history. While attending these events and conducting additional observations, I took over 1,000 photos to help readers better visualize the rural rangelands of this fieldwork. All photos shared in this dissertation are images I took on an iPhone 6s, unless otherwise noted.

Through my BLM-approval process, I received a potential contact list for BLM interview solicitation. I used this list to guide interview recruitment. I also developed a list of both nearby Indigenous Nations/Tribes as well as non-profit partner and advocacy groups. I engaged in interview solicitation from these lists. I snowball sampled for additional contacts from existing research participants. For fieldwork locations, I kept record of BLM WHB Program and stakeholder events (adoptions, gathers, etc.) and made fieldwork trip plans based on my ability to combine multiple events and/or interviews into one field trip. I was unable to visit the Southwest in my research fieldwork and did not interview anyone from the Southwest region, so I do not speak to range equine management in that region.

During and after observations concluded, I jotted fieldnotes. These are the written records of systematic observations focused “on *how routine actions in the setting are organized and take place*” (Emerson et al. 1995:27, emphasis in original). Fieldnotes are experiential and reflect “what is interesting or important to the people [they] are observing” (Emerson et al. 1995:14). The notes focused primarily on description, however, due to the inherent of subjectivity present in this methodology, particular descriptive accounts were emphasized over others. For example, I pay particular attention to what is significant or unexpected, reoccurring language used by agency employees, organization policies and practices, decision-making processes, and “*what*

those in the setting experience and react to as ‘significant’ or ‘important’” (Emerson et al. 1995:25, emphasis in original).

Within IE, textual documents are also paramount for the analysis of social organization and ruling relations. This is because “it is what enables reach beyond the locally observable and discoverable into the trans-local social relations and organization that permeate and control the local” (Smith 2001, 2006:65). Not only do textual documents coordinate workplace activity, but they also “coordinate our consciousnesses with those of others elsewhere” (Smith 2006:66). Textual documents are used to mediate the activities of social organizations and within this case are used to determine management approaches. This includes laws, bureaucratic policy, environmental assessments, etc. that delineate organizational and employee tasks, activities, and responsibilities as it relates to WHB and rangeland management.

Given the project’s research questions, it is necessary to understand how texts not only shape BLM employee’s work but also how those texts reflect a historical consciousness. Therefore, I conducted content analysis of texts that mediate BLM WHB Program actions. I gathered 94 WHB environmental assessments and one WHB environmental impact statement, 29 court case documents, 28 BLM WHB procedure documents (handbook, instructional memorandum, etc.), 17 federal and state government documents (senate subcommittee testimonies, house subcommittee testimonies, congressional letters, and state house bills), 41 WHB advisory board meeting documents, eight federal laws, and nine reports on the WHB Program. As previously mentioned, this data was collected as part of a larger BLM – approved research project on the social science dimensions of WHB Program decision-making. However, due to the extensive scope of data collected, time required for inductive analyses, and limited funding available, I was unable to complete that project for this dissertation. Instead, I decided to

analyze select data based settler colonial theory to answer questions presented about the social history and context for which the WHB Program operates.

Analyses of interview, observation, and textual qualitative data for this dissertation was theoretically driven by settler colonial scholarship, political economy, environmental sociology, as well as organization and work. Analytic coding followed Deterding and Waters' (2018) flexible coding strategy. I began with overarching index codes based on settler colonial theory, such as "settler governmentality" or "Propertied Boundaries". Within each indexed code, I conducted more focused analytic coding. For example, I coded "horses between boundaries", when range equines travel across different land ownership, within the index code of "Propertied Boundaries". This form of data analysis allows me to better answer my sociological theoretical research questions about the structure of settler colonial logics within modern environmental land management regimes.

Overview of Chapters

In the following five substantive chapters, I explore five ways ongoing settler colonial logics are structured within environmental land management regimes as theorized by settler colonial scholars. These are a 1) settler governmentality, 2) propertied boundaries, 3) creation of settler ecologies, and 4) erasure of contemporary Indigenous people and their knowledge. Through the analytic flexible coding of the interview, fieldnote, and textual data gathered, I identify how BLM's WHB Program manifests processes identified in settler colonial theory. My theoretical intervention deepens our understanding of contemporary manifestations of these structured settler colonial logics. Although these five settler colonial logics are discussed

independently, they are conceptually interlinked as one holistic process within settler colonialism. They justify each other, subsume each other, and create each other.

In chapter two, I explore how settler governmentality is evinced within the BLM federal agency. This chapter explores state formation, the history behind the creation of the BLM, and the laws that guide its legal requirements. This chapter also documents how the WHB Program fits within and is guided by the settler U.S. state structure.

Chapter three explores the construction of propertied boundaries whereby federal, private, and reservation lands are seen and legalized as distinct (Moreton-Robinson 2015a; Long and Lake 2018). These boundaries are used to reaffirm U.S. state control and limit traditional Indigenous practices within federally managed places. This chapter discusses the nuances of interspersed private-federal land, and how those land ownership patterns benefit the decisions and needs of the private owners. Here, equine management is also bounded by Nation lines and suppresses agentic and historical migration.

In chapter four, I discuss how European settlers created new settler ecologies in herd management areas. European settlers transformed the landscape and social relations with place, which differ from the Indigenous social-ecological relations that existed prior to settler colonization (Kimmerer 2013; Whyte 2018:135; Holleman 2017a, 2018). This chapter discusses the social-ecological traps that make persistent ongoing undesired environmental states within herd management areas (Long and Lake 2018). This change contrasts with laws that assume a “natural ecological balance” as possible during a time of anthropogenic induced biophysical changes.

Chapter five explores the continuing U.S. state erasure of present Indigenous peoples within the WHB Program (Veracini 2011). This is completed legally and culturally by The

Rights Narrative through the “pioneer” cultural symbolism about range equines and their importance in the creation of the modern U.S. state. This erasure work is also conducted through omitting information about Indigenous horsemanship and breeding knowledge, as well as discursive acts to minimize and discount Indigenous knowledge as being relevant for this program.

My concluding chapter provides a synopsis of the findings and arguments presented in this dissertation. I then discuss the organizational challenges for improving range equine and herd management area management given the settler colonial context in which this program is legally required to operate within. I end by contemplating what the settler colonial logics structured into U.S. environmental governance protect and promote. These, again, inform the WHB Program and operate in ways that constrain BLM personnel decision-making.

CHAPTER 3: SETTLER GOVERNMENTALITY AND BIOPOLITICAL CONTROL

We met at 4:30 am at the corral facility, about 30 minutes outside of the nearest town. Today, there were three WHB Advocates, two “feelmakers” (filmmakers), the BLM Incident Commander, and I. We caravanned on a gravel road for about thirty minutes before arriving at the gather site. It took us a little bit of time to gather what belongings we needed for the day and hike up the hillside into the few feet of flat ground amid a rock face. This is our horse gather observation site. The valley below us is where horses will be driven by a helicopter into a gather chute.



Figure 7: Images of the WHB gather observation site at sunrise. The photo on the left is the gather observation site, tucked up a hillside amongst rocks. The photo on the right is the sun rising, directly across from the observation site.

At 6:30 am the gather contractors set up the gather chute jute posts. These are long burlap fences whose function is the funnel horses to the center. In the center is a metal gate chute that is a long rectangle, single track. There is a foal pin at the end of the metal chute to separate foals from stallions and mares. The gather contractors had to wait for observers’ vehicles to be brought back down behind the gather operation site, near where the temporary corral facility was set up on private land, and out of the view of herded horses.

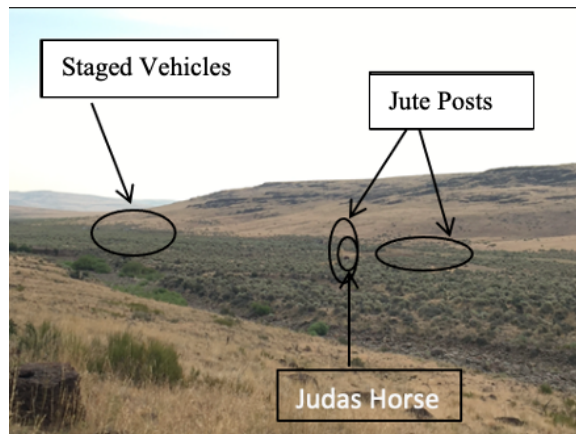


Figure 8: Marked outline of WHB gather corral, 2022

At 7:40 am I began to hear the helicopter. It is a distance away on the other side of the gather chute.

At 8:00 am I began to see herds gathered in that direction, way out in the distance.

At 8:22 am, we could see the helicopter directly in front of us above the ridge across the valley from where we sat at the gather observation site. It is driving horses down the hillside just on the other side of the jute posts. The helicopter is hovering as we see a large group of horses coming across the top of the ridge in front of us. The horses appear to be trotting. The helicopter pilot tried to bring the horses around the backside of that hill. Contractors brought out a second judas horse staged at the entrance of the jute burlap fence. The horses came out in the front and the helicopter tried backed them up to come down the slope with a more direct shot into the chute. But the horses still came down the slope on that hillside in front of us. This was a long line that the helicopter brought in. One foal turned and ran out. The helicopter easily, and at a distance, brought the horses in. All entered the gather chute by 8:37 am.



Figure 9: Helicopter horse gather operations, multi-colored horses, and a very young foal trailing

At 8:45 am the contractors brought up the trailer and shewed the horses in with plastic bags on sticks. You can hear horses neighing and hitting the metal chute gate that encloses them. You can hear hooves on the trailer and contractor voices. The helicopter hung out hovering near the gather chute. Then the helicopter landed nearby, and the pilot walked to the trap site to help.

The first trailer drove off with one load of horses, the rest remained and neighed loudly. I saw the white bag sticks waiving constantly around the trap site. Another trailer backs up and the horses neigh. That trailer loaded and left. Many more horses are still waiting in the trap. A few minutes later, two more trailers arrive. They contractors loaded the first with horses, it left. Then the other back in. That trailer left at 9:17 am. Another trailer came to load horses and left. The next trailer arrived to load horses. Then another came and left. Then another.

At 9:50 am approximately 88 horses that were gathered in one push had all been loaded onto 8 trailers and taken nearby to the temporary corral on private land.

Over the course of three weeks the contracted gather crew, with the support of BLM personnel, gathered 2,111 range horses and 339 range burros from this herd management area. The fieldnotes above come from one morning on one of the gather days. In 2022, 20,193 range equines were removed from BLM managed lands⁶. This is the largest removal of range equines within one year in the program's history. Gathering equines requires local and federal government approval apparatuses, policy documents, negotiations among stakeholder groups, management of outside contractors, integration of heavy machinery and equipment, corral spaces for removed equines, etc. That same year only 6,669 horses and donkeys were adopted and placed into private care leaving the rest to be held off-range and separated by biological sex categories. How did range equines located in the most remote parts of the continental United States come to be governed in such a way? What does this form of governance mean for the rangeland and equine wellbeing, including those removed as well as those that avoided capture?

In this chapter, I discuss the ways in which the United States developed a governance structure that has led to this form of range equines across the American West. This governance structure developed initially through US expansion and control of the American West. For federally control and power over all beings and land management decisions, the United States removed Indigenous peoples dispossessing them of their lands and, for many, their horses. Meanwhile, the US promoted white settler expansion and paid homesteaders' money for remount horses that were born on the range. Settlers developed a form of horse management that resulted

⁶ WHB Program statistics provided by a BLM WHB personnel who developed database from institutional knowledge, databases, white papers, congressional reports, and public lands statistics, confirming correct information with relevant WHB personnel.

in the growth of range horse populations for sale and use in military and extractive industries. At the turn of the 20th Century, for instance, there were estimated 100,000 horses in Nevada alone (Gruell 2012). However, public witness of motorized gather operations and population reductions led to social concern for range equine preservation (Kania 2012). Through WHB advocacy, U.S. Congress unanimously voted to protect these species, however, without the same level of management provided by prior Indigenous groups or settler ranchers. This resulted in increasing range equine populations from those reported in the 1970s. Over the course of 100 years, range equines transitioned from an economic and militaristic resource to an economic and ecological threat. The way that the U.S. government thinks about and manages range equines changes over time and is not permanent nor stagnant. Rather, the governance of range equines is currently undergoing deliberation and change, even while many within the BLM's WHB Program continue to embrace motorized range equine management practices.

In the following sections, I will outline sociological settler colonial theoretical discussion that pertains to these elements of the US governance structure. This includes settler governmentality, biopolitics, political economy, and bureaucratic formation and paradigms. I tie each of these points to the ways in which range equines and their locations are governed by the BLM, an agency of the United States federal government.

Settler Governmentality Theory

The ideas of governmentality relate to the art of government formation, including the techniques that make beings and places governable. Foucault is a leading social theorist that describes ways in which the state generates power and instills that power across society. In 1978, Foucault presented a lecture on the topic where he presented the concept of governmentality. He

understood nation-state formation to emerge in Europe between the 16th and 18th Centuries with the dismantling of feudal and monarchy systems to “territorial, administrative, and colonial states” which is the creation of centralized nation-state power through administrative apparatuses (Senellart 2007:88). For the nation-state to operate and be recognized by members of the society, the state developed socializing disciplinary power and control mechanisms over humans, more than human beings, and their environments.

To govern means to govern things. To govern range equines, for instance, involves responsibility for agency personnel, equine lives, taking care of the gather and corral equipment. Government rule over range equines takes into consideration the biophysical relations with governing structures and goals, such as drought or snow. What characterizes government of range equines is the practice of establishing relations among BLM personnel and external stakeholders in the development of socially approved management practices and the ability to engage in those management practices, leading towards government-desired outcome.

Governments arrange and mobilize to a purposive end. This purposive end is intended to benefit all participants. There is a social mass that succumbs and allows to be governed because it is presented by the state as in their best interests. For instance, within the WHB Program, the BLM is adamant that shewing range equines with pressing helicopters into a metal capture and then transported in motorized vehicles they have never experienced, is in their best interest. They argue this because otherwise range equine populations have the capacity to grow to an extent where they disrupt wildlife and starve themselves on the range. This relates to Foucault’s quote, “the common good and salvation of all” (Senellart 2007:98). The mission of the BLM follows a similar logic, “to sustain the health, diversity, and productivity of public lands for the use and

enjoyment of present and future generations”⁷. The BLM governs range equines for a purposive end of improved on-range equine health and the health of the rangeland. Efforts to reduce equine death from management tactics occurs through following Comprehensive Animal Welfare Program, which is a policy that outlines how agency personnel and contractors are to handle equines appropriately.

Belief in a government structure whose intent is society wellbeing simultaneously requires strict social adherence to government created laws. The creation of laws and bureaucratic institutions within nation-states are used to engage in the function of governing. To quote Foucault, governmentality is

“the ensemble formed by institutions, procedures, analyses and reflections, calculations, and tactics that allow the exercise of this very specific, albeit very complex, power that has the [human] population as its target, political economy as its major form of knowledge, and apparatuses of security as its essential technical instrument” (Senellart 2007:108).

Within the model of governmentality, the goal is human population growth and prosperity through engagement with the capitalist system of profit motive that is coerced through policing institutions. Although governmentality relates both to the development of a governing regime that has social buy-in, it also relates to the act of governing. Range equines were used for settler development and economic productivity. However, they now pose an economic and environmental threat, so they are now governed in a way of authorized capture, branding, harassment, and occasionally death through the notion of security (43 CFR 4700).

⁷ <https://www.blm.gov/about/our-mission#:~:text=The%20Bureau%20of%20Land%20Management's,of%20present%20and%20future%20generations.>

Governmentality that helped form the United States as a ruling power did not operate on the same timeline as that in Europe, rather, the creation of the United States as a nation-state was beginning in the 18th Century and continued through the 20th Century. Scholars refer to this government formation as settler or colonial governmentality. It differs from what took place in Europe in large part because of the US government's treatment of present Indigenous peoples within the domains that the United States continues to claim. In their discussion of settler governmentality, Morgensen (2011) highlights the relevance of settler colonialism as an underlying condition of governing.

“Settler colonialism has conditioned not only Indigenous peoples and their lands and the settler societies that occupy them, but all political, economic and cultural processes that those societies touch. Settler colonialism directly informs past and present processes of European colonisation, global capitalism, liberal modernity and international governance. If settler colonialism is not theorised in accounts of these formations, then its power remains naturalised in the world that we engage and in the theoretical apparatuses with which we attempt to explain it”

(Morgensen 2011:53).

Here Morgensen (2011) articulates that the U.S. creation of a settler governmentality resides on the naturalization of settler's claim to power and control. This necessarily involves the elimination of Indigenous peoples or “bad Indians” who did/do not succumb to settler colonial governance (Wilson 2009; Morgensen 2011:57). This erasure has been pursued through a variety of legal, economic, cultural, and militaristic practices.

In a collaborative work, Crosby and Monaghan (2012) define settler state formation as a *settler governmentality* as it is uniquely aimed at settler prosperity by eliminating Indigenous

threat, such as “Indigenous values, practices, knowledge, and subjectivities” (Crosby and Monaghan 2012:422). This is because Indigenous ways of life have been at odds with settler “prosperity through liberalism”, with capitalistic modes and thought that result in the exploitation of people and environment (Crosby and Monaghan 2012; Monaghan 2013:493). Possessive logics and new imperialist material-ideology rationalize and naturalize this nation-state control, power, and ownership of land through white supremacy, profit motive, expansion of democracy, capitalist ethics, and liberalism. (Moreton-Robinson 2015a; Holleman 2017a, 2018). Note that the naturalization of a settler governmentality is a unique phenomenon. As Weber (1978) articulates, “[p]ermanent agencies, with fixed jurisdiction, are not the historical rule but rather the exception” (1978:956). Here, the BLM federal agency and U.S. governing generally are recent phenomenon in the history of the Great Basin and Intermountain West regions.

Settler land grabbing justification, including the locations where range equines roam, not only stemmed from the racial formation of the people that governing states desired for labor or whose land they desired for their own livelihood and commodification, but also in their own perception that they have the right claim to land because of their cultural superiority (Monaghan 2013). This required the disappearing of Indigenous peoples so that settlers could claim and utilize the spaces that Indigenous peoples had cultivated. It is important to note that settler governmentality was also advanced by “greed-crazed” settler invaders themselves who desired “the riches available in, under, and on Indian soil” (Wolfe 2006:391). This includes American folk imperialism, which resulted in the loss of Indigenous life and dissolving of early reservations (Whaley 2014). Many of these activities were actively sponsored by the federal

government, such as paying settlers for Indigenous scalps, the death of Indigenous people⁸ (Risling Baldy 2018).

Settler governmentality is also tied to the erasure of colonial history and baggage, such as depicting a history of discovery and settlement, without Indigenous peoples. Settler governmentality is related to the specific rationalities such as being colonial but simultaneously presenting a depiction of post coloniality and U.S. permanence. The goal is to depict settler colonial governmentality and its ruling apparatuses as pervading over time (Anthony 2020). The WHB Program, in part, functions to communicate this normalized and settler prosperity across the American West. The protection of range equines is tied to their symbolism as living remnants of early pioneer settlement. Additionally, they are managed in places that settlers had managed horses in the 1970s, a limited time range for determining appropriate equine location. Lastly, they are governed in-boundaries, which is a settler perspective on range equine “appropriate” location that is not in recognition of their full history, only that of the more recent settler enforced history.

Although the WHB Program has only been in operation for 50 years and is still trying to determine its best forms of governing given the political, moral, ecological, and economic challenges and changes this program faces, it communicates its operations and justifications for those operations as if there is one clear and historic way to understand these species and the rangelands that they inhabit and that there is one clear management option. However, this management option (helicopter gather removals) has resulted in 60,000 horses stored off range.

⁸ Shoshone-Paiute of the Duck Valley Indian Reservation video that includes the US implementation of hunting Indigenous scalps: <https://www.youtube.com/watch?v=AnTaYEsXWAK>

Continuing to remove and store without culling, or significantly increasing adoptions, is unsustainable.

One WHB Advocate I spoke with discussed BLM's WHB Program's public messaging, which is aimed at clarity and social buy-in.

“The BLM is really good at messaging. They, they hit the same points over, and over, and over again. Horses are overpopulated. They're starving. We're doing this to help them. We want to create a thriving natural ecological balance. And they just pummel that, and they will hit that with everything.” (WHB Advocate)

The USGS, a research partner to the BLM, recently came out with a PopEquus modeling software, now available for the public to explore modeling scenarios based on limited variable inputs⁹. In the description of the software, the USGS present the “Problem” which falls in line with the Problematic Narrative, but simultaneously presents this concise messaging.

“Horse populations largely lack predators in North America, and populations experience rapid population growth rates (due to high survival and reproductive rates), such that populations can double in five years and triple in eight years⁴. These features have caused many wild horse populations to largely exceed the population size ranges identified as ecologically appropriate by the BLM and USFS natural resource managers (i.e., Appropriate Management Levels), and the entire BLM-managed wild horse population on federal lands tripled in size during 2010-2020^{2,4,5}. When horse populations reach exceptionally large sizes, horses can overgraze natural ecosystems, outcompete native wildlife for food and water, and experience density-dependent effects, such as mortality due to dehydration

⁹ <https://rconnect.usgs.gov/popequus/>

and starvation. These three outcomes are generally undesirable for both natural resource managers and U.S. citizens, who value the well-being of both horses and ecosystems on public lands.” (USGS 2023)

This messaging begins with the argument that the horse populations are growing because there is a lack of predators. Predators continue to be killed by the US Fish and Wildlife Service, especially when packs are known to have killed livestock. It assumes an Appropriate Management Level that is under scientific scrutiny (NRC 2013). It assumes that range equines are the only degrading problem on rangelands. It also assumes that these populations cannot be treated like wildlife and allowed to follow natural patterns of life and death on the rangeland as biophysical conditions change because of impacts to other species. This messaging is clear, concise, and consistent, in the face of a highly complex and uneasy to resolve land management challenge.

The paradigm that guides BLM WHB management is informed by a perspective that range equines are problematic, such as in the Problematic Narrative and in the USGS equine population model program description previously discussed. This is concerning because it presents a particular cultural paradigm for envisioning these beings. Even after they are removed off range, they are sent to off-range pastures where they meander in sex-based plots and are not used or part of human relations. In 2023, there are approximately 60,000 range horses (burros tend to get adopted out) that are held off-range. US taxpayers pay approximately \$27,500 per life of a horse to private ranchers that keep equines off-range¹⁰. In 2022 alone, the BLM paid \$83.5 million to cover the costs of off range holding. Off-range holding requires the largest portion of

¹⁰ <https://www.blm.gov/press-release/blm-awards-more-47-million-wild-horse-and-burro-training-and-adoption-programs>

the BLM budget and is reaching its max. In 2022, the BLM witnessed their largest range equine gather of 20,193 equines. In spring of 2023, the BLM released their 2023 gather schedule that only involves the removal of over 7,000 equines. BLM policy makers caution that they may not be able to gather as many equines because they can no longer pay for growing holding costs.

For some Indigenous peoples, problematizing horses is a concerning way to think about horses that have historically had bonds with humans. This is especially concerning as Indigenous perspectives in animal sciences have long been suppressed (John and John 2023). For the Xenigwet'in First Nation in British Columbia, for instance, they embrace a kincentric ecological relational approach for range horse management that understands their agency (Bhattacharyya et al. 2011; Bhattacharyya and Slocombe 2017).

However, many Tribes/Nations with large horse populations engage in gathering and transport to slaughter. When horse slaughter was prohibited in the United States in 2007, “it didn't save any horses. All it did is made the ride longer. So instead of going to Texas, and Oklahoma, and to go onto those horse plants in the United States, they're just going to Canada and they're going to Mexico. So, what's happening is Canada and Mexico know that we can't process our own wild horses. Our own horses in general. So, instead of, so as a result, they're buyin' these horses from us at'n extremely low rate. They're processing 'em, they're turning around and selling those products back to us at an extremely high rate... So all it's done is taken away the, the business- the American business profit from, from the wild horses.” We don't eat horses in the United States “because we are ignorant and arrogant to other cultures. And we live such a privileged, comfortable life in America, that we get to pick and choose what we can and cannot eat” (Indigenous Partner).

The above quote points to concerns about restricting human use of range equines, in this case, for sale to slaughter. The National Congress of American Indians also developed resolutions to allow for horse slaughter on reservations and for allowing transport of horses across U.S. borders (Garcia 2008; Keel 2013). This contrasts with recent SAFE (Save America's Forgotten Equines) Act legislation currently within the House Committee on Energy and Commerce. The SAFE Act is promoted by WHB Advocates, because this act "prohibits the transporting, receiving, possessing, purchasing, selling, or donation by a person of an equine (e.g., horse) that the person has reason to believe will be slaughtered for human consumption"¹¹. This poses a economic handicap for Tribes/Nations that have large horse populations.

Settler Government Biopolitics

Part of establishing a sovereign government is tied to its ability to control beings and bodies within its domain. This kind of control is coined as "biopolitics" or "biopower" which relates to the "anatomico-politics" of controlling bodies (Foucault 1978). Foucault was interested here in the control of human bodies. However, subsequent work has documented the ways in which animals are governed and controlled through similar biopolitical mechanisms (Rinfret 2009). In this section, I outline some of the ways in which the U.S. government engages in biopolitical control over Indigenous bodies and how this relates to the management of range equine species.

Prior to European arrival, "Indigenous peoples had occupied and shaped every part of the Americas, established extensive trade networks and roads, and were sustaining their populations by adapting to specific natural environments, but they also adapted nature to suit human ends"

¹¹ <https://www.congress.gov/bill/117th-congress/house-bill/3355>

(Dunbar-Ortiz 2014:27). These heterogeneous communities had “sophisticated government structures, advanced knowledge, and progressive social systems” (McKay et al. 2020). Although there is some scientific uncertainty as to the exact population of Indigenous peoples in present-day United States, estimates range from 8-112 million people (Denevan 1992). We know that through settler colonialism that there were systematic killings of Indigenous peoples through the spread of disease, warfare, forced relocation, and forced suppression of social-ecological relations (Dunbar-Ortiz 2014). British colonial rule and later the U.S. nation-state, embarked on a land conquering and human controlling project that reduced Indigenous populations by 90 percent through a variety of genocidal tactics through the imperialist prerogative of annihilation until total surrender (Williams 1980; Adams 1995; Dunbar-Ortiz 2014).

Darren Parry (2019) wrote a book on the U.S. sanctioned massacre of Northwest Shoshones and their subsequent survivance whose ancestral lands is now managed by the BLM. He asserts how the Northwest Shoshone Tribal leader during this time learned about the difference between settlers and Indigenous peoples.

“Chief Sagwitch ultimately realized that there were two different groups in the world. One group was greedy and wanted everything. The other group only wanted to live and travel around their land as they had done for centuries. The first group made their wishes and dreams come true by making themselves the conqueror of the second, at the expense of a defenseless people who only wanted to be left alone.” (Parry 2019:50)

Today, Indigenous people who maintain a Tribal land base as allotted by the US government are only 2.6% of their estimated historical area. The U.S. constructed land base is located on average approximately 150 miles from their ancestral lands and in places that are more exposed to climate

change risk and hazards, least economic mineral value, and closer to federally managed lands. 42.1% of Tribes pre-colonization do not have federal or state recognized land base (Farrell et al. 2021).

The federal U.S. government facilitated the elimination and erasure of Indigenous people while simultaneously promoting settlement by white Europeans. This settlement was intended to be permanent with “settler sovereignty over all things in their new domain” (Tuck and Yang 2012:5). This includes the replacement of all social and ecological arrangements by the settler society. The land that settlers arrived to was highly managed by the current inhabitants and found that it was well-suited to support human life. British colonists viewed the land as highly valuable as it could support British expansion and the commodification of resources (Glenn 2015). Thus territoriality is settler colonialism’s “irreducible element” (Wolfe 2006:388). Through land ownership, the governing settler state stole sovereign rights in their new domain.

There are multiple accounts of U.S. military genocide against Indigenous peoples’ horses in the 1800’s as a means of genocide against Indigenous people. This U.S. military tactic was largely due to the power that horses provided Indigenous peoples when evading and warring against settler invaders and for their importance to Indigenous livelihood. For example, in 1858, the U.S. military killed approximately 900 horses of the confederate Plateau Indian Tribes, including the Spokanes, Cour d’Alenes, Yakimas, and Palouses¹². The Oceti Sakowin people also saw the massacre of a couple thousand of their horse kin by the U.S. military (Heart 2014). These were U.S. military sponsored genocidal practices against the present Indigenous people, akin to buffalo and sheep slaughter (Weisiger 2011). Apsáalooke reported hundreds of horses being stolen by white settlers. These practices likely occurred in many other locations, especially

¹² <https://properties.historicspokane.org/property/?PropertyID=2086>

during U.S. sanctioned massacre and warring episodes and unsanctioned American folk imperialism. This was a form of biopolitical control over both Indigenous peoples and relational horses that were part of their livelihood.

Today, horses are not federally managed in Washington, South Dakota, or northeast Oregon, where these horse massacres occurred. White settlements closed the horsemanship practices of the present Indigenous peoples, outside of stagnant reservation lands. Indigenous horsemanship practices were long restricted prior to the creation of herd management areas in the 1970s. This restriction continues to shape Indigenous-US relations, especially as it relates to horse management.

Where equines are federally allowed to roam today are a result of settler ranch management and dispersal. The location of herd management areas where horses and burros “are to be considered in the areas where presently found” occurred in these places due to settler rancher distribution, use, and management (Pub. L. 92-195:1). Designated spaces for horses and burros to roam today were determined by where these species were in the 1970’s. This is also based on where settler ranchers chose to not “claim” their WHB populations due to the financial expenses the federal government set on such activities.

According to two interviewees whose ancestors managed horses prior to the Wild and Free Roaming Horses and Burros Act (WFRHBA) of 1971, discussed how prior ranch management is tied to current herd management areas today.

“If you want to keep getting the horses off your range, because then they were going to be, the government was taking care of. The ranch couldn't take care of them anymore. So, if you claim them, that meant you had to gather them and you would also incur a trespass suddenly. So, some ranchers did not claim them, then

the government took over the management of the horses... if they [large ranch] would have claimed those horses and removed them, there would be no wild horse, there wouldn't be a [specific] herd management area... So that's the genesis of the whole thing is these horses, the bulk of these horses and herd management areas came from the ones that people didn't claim. There were some people that had their bunches of horses and when the thing [WFRHBA of 1971] came in, they were gone, they passed on, or moved on, or whatever.” (Ranch Stakeholders and BLM WHB Partners)

Although many of these equines were brought to these places from settlers, there are many also that began to roam after their Indigenous human relatives died from settler colonial imposed disease and warfare (Ewers 1955). The present location of herd management areas is thus an outcome of this long history of settler colonialism across much of North America.

Some Indigenous Bands and Tribes lived with horses and used them to travel across the American West region, bringing them to places with fresh forage and water. Other Indigenous groups had knowledge concerns about equines in their ancestral lands. The Confederated Tribes of the Goshute, for instance, have long been concerned with the impacts of horses on their cultural food stuffs. According to the Utah History Encyclopedia,

“In the fragile environment of the desert, domestic livestock represented an important source of competition to the Goshutes. They had never raised horses because the animals would eat the grass which they relied upon for seeds and

fiber. Water, always in short supply, was denied to the Goshutes by farmers, ranchers, and Overland Stage stations.”¹³

However, settlers brought horses to the arid, present-day Eastern Nevada, where the Goshute people are sanctioned by the US government. The US military brought horses to grow their populations and to degrade environmental resources that Goshute relied upon. The BLM’s Antelope herd management area’s website description, which borders the Goshute’s Deep Creek reservation, describes the origination of horses to this fragile ecosystem.

“During the 1900's to the 1940's, the Army Remount Service was active in a portion of the Antelope/Antelope Valley Complex. Periodically, the Army would release animals in the wild to upgrade their stock. The released stallions were mainly thoroughbreds or Morgans. A few draft blood lines were introduced to develop a hardier strain of horse to pull wagons and heavy artillery. As a result, the wild horses found in the complex are hardy and sound.”¹⁴

By bringing in thoroughbreds and Morgans, settlers aimed to upgrade the stock and increase population for military purposes. However, this also occurs in a place that had not previously had large grazers and is within the ancestral lands of Goshutes, creating a form of biopolitical violence against Goshutes through resource depletion and U.S. military presence. The Antelope herd management area description does not describe neighboring present Indigenous peoples nor their desire for reducing impacts on the landscape and their food cultural stuffs from horses.

Rather, the Antelope herd management area history describes and justifies horses because of

¹³https://www.uen.org/utah_history_encyclopedia/g/GOSHUTE_INDIANS.shtml#:~:text=They%20had%20never%20raised%20horses,ranchers%2C%20and%20Overland%20Stage%20stations.

¹⁴ <https://www.blm.gov/programs/wild-horse-and-burro/herd-management/herd-management-areas/nevada/antelope-valley>

historic U.S. military release and breeding. This communicates a partial history of this place, relying solely on the settler history.

This information may appear in tension, that the US government military killed horses in one location but then brought them into another. However, this is a contradictory biopolitical management tactic that resulted in the control and suppression of Indigenous lifeways in both locations. It is important to note here the different geographic areas that these alternative military management tactics were employed. The horse killing, for instance, taking place in a more lush and desired settler ecology due to large river system where Indigenous peoples lifeways were integrated with that of the horse. The horse integration, in the other case, took place in a highly arid region with little water sources, little interest for settlement by European immigrants, and where Goshutes chose to not integrate horses into their lifeways.

As Morgensen (2011) articulates, “we must confront our inheritance of settler colonialism as a primary condition of biopower in the contemporary world” (2011:52–53). Although originating through military conquest and biopolitical power, the United States presents itself as a rational authoritative rule while naturalizing its governance frameworks even under conditions of contradiction. Part of settler governmentality involves the seemingly permanent nature and rationalization of US biopolitical control. The recent history of these Indigenous and horse biopolitical control still affect contemporary US-Indigenous and horse relations. The United States maintains this power and dominance by pushing out other frameworks. Settler colonialism imposes settler frameworks of governance that Indigenous people and current federal managers must work through and operate within. This is a system that has been created with no functional alternative, making it difficult to operate outside of the

settler colonial system. In the next section I will outline the political economic logics of this imposed settler colonial system.

Settler Colonial Political Economy

One of the ways that the United States communicates its permanence and naturalization is through the creation of laws whose aims are to create a guise of a permanent ruling. These laws are deeply coupled with economic liberalism and government control of the economy through neoliberalism. Large-scale social buy-in to these ruling apparatuses are in part tied to the republican nature of governance where elected officials make decisions on behalf of the governed body. These decisions are nested into laws that are difficult to change and upend. Rather than removing early state formation laws, the US government creates new laws whose aim are to resolve the ill effects of prior laws, creating a façade of US sanctioned appropriate legal supremacy and permanence. This, however, creates legal tension for street-level bureaucrats, such as BLM employees, that must govern lands and beings in accordance with contradictory laws. In this section, I will outline ways in which the economy is tied to legal processes and how these laws inform the creation of the BLM and what they mean for the WHB Program today.

A major element of governmentality, and settler governmentality, is the application of economy to increase the power and wealth of the state. This is supported, in part, for the ability to grow the government and provide supervision and resources across many domains. As Foucault articulates, “the art of government is precisely to exercise power in the form, and according to the model, of economy” (Senellart 2007:95). During the development of present-day nation-states in Europe, the government grew from the bourgeoisie class of mercantilists, and the creation of laws that spanned beyond feudal systems to govern the growth of

commodities. The dispossession of people from rural regions, to be replaced by sheep for wool production is one example of conjoined economic-legal apparatuses (Marx 1976). In this case, the bourgeoisie class worked with royalty to enforce these laws. Today, royal families are still deeply tied to British economy and laws.

Settler governmentality is a ruling apparatus to protect settler colonial interests, economy, and land. Sociologists might explain this through primitive accumulation and routine exercise of symbolic power by the state to regulate social life and to legitimize its political and administrative control (Marx 1976; Bourdieu 1991; Loveman 2005)¹⁵. They achieve this systematically through their many bureaucratic structures and institutions. The primitive accumulation that occurred in present-day US structurally dispossessed present and future generations of Indigenous people from their land, in part, through the creation of structurally negated property rights tied to economic production (Nichols 2020). The creation of the new US settler colonial nation-state is like the taking over of many unique governments by one, and this process is still ongoing.

Jessop (2016) argues that “[t]he key to primary state formation is the development of logistical capacities to extend control over a territory and to govern the expanded territory through a multilevel administrative apparatus that had developed an internal specialization of tasks” (Jessop 2016:127). These aspects shape the state to appear encompassing and strong through its large public sector, rule of law, societal support, cohesive bureaucracy, interventionist policy, and power to limit external interference (Jessop 2016). Multilevel administrative

¹⁵ Discussing the development of the settler United States governmental system and all its interacting elements is relevant but extends beyond the purpose of this paper. For more detail on this process and nuances of the U.S. state formation, see Jessop (2016) and Farber (2021).

apparatus refers to the agencies, which function through a bureaucratic formation, to implement federal decisions.

The BLM is a federal agency that emerged from the promotion of settlement across the U.S. territory. This agency also acts as the administrative apparatus to implement US laws and governmentality in the most rural areas of the continental states. Prior to the creation of the BLM, there were multiple laws that have since informed the BLM in their everyday operations. In 1862, the Transcontinental Railroad Act provided railroad companies a right-of-way and interspersed square mile checkerboard public domain ownership on either side of each track. Chapter two discusses the ways in which checkerboard public-private ownership structures shape WHB management decisions. In 1872, the General Mining Law created the right for mineral extraction. This law still overrides subsequent laws, such as the Graves Protection and Repatriation Act (1990) and the Executive Order 13007 on the Accommodation of Sacred Sites (1996). In 1877, the Desert Land Act encouraged and promoted economic development in the arid and semi-arid American West landscapes using irrigation, which dramatically transformed water rights, irrigation systems, and canals to benefit settlers. The goals of these federal legislations were to make all the land usable for cultivation of a resource to add to the U.S. economic development.

Although the BLM was not established until 1946, long after initial settlement, this agency's origins were founded in the acquiring of lands under new U.S. jurisdiction. Shortly after the Revolutionary War, the U.S. government created the Public Land Survey System in 1785 to survey the new contents of U.S. land ownership as to redistribute to Revolutionary War veterans and to sell to European settlers. These efforts were transitioned to the General Land Office in 1812 after the Louisiana Purchase and the Lewis and Clark expedition. This agency

was tasked with overseeing the growing U.S. public domain land; large swaths of which were achieved via negotiations and warring with European countries. This is land that the United States assumed it had rightful ownership over and could take from the Indigenous inhabitants. The U.S. government began allotting this surveyed land to settlers prior to the development of Indigenous reservation systems in 1850. In 1862, after the U.S. had acquired its current continental geographic boundaries, they again backed settlement across its large jurisdiction through the Homestead Act of 1862. By 1934, about 270 million acres transferred from U.S. public domain land to private ownership through the Homestead Act. Settler homesteaders were able to benefit from irrigation systems, diverting water from below ground and river systems to make their land moist enough to grow food for commodity production. The land selected by settler homesteaders were the most desired parcels, largely due to water resources.

Today, the BLM enacts settler governmentality across 10% [247.3 million acres] of the land area of the United States, all of which is in the 12 western states¹⁶. This agency is also tasked with managing the public subsurface mineral resources, which account for 30% of the United States minerals, across all of the states¹⁷. The WHB Program represents 10% (31,594,077 acres), 85% of which are BLM managed lands and has unique managerial guidelines. The remaining 15% are privately owned acres within herd management area boundaries. The boundaries within this program, however, are governed by all the other BLM legislative statutes, creating an intersection of multiple decision-making frameworks.

¹⁶ These 12 western states, however, have much larger proportions of BLM land. Sixty-three percent of Nevada, for instance, is managed by the BLM.

¹⁷ <https://www.blm.gov/about/what-we-manage#:~:text=The%20BLM%20manages%20one%20in,%2C%20arctic%20tundra%2C%20and%20deserts.>

BLM managed lands follow a multiple-use model that allows for multiple resource uses, such as grazing permits, recreation, areas of critical environmental concern, etc (Multiple Use and Sustained Yield Act of 1960). See Figure 10 for a visual of the multiple uses within the Twin Peaks herd management area. The WHB Program has unique managerial guidelines for the BLM as it is the only free-roaming animal species that the BLM is tasked to manage¹⁸. All other wildlife species are governed by the U.S. Fish and Wildlife Service (Pub. L. 92-195). The managerial guidelines for WHB must also coincide with the variety of legislative statutes that govern all other BLM activities.

Federal legislation, as environmental sociologists have long identified, is often outcome of industry capture. This is due to the original purpose of economic growth and prosperity for white settlement. The American Wild Horse Campaign identifies that 80% of forage within herd management areas is allotted to livestock grazing¹⁹. This land, prior to BLM formation, was communally grazed by settlers. Since the Taylor Grazing Act was passed, “grazing privileges have looked like and in many ways functioned like property rights for almost a century” (Skillen 2009:x). Additionally, livestock grazers tend to believe that they have a stronger or more important stakeholder interest than dispersed public, especially public that is located outside of the American West region. Although livestock grazing is legally prioritized on BLM managed lands, agency personnel are also required to support other uses, such as those depicted in Figure 10.

¹⁸ Privately owned livestock are also governed by the BLM. However, these beings are directly managed by ranch operators and managers.

¹⁹ <https://americanwildhorsecampaign.org/media/qa-dangerous-plan-wild-horses-burros#:~:text=Currently%20wild%20horses%20occupy%20just,is%20allocated%20to%20commercial%20livestock>.

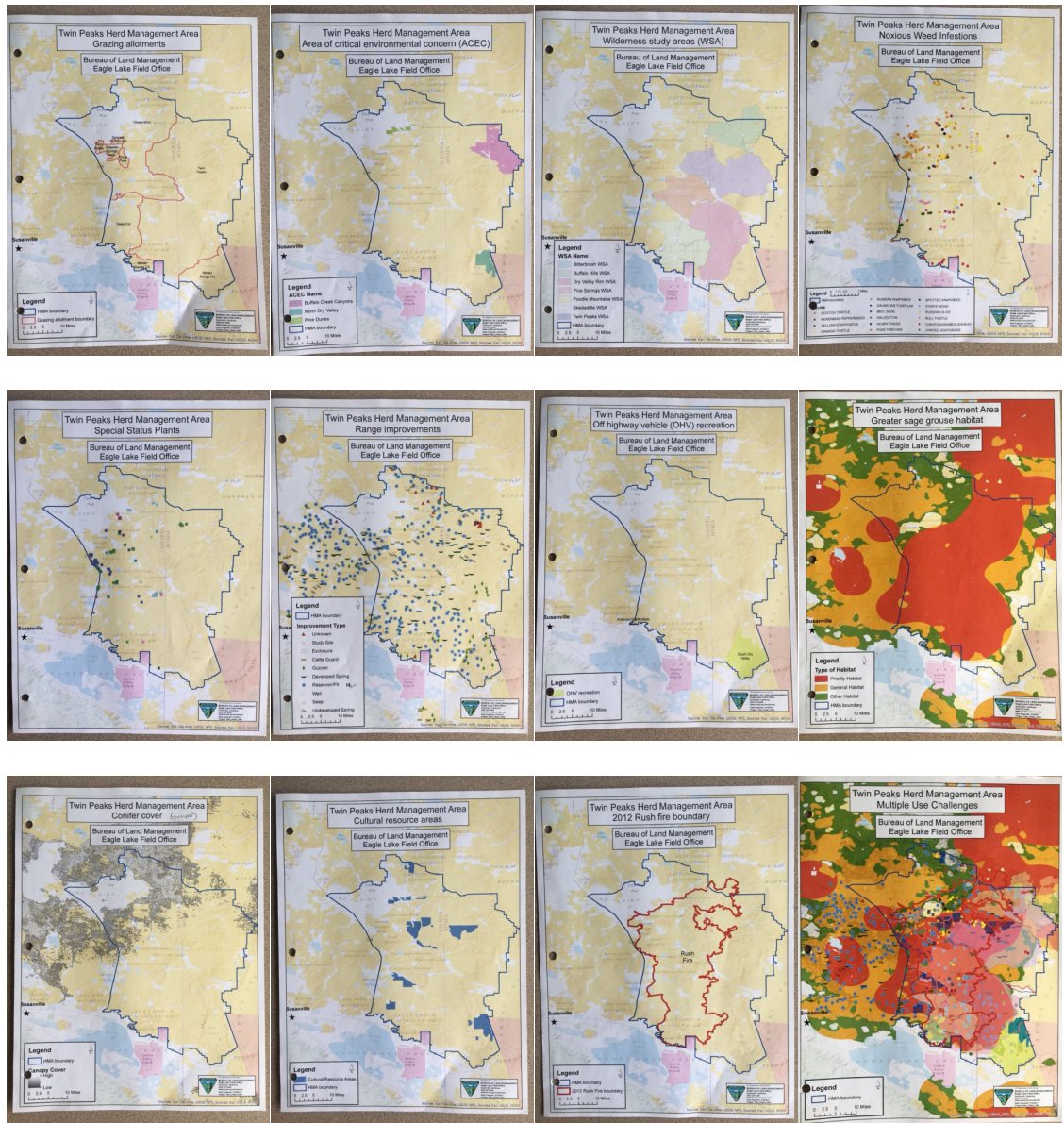


Figure 10: Twin Peaks Herd Management Area multiple-use maps, culminating in the final "Unicorn Poop" map that integrates all of the multiple-uses

According to Culhane’s (1981) interest group theory, those with the most political involvement, highest number of subgroups, closest relations to decision-makers, and most economic power, tend to have the strongest influence over federal land management decisions. This is the outcome of political-economic stakeholder alliances. It is important to note here that

livestock grazing is a heritage value of rural lifeways and has shaped the lives of settlers living in American West rangelands since their ancestors first settled (Huntsinger and Hopkinson 1996).

Although cattle grazing on public lands only represents about 2 percent of meat production in the U.S., a meager economic incentive federally (Ketcham 2020), it has a larger impact in rural American West towns (Taylor, Tanaka, and Kristie 2022). If grazing was abolished on public lands, community members within towns such as Burns, Oregon; Elko, Nevada; Meeker, Colorado; and Rawlins, Wyoming, not to mention the many smaller towns between these, like Adel, Oregon; Eureka, Nevada; Dinosaur, Colorado; and Baggs, Wyoming, are concerned that their communities would experience significant reductions in population and an altered economic system, factors that influence U.S. governmentality in these rural areas. Many ranchers I spoke with are concerned that those who want to eradicate grazing on public lands are forcing rural folks out of the job that they desire and choose.

These rural communities are also the places where BLM offices are located. Ranchers and BLM employees come to know one another, not just through work, but through community and family. Political-economic stakeholder alliances both at the federal and the local levels are capable of shifting the debates and concerns within the agencies for which their relationship exists (Pellizzoni 2010; Holland 2017).

Although economic growth is tied to federal laws that govern public land places, as well as the social relationships in these rural American West towns, these economic growth laws have resulted in negative environmental outcomes. Through public and scientific pressure, the United States has since passed new laws with the aim of rectifying prior poor management, aim to mitigate known environmental impacts, and better incorporate more diverse public interests within federal land management decision-making. The creation of new laws on top of existing

laws is an effort, I argue, to both assume US legal permanence while simultaneously recognizing the ill-fit of prior laws. As described in the Serres and Latour interview,

“We have resolved the Cartesian question: ‘How can we dominate the world?’

Will we know how to resolve the next one: ‘How can we dominate our

domination; how can we master our own mastery?’” (Serres and Latour

1995:172)

The goal of these newly created laws is to “master our own mastery.”

In 1934, due to “injury to the public grazing lands... overgrazing and soil deterioration,” a settler land use practice that factored in the Dust Bowl catastrophe (Holleman 2017a, 2018), the U.S. government enacted the Taylor Grazing Act managed by the Division of Grazing (Pub. L. 73-482:1). This act created a federal regulating system for cattle and sheep grazing on public domain land and authorized the use of grazing in these places. The BLM was created out of the merger between the General Lands Office and the Division of Grazing (later renamed the U.S. Grazing Service).

Many laws have been passed since the creation of the BLM, such as the National Environmental Policy Act (1969) and the Federal Land Management Policy Act (1976). These acts, however, must also align with prior legislation. These laws required more systematic environmental analysis, reporting of mitigation efforts to recognized environmental impacts, requirement to allow for multiple-use management, and public engagement mechanisms. However, when reviewing literature on the environmental review process, economic incentives still weigh heavier in federal land management decision-making (Mascarenhas and Scarce 2004; Beckley 2014; Linke and Jentoft 2016; Adkin et al. 2017; Norgaard 2019; De’Arman 2020; Ketcham 2020).

One way that economic-incentive actors divert influence from other individuals and stakeholder groups is through strategies of agenda-setting and blocking. Legal and economic agenda setting mechanisms are developed and lobbied by powerful constituents who are deeply embedded in federal decisions prior to the formation of station or regional-level project development (Cobb and Ross 1997). In essence, they take place on a different plane than what is offered to the general public (De'Arman 2020). They also were implemented in development of a settler governmentality and continue to structure what is legal and socially desired in these regions.

Culhane's (1981) interest group theory model, where policy and project outcomes are determined by a group's relative influence index, can help to explain the power to agenda set in BLM decisions. This influence index measures access to decision-makers, value preferences, and the total number of subgroups within each represented interest. Therefore, groups with the most involvement, highest number of subgroups, closest relations to decision-makers, and most economic power tend to have the strongest influence over public land management decisions. The rural nature of American West towns offers some insight into the ways that local ranchers have influence in local BLM management and decision-making. This relationship, although occurring at the local, place-based level, also filters up the agency by informing on-the-ground conditions to WHB and BLM decision-makers whose work does not allow for visiting these rangelands. See Chapter two and four for more discussion on the ways that ranchers influence the BLM WHB Program.

One WHB Advocacy group has come to realize the ways in which locals are better able to influence BLM WHB management. Rather than participating in the WHB Advisory Board, an organization that is supposed to represent broad interests meets on a yearly or bi-yearly basis to

discuss WHB Program management and develop suggestions for Congress and the agency, this organization prefers to purchase lands near BLM herd management areas.

“I will be totally honest. The Advisory Board is a sham. It is it has always been a sham... The land trust was a creative way to do that [help wild horses stay wild]. Become the main stakeholder in the area. We have more of a say if the horses get removed. We have more of a decision on what happens to the land and the water so that we can make sure, ensure, that the land is supporting, the land is healthy enough to support the wild horses and the wildlife population.” (WHB Advocate)

This WHB Advocacy organization has taken a similar place-based approach used by rancher economic interests.

Settler Government Bureaucratic Formation and Paradigms

There are a variety of ways in which people aim to influence the management of range equines. However, the organizational formation and processes of the BLM also contribute to structure directives of the WHB Program. In this section, I will outline how the bureaucratic formation and processes of the WHB Program, as nested within the BLM, influence the WHB Program. Within this discussion I present existing paradigms about appropriate federal management which are guided by a settler colonial government logic.

The organizational formation of the BLM is guided by the centralization of decision-making stemming from the federal capital and a multi-level administration apparatus that funnels information and policy recommendations both up and down the agency hierarchy. Bureaucracies, as Max Weber (1978) outlines, are to enforce and act on the rules set by political leaders. The

larger the state and the more that the state wants to extend biopolitical control, the more it is dependent on a bureaucratic base to enact those functions.

The tasks of the BLM are to implement the legislative decisions of the federal government. These decisions include budgetary appropriations and legislation that guides legal management activities. Street-level “bureaucrats attempt to make their agencies indispensable... to those who wield power” (Jenkins 2023:51). They are required to be meanable to the changing natures of federal political power and decisions. For example, the BLM moved their headquarters office from Washington, D.C. to Grand Junction, CO in 2020, and then back again due to U.S. Executive leadership decisions. This severely disrupted the BLM and led to vacancies that the agency is still trying to recover from (Partlow 2021; Streater 2022). The WHB Program, for instance, had many missing headquarters positions. These impacted the flow of information about budgets. There are multiple headquarters positions for which people are either in “acting” temporary roles or have only served in these positions for 1-2 years. Some positions were left vacant for over a year.

When I asked one BLM Headquarters employee about positions that had been vacant, they discussed how challenging it can be to management operations.

It's pretty detrimental. It can be. It's, although it seems to be, quite often the case.

We have a lot of, a lot of empty positions... [When a position stays open for a long time] you lose track of like, like the management program analyst. What was this person doing? The last person who had it, had it for three years, what was she tracking? What was she doing? What has fallen between the cracks that we are not doing anymore? Um, there's been quite a few things that have not been tracked... you don't know what you've lost when that person's not doing it. And if

its budget positions, it's, it's detrimental. When the budget advisor started. She's like, 'we don't have any money. It's all gone.' You know, so it's kind of wait what do we do, we just got to find it. Figure it out. Cause nobody kept it kept up with it. Yea we had money so we spent money. You didn't know how much. We weren't sure. And now that she's there, it's, it's coming back into being under control” (BLM Headquarters).

Vacant positions impact program operations while they are open and long after the positions have been filled as people need to learn their new roles without the predecessor.

Decisions made within the BLM must adhere to federal decisions as they occur within a form of a hierarchical bureaucracy. The Secretary of the Interior is tasked with implementing these federal decisions. As the WFRHBA of 1971 states, “[a]ll wild free-roaming horses and burros are hereby declared to be under the jurisdiction of the Secretary for the purpose of management and protection in accordance with the provisions of this Act” (Pub. L. 92-195:2). Within those federal guidelines, BLM-unique decisions are determined by the Secretary of the Interior.

The Secretary of the Interior, however, provides delegative authority to field, district, and state level decision-making managers within the BLM, who are referred to as authorized officers. Procedure documents that outline appropriate practice at these offices stem from each program’s headquarter office. These outline the tasks for the authorized officer. For example, “[f]orage (vegetation) is one of the essential components of WH&B habitat. The authorized officer should determine whether vegetation provides sustainable forage (and cover) for the animals” (H-4700-1:12). The authorized officer completes this task by assigning out responsibility to those with specialized training related to that task within their office staff like the Secretary of the Interior

does for the larger agency. Those specialists complete the analysis on the required task and the authorized officer reviews and signs the decision documents that the specialists collaboratively write. Although the public can comment on proposed projects that are known to affect the environment, their input is not organized democratically. Rather, the decisions and activities that BLM personnel practice are aligned, to the best of their knowledge, with legislation, agency-level policy, and agency-level culturally approved practices. The BLM, including the WHB Program, has been sued many times and has been found to not follow, in one way or another, guiding legal frameworks. This may not be due to intentionally undermining federal laws, but rather because of nuances within those laws that come to be clarified through litigation cases.

At each level of the bureaucratic organization, there exist one person who signs off on decisions. This is understood as a monocratic bureaucracy. Although there is one person who signs off on decisions, they trust the work of their specialists to inform them on the specific natures of projects that authorized officers may not be specialized in themselves. However, the authorized officer is also the person who receives public input and scrutiny for signed projects. For example, one BLM Authorized Officer I spoke with discussed hate mail they receive relating to WHB management decisions.

I get hate calls like, I mean, I get hate calls all year long. I get hate mail. I've had death threats. The FBI has been involved... That doesn't change my thinking. I still have a job to do. And I still have to follow the law... [During the last gather] I was getting upwards of 35 to 45 calls a day. Most of them people just screaming obscenities... the people that call screaming are from little towns in Pennsylvania and Kentucky and Florida, Georgia, and you know, and they're all, 'leave the horses on the range', 'stop killing horses' and, you know, you're just like, 'we're

not killing horses.’ You know, and, you know, they’re ‘it’s an illegal gather.’ And you know, I mean, it’s just irrational discussion... That’s not how government works. And that’s not how the Wild Horse Act works. That’s not how FLPMA works. You know, we issued a decision we followed the process... there was this one lady who called, who accused me of being a Nazi” (BLM Authorized Officer).

Hate and death threats are not unique for BLM personnel engaged in the WHB Program. I heard from many WHB specialists that they have received hate calls, mail, and death threats from their federally approved work. Please note that hate communication does not stem from only one stakeholder group. However, for the authorized officer quoted above, they only mentioned receiving hate calls from WHB Advocates.

The work of authorized officers is shielded by the bureaucratic- and federal-state because they are seen as indispensable for management, for maintaining administrative unity, and because of the federal government’s dependence on the bureaucracies for their rule and function (Weber 1978). These agencies will also engage in administrative secrecy to “hide knowledge and action from criticism” (Weber 1978:992). For example, WHB death rates post-gather may be higher than the BLM reports. For instance, the BLM only reports the equines that die from gather operations or pre-conditions during the day of the gather. However, I have heard multiple stories about a horse that died from a still birth after the gather operations after the day concluded. Equines that die from transportation or at the holding corrals after their day of gather or weeks following are not included in federal death reports.

United States federal agencies are also guided by managerial paradigms of standardization. This is based on authority, policy, and legal precedent. Weber (1978) outlines these as,

“[p]recision, speed, unambiguity, knowledge of the files, continuity, discretion, unity, strict subordination, reduction of friction and of material and personal costs – these are raised to the optimum point in the strictly bureaucratic administration, and especially in its' monocratic form” (Weber 1978:973).

Optimum management is the goal of US federal bureaucracies. Because of the influence of neoliberalism within the government, optimum management is often situated within business logics that present their form as the best functional model. This includes the goals of efficiency, which is often tied to a cultural value in agency personnel decision-making (Jenkins 2023). As Scott (1998) outlines, governments try to implement a high-modernism, which is a strong belief in the technical and scientific progress, the mastery of nature, rational design of social order, and an infinite move towards progress. However, within the BLM, there is limited scientific information and decisions are made with a high degree of uncertainty. For example, gathering range equines with a helicopter may be the most efficient means to remove equines from the range. However, according to the National Academy of Sciences report on the program, “removals are likely to keep the population at a size that maximizes population growth rate (see Figure 3-2B), which in turn maximizes the number of animals that must be removed and processed through holding facilities” (NRC 2013:94). Science itself does not make managerial decisions; humans do. Therefore, decision-makers, although well-meaning and use what science is available to them, go beyond science to make decisions (Richard Norgaard, personal

communication). Efforts towards standardization, optimum management, and efficiency are part of the structure and culture of federal agencies that then influence personnel decision-making.

These perspectives of the state are not inherent nor necessary for people to function in communal and respectful interactions with their surrounding environments. Indigenous peoples have been communicating this for centuries. State bureaucratic paradigms, as discussed above, socialize people into thinking that bureaucratic logic and processes are the natural thing to do (Senellart 2007). This is the indirect way of making people do and follow the bureaucratic order. Although it is guided by a neoliberal and formulaic culture, it argues that it is not culturally biased. However, examining the history of the WHB Program, for instance, communicates the settler colonial culture that underlies BLM WHB management bureaucratic cultural logics. Scott (1998) argues that state-initiated social engineering that leads to such environmental disasters are based on the simplification of environmental information that transforms the way in which people think about places, such as abstracting information into comparison across diverse areas such as the clear BLM Problematic messaging. It also involves the high-modernist ideology and an authoritarian rule to its implementation. As well as structures that make implementing any structural change challenging. Abstracting and utilitarian logic allows “the state to impose that logic on the very reality that we observe” (Scott 1998:14). Therefore, it becomes difficult to see the ecological impact of range equines, especially in the most arid regions that they roam, while also not problematizing these species.

I argue that we should be problematizing the settler colonial informed equine management in these semi-arid places and that force equines to remain within them. Presenting new knowledge and a diversity of approaches is difficult within large bureaucracies because of their efforts towards standardization and consistency, even if there are people within these

agencies that push for such change (Jenkins 2023). For instance, US bureaucratic agencies accept new science and paradigms slowly because they must be implemented within existing policy and legal frameworks (Richard Norgaard, personal communication). As Jenkins argues "... Western-style land management, governed by economic rationality and state bureaucracies, may not result in improved environments" (2023:234). I argue that we need to reconsider who and what we are problematizing.

Conclusion

One of the most significant longstanding injustices in the history of the United States is the theft of land from Indian tribes during the better part of the first two centuries of this nation's existence. The taking of native land reflects a wide gulf between our idealistic claims to be a just nation and the truth buried in our nation's history (Washburn 2022).

Settler colonization has created unique government ruling apparatuses over human and non-human persons. This results in the Eastern centralized government over the beings and landscapes in the American West. This form of government and control is a recent phenomenon that has never happened in this continent. The U.S. government engages in biopower over Indigenous peoples as well as range equines, which is enforced through federal agencies, such as the BLM.

Information flows up and down the BLM, but those who have been allowed to live and own property near herd management areas are better able to communicate resource concerns and needs, which informs the higher echelons of the BLM. This affects perceptions and paradigms about range equine management, such as them being a problem species. Additionally neoliberal

and political agendas guide BLM management goals and operations. Economic incentives guide BLM bureaucratic logics towards standardization across diverse rangelands and through efficient management. Unfortunately, for the WHB Program, efficiency does lead to effective outcomes as they relate to ecological degradation, equine population growth, and the growing costs of off range holding.

CHAPTER 4: PROPRIETED BOUNDARIES AND SETTLER LAND-USE LOGICS

While on a range tour with a BLM WHB Specialist, we looked out over the vista pictured below in Figure 11 and discussed the private property that allows public through access. The property is visible in the riparian drainage to the right. Heavy wind breaks the recording.

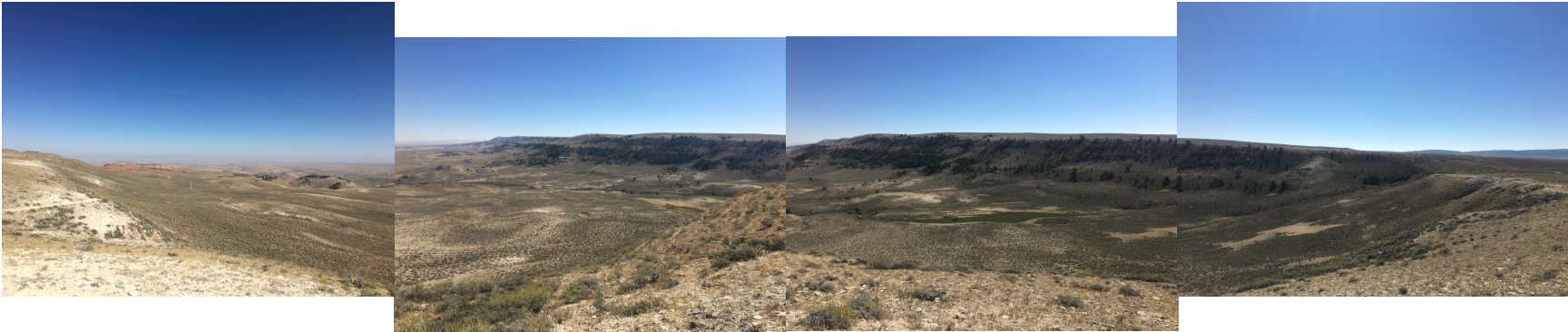


Figure 11: Multi-shot landscapes of herd management area valley from ridge

WHB Specialist: [Reading a sign] Public access through the private property, next three quarters of a mile.

Kindra: So this is a private section right here.

WHB Specialist: Yep. I thought it was gonna be [can't understand through wind]

Kindra: But yeah, that is riparian

WHB Specialist: Yep, he's just in there. [Can't understand through wind, then laugh]. Water. You can see some, probably the head of the spring up there.

Kindra: Oh yea.

WHB Specialist: Where the trees are.

Kindra: Is that that aspen grove, probably is right in there?

WHB Specialist: Yea, there is one there and one over in that way that we're seeing that's the other trees you're seeing [pause walking].

They're just slightly over grazed in this.

Kindra: Oh yeah. It's dried up, you know?

WHB Specialist: Yeah.

Kindra: I mean it's really dried out.

WHB Specialist: You can see this is like sagebrush, you don't even see any residual.

Kindra: No, not at all.

WHB Specialist: This is the kind of stuff that gives everything a bad name. It's this kind of crazy. And you come across that, if people see this, this is private land.

Kindra: Because they got the spring.

WHB Specialist: Yeah, as always, almost, you know not always 100%, but that said yes, all the waters are gonna be private property.

They are the first came out here [can't understand, pause] I guess I just thought my mind, everybody in this area, you know kind of needs a gather. But you would see a lot more horses. There is hardly any here.

The above interview transcript is from a range tour to find horses, which was difficult as there were no horses in this alluvial fan (area of deposited loose sediment) and large expansive valley. However, we did come across private property signs, public through-way, fences, and a privately-owned riparian section. As the BLM Personnel mentioned, the majority of the riparian springs in the semi-arid rangelands where range equines are managed are privately owned. This creates both concerns for water access as well as responsibilities for private landowners. In the following section, I will outline the theoretical orientation around settler colonial land-use logic and its related construction of legalized property boundaries. In my fieldwork, interviews, and textual analysis, I came across two distinct ways that this settler colonial logic informs the WHB Program and impacts Indigenous sovereignty. The first is the prioritization of economic market product that delegitimizes range equine presence. The second is the propertied boundaries that accord more influence from private livestock ranch operations while also impeding upon Indigenous and Tribal sovereignty.

The settler colonial land-use logic was forcibly implemented by the U.S. Government to benefit European settler colonists. This resulted in privately held land, federally owned land, and small portions of land designated for some Tribes and Nations in the form of reservations and, later, Indigenous “trust land”. This settler colonial land-use logic still permeates through the maintenance of these strict propertied boundaries as well as the legitimation and delegitimation of beings on BLM managed lands, which acts as a major justification for BLM’s current WHB management approach.

I found that settler colonial land-use logics think of and treat properties as distinct but operate under similar ruling relations. In practice, agentic range equines migrate across propertied boundaries. The United States government maintains settler colonial power in

defining propertied systems. Federal and private properties impact reservation and trust land in ways that Indigenous Nations do not have guaranteed legal determination to handle independently. This finding demonstrates contemporary ways in which settler colonial land-use logics through propertied boundaries continue to impact Indigenous sovereignty.

Settler Colonial Land-Use Logic and Resultant Propertied Boundaries

Settler colonialism is directly related to colonizer's gaining material resources in a new place through the dispossession of current residents. Prior to the act of colonization, "colonizers must believe that empire is their right, or at least manifest sufficient support for the idea from elites and the critical masses" (Redbird and Homaniuk 2023). The perspective of having an inherent right to a place already inhabited by sovereign Indigenous residents is a worldview perception held by white settlers historically and today (Moreton-Robinson 2015b). In settler colonial countries, white political power maintains an "objective authority" trope that is tied to both a racialized and a land-use logic (Nicol 2004). The two, racism and belief in superior land-use knowledge are intricately connected through settler colonialism (Bhandar 2018; McKay et al. 2020). In this section, I will outline the settler colonial land-use logic that is used by settlers to justify white sovereignty in the place of Indigenous sovereignty. The settler colonial land-use logic and its resultant legalization of propertied boundaries inform the BLM's WHB Program, creating cultural justifications for equine removals and how the BLM are required to manage lands under their care.

The construction of propertied boundaries, between federal, private, and reservation lands, is premised on white superiority and land-use logic of agricultural development. This use is for the development of crop or animal resources for international markets tied to capital

accumulation (Holleman 2017b, 2018; Bhandar 2018). John Locke, an English philosopher was influential to European founders of the United States, promoting that nature should be cultivated as a gift from God, or else it is laid to waste (Locke 1978). Appropriate cultivation, to European settlers, was indicated by the production of resources for consumption beyond the individual, family, or community. Such production was culturally valued when it entered international trade. This differs from Indigenous land-use logics and practices tied to subsistence, community sharing, only taking what you need, inter-tribal trade, and relationality with the places and beings you interact with and consume. Darren Parry, a Northwestern Shoshone Tribal member and author communicates that “our people had no concept of personal property; taking care of our neighbors and their needs was a part of life” (Parry 2019:3). Because the land-use logics of Indigenous people differed from settler colonists and whose practices did not benefit colonist capital accumulation, settlers racialized and degraded Indigenous land-use logics, practices that have been interwoven with the ecologies that they co-created.

Settler governmentality, power, and military prowess embedded agricultural market production in settler created property law. The Dawes Act of 1887, for instance, allotted reservation lands into Euro-family-style of owned parcels for which Indigenous peoples were required to farm in a Eurocentric way. If they did not “use” these lands according to settler colonial land-use logics, then they were open for settlers (Tsosie 2001). These laws and legal history are tied to cultural thought about rights and legitimate use of lands.

The social construction of legalized property stems from western Europe. Private property ownership emerged from a transition in social-environmental relations guided by a new bourgeoisie class in Britain that enclosed prior common or shared land by tenants (Marx 1976). This occurred over a few hundred years via the creation of laws and military genocidal activity

that resulted in the opening of land for large-scale agriculture in Britain, such as sheep grazing. Those once dependent on subsistence living within their common area, were forced into wage labor in urban areas. This is a result of emerging capitalism out of the bureaucratized and legalized bourgeoisie British state. During British colonial rule in North America, we saw a similar creation of private property rights.

Nicholas Blomley, a geographer who studies property, argues that “violence plays an integral role in the legitimation, foundation, and operation of a regime of private property” (Blomley 2003:121). In the United States, violence is central to colonial settlement, but has been rationalized by logics such as manifest destiny, God’s providence, and settler’s ability to engage in a more productive land-use. The settler state rationalizes and verifies this violence through pictorial and survey maps, practices of documentation, sale, “and the sequestration and regulation of particular plots of land as protected or ‘public’” (Blomley 2003; Rifkin 2013:327). Surveys and maps are used for settler colonial conquest through the redefining and renaming of lands, places, waters, species, etc. (Vázquez 2011a). Blomley argues, that “the survey served as a form of organized forgetting” (Blomley 2003:131). The Public Land Survey System, as discussed in Chapter 2, acted as one of the settler state’s catalysts for controlling and renaming European settled lands in North America.

Private property rights are premised on exclusive possession of the owner (Merrill 1998). Property acts both as a thing, physically, but also as a right, legally (Macpherson 1978). This involves distinct boundaries between separately owned territories. Creation of properties is determined through abstract processes of land titling that were new to colonized locales (Bhandar 2018). United States court interpretations of Indian treaty rights have been inconsistent and abstract to benefit non-Indians (Tsosie 2001). Ownership and possession of space is

determined by a physical text, a title (Rose 1985). This is a symbolic and legalized form of ownership that was used by settler colonialists to create a justification for their right to Indigenous spaces. English language and text have been used to dispossess Indigenous peoples of lands and waters they have engaged with since time immemorial (Nichols 2020).

In her theorization on private property, Moreton-Robinson (2007) clarifies that “possessive investment in patriarchal white sovereignty is enhanced through private property ownership” (2007:95). White male settler citizens were the only people ubiquitously allowed to own private property for hundreds of years in present day United States (Copeland 2013). Within the regions that the WHB Program operates, non-white ownership was prohibited or discriminatorily not financed (Casey 2021). Individual and group discrimination lending allegations and claims are still being filed.

Macpherson (1962) observed that the state was originally formed to secure private property by protecting that private property via force from outsiders and protecting that private property via laws from insiders. This resulted in a tight coupling of private property rights and racism legalized by the settler state. Upper class whites, for instance, held

“a property logic in which subjectivity, placemaking, and political belonging turn on the exertion of a right to untrammelled ownership and in which that process of manufacturing legitimacy for non-Native occupation appears as a self-evident, unquestionable” (Rifkin 2013:325).

Settler landowners see themselves as rightful and natural heirs to privatized land, for which they are allotted much decision-making authority. Because private lands and water rights in the Great Basin and Intermountain West regions are often passed down generationally, or sold to those who can afford ranch lands,

“whiteness becomes a more abstract, intangible form of property that affords its owners economic benefits as well as social and cultural forms of capital... As such, whiteness continues to operate as a form of currency across generations” (Bhandar 2018:177).

Whiteness was an original requirement for land ownership and continues to operate as a meaningful marker of those who possess property today, especially within the regions that the WHB Program operates.

In addition to the creation of private lands, for which white male settlers could take at will, the settler United States created two other legalized jurisdictional spaces, federal and reservation lands. These three unique propertied systems have been reified structurally and culturally as distinct. Structurally, this involves unique legal ruling relations within the land jurisdiction. Culturally, this affects the way people come to think about these spaces as distinct and their belongingness within them. Propertied boundaries transform social-ecological systems by creating strict boundaries that severely limit Indigenous mobility and access to places and resources of importance, as well as caretaking of those places.

Although there are 576 (registered to the U.S.) Indigenous Nations, and hundreds more that are unregistered, there are only 325 reservations. Through violence, white possessive ownership, legalization of propertied systems, etc., 42.1% of Tribes have no federally- or state-recognized tribal land base. The land base that remaining Tribes have is only 2.6% of the estimated historical area, which, on average, is about 150 miles from their ancestral areas and are located in areas most impacted by climate change today (Farrell et al. 2021).

The United States federal government symbolically recognizes Indigenous sovereignty over current minimal allocated territory (U.S. President Clinton 2000:1, Executive Order 13175). However, the United States government still serves as a trustee for reservation lands and resources (Tsosie 2001; Bacon and Norton 2019). Tribal sovereignty and Indigenous sovereignty are two different things, the former pertaining to settler state bestowed authority over limited jurisdiction, and the later pertaining to autonomy and self-determination regardless of the settler state. As clarified by the Indigenous Environmental Network, Indigenous sovereignty

“... arises from Indigenous Traditional Knowledge, belonging to each Indigenous nation, tribe, first nation, community, etc. It consists of spiritual ways, culture, language, social and legal systems, political structures, and inherent relationships with lands, waters and all upon them. Indigenous sovereignty exists regardless of what the nation-state does or does not do. It continues as long as the People that are a part of it continue” (Indigenous Environmental Network 2020).

Although the United States federal government only recognizes Tribal sovereignty, Indigenous sovereignty still exists within and outside of reservation or Tribal trust lands.

Indigenous people within these newly social constructed boundaries were legally removed through legislation such as the Indian Removal Act (1830). Indigenous resilience from British and U.S. military genocidal acts led the United States government to allocate least desired land to Indigenous peoples as reservations. This was legalized through the Indian Appropriations Act (1850). Reservations were overseen by the U.S. Bureau of Indian Affairs agency, an agency guided by settler state interests (Bacon and Norton 2019). This created distinct bounds between settler and Indigenous places of residence. However, it should be noted that many Indigenous people do not live on reservations and some settlers do.

Propertied boundaries continue to be made apparent even within federally managed land today. Federal land includes that which is governed by the U.S. and managed by a federal or other municipal agency. This includes the National Park Service, Forest Service, Bureau of Land Management, military, state, county, city, etc. It is important to note that federal, like all other land, is in contested status, as it was taken from Indigenous peoples (Keller and Turek 1999; Catton 2016; Norgaard 2019). Long and Lake (2018) clarify, “dozens of tribes have long-standing relationships to ancestral lands that are presently managed by federal public land agencies” (2018:1). However, the settler United States government has yet to conceptualize federal or state land as that which is or once was part of Indigenous livelihood. Rather, the state understands federal land as “public”, with enforced laws relating to visiting and utilizing cultural stuffs or resources. People, for instance, are prohibited from living in these places.

The discursive strategy of labeling federal lands as “public” creates the assumption among U.S. citizens of equal access and decision-making of public lands. However, public lands are governed and managed by state agencies that operate based on interpretation of rules (code of federal regulations) and decisions from federal elected decision-makers (De’Arman 2020). These rules and decisions include extraction laws established during early U.S. state formation and settler expansion to the American West, laws that were guided by the logic of land-use for profit motive and international trade.

Settler Colonial Land-Use Logic in the WHB Program

Agricultural development related to creating national wealth is well situated within laws that govern livestock grazing on federally managed lands. Livestock grazing is viewed by many as in conflict with range equine grazing within the places where both are managed. During interviews

and fieldwork, I came across multiple instances where people justified livestock prioritization on federally managed lands through the settler colonial land-use logic. The viewpoint that there is competition for scarce resources between two populations the federal government is legally required to manage is used to perpetuate settler colonial land-use discourse that prioritizes cattle over range equines. In this section, I will first describe how there is some uncertainty differentiating the ecological impacts between livestock and equines. Then I will discuss the three ways I witnessed the settler colonial land-use logic that prioritizes livestock grazing through the description of how horses and cattle graze differently, how horses and cattle are managed differently, and that they afford different economic productivity. In multiple instances, these three justifications were communicated in tandem.

Across the two dominant narratives, Problematic and Rights, there are arguments about the varied impacts to vegetation and riparian areas between livestock and equine use. “There's always this conversation. You know, it's cows that are doing it or if you talk to the other group, it's the horses that are doing it” (Local Partner). It is challenging to tease out how equines and cattle impact rangelands differently. One BLM WHB Specialist discussed this within a herd management area they managed.

“In a herd management area where you got horses, wildlife and livestock who's really doing it [grazing utilization]? You really don't know... You turn cattle out in typically in this country in May... Now livestock come off in October/November we'll have plants that hasn't grown for weeks. You still really don't know” unless you physically observe them (BLM WHB Specialist).

Those who work in partner agencies, such as the Nevada Department of Wildlife also recognize similar challenges.

“Ultimately, there are too many wild horses and burros on the landscape and we are seeing the negative impacts that they are creating. It is a little bit challenging to tease apart some of the impacts on rangelands and riparian areas when you have both livestock and horses in the same areas. It can be challenging to say, well, it's wild horses and burros that are causing these issues or well, no there's cattle here too. So they may be also impacting, you know, these riparian areas or these rangelands. So it can get a little challenging to tease apart” (NDOW Personnel).

In one location, a local partner agency hired a Natural Resource consultation firm to research the varied impacts between cattle and horse forage utilization within a herd management area. They measured forage clippings, used trail cameras photos, and on the ground observations “before the cattle enter an area, after they leave the area and once again at the end of the season to quantify how much the cattle influence utilization in the given areas” (Osborn and McCollum-Parrott 2021:2).



Figure 12: Image of exclusion fence with trail camera in herd management area, 2022

See Figure 12 for an image of an exclusion study area with a trail camera.

They found that within this herd management area between April and November, when cattle are allowed to graze, horses account for 80% of the ungulate species, cattle 14%, and wildlife 6%. Horses, therefore, tend to have a much larger impact than cattle did, in part due to larger population size (Osborn and McCollum-Parrott 2021). There have been multiple range articles that identify equine impacts to wildlife, forage, and riparian areas (Beever and Brussard

2000; Beever and Herrick 2006; Nimmo and Miller 2007 for a review; Boyd, Davies, and Collins 2017; Eldridge, Ding, and Travers 2020). These findings identify range equines as causing overgrazing and deterioration of springs.

Another example comes from a Ranch Stakeholder who has observed horse impacts in a semi-arid range in Nevada where cattle did not graze. These impacts were made worse because ranchers were not involved in water infrastructure, as they typically are in places where cattle roam.

“And this isn't cow versus horse. That was a complete livestock free area. There were no cows in that area. There's nothing but horse use there. And there has been for over a decade and that's why the horses are in such big numbers. And that's also why the water supply is so limited because there's nobody out there taking care of that infrastructure.” (Ranch Stakeholder)

However, in other locations, cattle have been witnessed as more destructive forces ecologically.

After implementing a research trail camera on a riparian area, one WHB Specialist found that “livestock tended to graze and loaf. Horses, horses kind of came, came, watered, briefly utilized, and left. And wildlife for the most part were traveling through.” (BLM WHB Specialist). Pronghorn (*Antilocapra americana*) and mule deer (*Odocoileus hemionus*) both engage in spatial avoidance when horses activity at Great Basin water sources is high (Hall et al. 2018). The effects of livestock grazing on ecosystems are contingent both on the environmental conditions at the site and the grazing patterns, including frequency, intensity, and duration (Fleischner 1994; Briske et al. 2011; Swette and Lambin 2021; Kauffman et al. 2022). Of course, much of this variation can be due to population numbers of livestock versus population numbers of equines, precipitation, climate, soil structure, fire disturbance, etc. unique to these different research sites. However, what is important to note here is even though both ungulates have

ecological impacts, range equines are unmanaged populations. Because cattle grazing can be managed through stocking rate standards, grazing permit conditions, etc. their management can have negative, neutral, or positive impacts on ecological conditions (Davies and Boyd 2020). Horse gather removals are recommended, in large part, because it is one of the few management strategies and is already socially organized through contract crews. Depending on politics, court cases, and budgets, helicopter gathers may not be an available management option.

During a High Country News recorded interview with Jason Baldes who is an Eastern Shoshone Tribal member, the Secretary of the Intertribal Buffalo Council, the National Wildlife Federation's Tribal Buffalo Coordinator, and the Eastern Shoshone Tribal Buffalo Representative, adds an Indigenous social-historical understanding of grazing in the American West.

“I’m not saying eliminate cattle grazing altogether, but there are places where it shouldn’t be happening.’ He sprinted through the history of the Wind River Reservation, beginning with the methodical slaughter of buffalo in the mid-19th century, followed by the sale of the most valuable — water-rich — tribal lands to private buyers. ‘This notion of taming and domesticating and fencing in, fencing out, plowing up, paving over — is the notion of progress. These undermine the philosophical understanding that Native people had about the interconnectedness of all living beings, about what our role is as stewards.’ It’s from that perspective that he said, with a trace of indignation, ‘Cows are invasive species. Just don’t call them that, because ‘cattle is king’ in Wyoming’” (Lezak 2021).

When settlers debate on the ecological impacts of introduced endemic grazers, they miss the historical, relational, and migratory nature of Indigenous grazers that had been nearly exterminated by settler colonialism and colonist's land-use logics. Throughout my fieldwork interviews with those who ascribe to the Feral Horse and Burro Problematic Narrative, cattle were almost never referred to as "invasive" (see above NDOW quote for the one exception to this). Whereas equine populations are frequently referred to as "invasive" or "introduced". This discursive choice is a selective labeling tactic to delegitimize equine presence while simultaneously legitimize livestock presence.

I witnessed settler colonial land-use justifications that prioritize cattle grazing in rangelands that are argued to be unable to sustain large horse populations because of grazing and management differences. While hugging a rock wall in 98 degree heat watching a BLM contracted equine gather/roundup operation, there was a CBS news crew that came to film the day's event and interview BLM employees, primarily public affairs officers. During one interview, they asked if "cattle grazed here" in the herd management area. The staff member said, "yes." The temporary holding corral site was located on a private plot within the herd management area for which there were visible cattle. See Figure 13 for a visual of the private land location. The newsperson then asked, "do cattle impact sustainability of the horses?" The BLM staff member said "yes, because they graze on similar forage, but the determining factor [for sustainability] is water." Then, the news asked, "if there weren't cattle, could you have horses?" The BLM staff stumbled for a second, and then said, "the two animals graze differently." The assistant field manager, acting as the Incident Commander then stepped in, "each species receives an AUM [Animal Unit Month] that comes and grazes here." Meaning, that the number of horses and the number of cattle is determined within the cow-calf pair model

of accounting populations and forage. In this way, the agency is engaging in a scientific management formulation to determine how many livestock and equine animals can be supported within a set acreage. BLM personnel are hesitant to communicate how many cows are actually out on the range. In most herd management areas, cows are more populated.



Figure 13: Private land in a herd management area with a holding corral for WHB gather operations

Cattle permittee use is determined by Animal Unit Month (AUM), a scientific management formulation to determine how many livestock animals can be supported within a set acreage. The available forage for this method is determined by a “take half, leave half” method based on existing vegetation (Stam, Scasta, and Thacker 2018). Although there are agreed upon managerial methods to determine livestock rates, which may differ by plot, the method for defining half of the vegetation available for consumption is not supported by scientific data. Rather, this comes from an untested settler land-use logic that even in semi-arid landscapes half of their vegetation can be removed during grazing. The BLM may also be underestimating forage consumption rates for each AUM because of increase in average cow size over the past few decades (Carter 2016).

This basis for managing livestock and other grazers differs in practice. Livestock may use more or less than the managed AUM allows them. For example, as noted across multiple WHB

Program Environmental Assessments, BLM permittee ranchers are unable to use all their federal land permits due to the limited available vegetation available in those permitted plots. Ranchers themselves restrict their cattle consumption in these places due to inadequate forage availability. Additionally, cattle have been reported outside of their designated ranges, and so the lack of grazing permit enforcement may lead to increased use. Additionally, permittees can participate in a cooperative monitoring program with the BLM where they collaborate and exchange information regarding livestock management (MOU WO 200-2017-07). Cooperative monitoring data may also be used to adjust AUM stocking rates.

The AUM cow-calf pair measurement is used to compare other grazers on federal lands, including, in the case listed above, equines and wildlife. Livestock, equines, and wildlife, although are different ungulates and graze differently, consuming different vegetation and in different patterns, are allotted a certain grazing percentage based on anticipated or observed population numbers. These numbers are equated to the consumption of the cow-calf pair. According to the American Wild Horse Campaign, the BLM allocates 80% of herd management area forage to cattle. This number I have found differed amongst different herd management areas, but it is important to note that livestock tend to be allotted more than half of the available vegetation.

Although there are debates between ecological impacts, nativity, and appropriate stocking rates, WHB stakeholder groups representing both the Problematic and some within the Rights Narratives argue that equine populations are too large and need to be better managed regardless of cattle presence.

“You know, the [Rights] narrative was like we'll get rid of all the cattle and sheep on the landscape, get rid of all the livestock and you'd be fine. You can have them

roam, like, well, that's not true, because of the way [horses] graze, because of their forbs selection, their forage selection, because of their hoof action, because of water resources. That wouldn't be the case.” (Ranch Stakeholder)

Another example is presented by a WHB Advocate who argues that horses still need to be managed because of their population growth both on and off-range.

“So if we don't figure out how to get our horses to a point where they are sustainably managed on public lands, we will lose them, 100 percent. I am 100 percent sure. In probably not that many years, Congress is going to repeal [the WFRHBA] because they will have to [due to large off-range population rates] and so arguing to leave them alone and just slowly do fertility control so their numbers continued to swell indefinitely while their resources dwindle is not an option. We just disagree that the BLM is using the drought as an excuse or whatever else whatnot, they say all kinds of things. ‘This is all an effort to get rid of horses on our public lands.’ I'm like, this is not going to get rid of them. But if we don't do anything that will get rid of them for sure.” (WHB Advocate)

Framing equine management as being necessary at a more frequent rate is argued as necessary regardless of other livestock users. This is a discursive act to correct those who follow the strict Rights Narrative.

Equines are argued by many involved in the WHB Program to be more impactful than livestock grazing. One of the grazing differences is the ability for horses to pull up plant roots as they use both upper and lower parts of the jaw to grip a plant, whereas cattle wrap their tongue around grass and are unable to get to the roots. Livestock are understood as being managed, whereas range equines are not understood as being managed. Horses are also argued to be more

impactful than livestock because they are not managed as intensively, at least in most of the areas that they roam²⁰. For example, cows can be moved from one allotment to another. Livestock may only be out on BLM managed lands for a few months, or less than a year. However, as one Local Partner clarifies this difference, “the cows leave there, horses never leave” (Local Partner).

Rob Sharp, a WHB Specialist and WHB State Lead for Oregon communicated in a 2022 Oregon Public Broadcasting news interview that although livestock make up a much larger proportion of forage allocation, they can be managed in ways that range equines are not currently²¹.

“20 to 30% of that forage allocation goes to our target population of wild horses or burros within the state. The remainder of which goes to permitted domestic livestock as well as forage allocations for wildlife habitat. What's important, important to point out though, is that stocking rate, that's what we call it in our industry, of wild horses and burros is less than, you know, that domestic livestock grazing. Just because of the nature of that grazing impact on years like we've had, drought years, we don't have the ability to make the call in the spring that hey, we don't have enough rainfall to grow grass and fill waterholes to provide for all the forage allocations when it comes to wild horse and burro. That's a direct contrast to how we manage permitted livestock grazing. We can make those spur of the

²⁰ Horses and burros in herd management areas that maintain limited population growth due to fertility control treatments are seen as “well managed”. This practice involves significant time, attention to detailed differences in equines, knowing equines by name, tracking pairs, offspring, treatments, etc.

²¹ <https://www.opb.org/article/2022/08/10/oregon-wild-horses-birth-control-population/>

moment decisions in terms of how many animals were put on the range and it's completely variable, year in and year out” (BLM WHB Specialist)²²

With livestock forage allocations, these can be changed due to changing conditions. The only ways to effectively change equine populations is to gather them. This is most efficiently done with helicopter contracted specialists. There are a few herd management areas that are effectively managed with fertility control immunocontraception vaccines. However, to effectively do so requires yearly intensive human input. Regardless, the BLM is unable to manage equines to their desired and allocated population numbers in most herd management areas through the helicopter gather method. This leaves many people I interviewed to feel as though equines are not being managed. “But as with any species, if you think about it this way, every other species is managed” (NDOW). A recent article argues to manage range equines like other wildlife through kill permits (Hennig et al. 2023).

Aside from grazing and management variation, the land-use logic of productivity is used to justify support for livestock ranching over equine management. While attending a cattlemen’s event, Global AgriTrends, a global agricultural trade market intelligence and analysis company, presented on the relationship that U.S. cattle producers have with international demand. The cattle meat industry in the United States, for instance, is sustained through global trade and follows closely with global GDP. Beef consumption is marketed internationally as a commodity for countries increasing in wealth. See Figure 14 for pictures of the presentation slideshow. This analysis and presentation highlight the land-use logic of cattle agricultural productivity for international trade. A presentation like this does more than just communicate international beef

²² <https://www.opb.org/article/2022/08/09/bureau-of-land-management-wants-to-test-new-ways-to-manage-wild-horse-population/>

trade information. It also informs those who are watching the presentation that what they produce matters to people all over the globe. They are feeding people internationally.

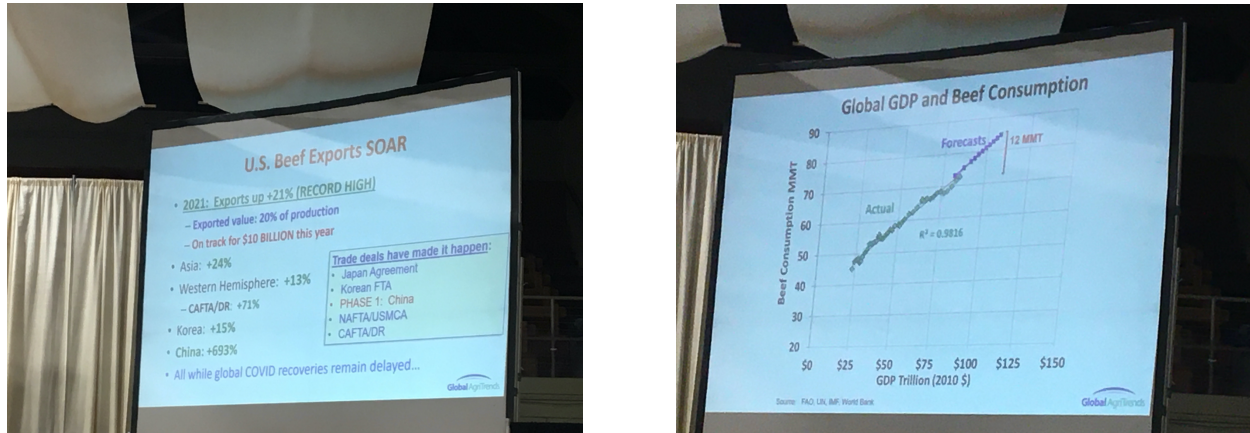


Figure 14: Global AgriTrends presentation at a cattlemen's event outlining market viability of cattle meat through export and alignment with global GDP

Not only is there a presented international need for livestock production, but locally, researchers have found an economic impact from cattle grazing on federally managed lands in Oregon, Idaho, and Wyoming (Taylor et al. 2022). In a National Cattlemen's Beef Association funded project, Taylor and co-authors argue that the direct impacts to loss of federal lands for cattle grazing would decrease ranching employment and pay. This would have an even greater negative impact to local secondary economies (Taylor et al. 2022). This, they argue, would be most impactful to the rural parts of Western states where most of the grazing occurs and where non-ranching jobs are limited. Livestock ranching on federal lands is economically important for rural communities in the American West. The material importance of ranchers on federally managed lands is communicated as a benefit to locals, to the nation, and internationally. As one ranch stakeholder explained, "... my real area of passion is working with those who, you know, it's the FFA Creed - who feed, and clothe, and house the world" (Ranch Stakeholder). To this

interviewee, ranchers on federally managed lands are important because they are contributing to meeting human's basic needs locally, across the United States, and internationally.

The ranching industry within BLM managed rangelands, especially those within semi-arid rangelands that also house range equines, however, are struggling to sustain market consumption as promoted and guaranteed by propertied land use-logic. Nationally, cattle inventory is decreasing due to drought (Matlock 2022). Many folks in Nevada, where half of BLM's managed horses and burros roam, are selling off their cows (fully grown female cow who has had offspring) and heifers (fully grown female cow without an offspring) to slaughter at growing rates²³. Folks that normally run a cow-calf operation, heifer production, etc. that normally do not sell to slaughter are having to sell out their cows to slaughter.

During a range tour with a ranch stakeholder, they shared some of the personal challenges related to maintaining ranch operations in a drying state.

“... we estimate we probably lost 45 to 50 calves in December and January [from abortions]. So it's just been a wreck, it's biblical. We got Mormon crickets. We got horses. We got fire. We got abortions. At some point you just keep hanging on. It'll, I laugh, I felt sad, one of the biggest mistakes I ever made was leaving that [job] to come back home [laugh]. At least I had a paycheck [laugh]. And it was helping pay the bills and the rent. [My wife] went back to work. So it was me and her and one hired guy, we did it all. And she went back to school so she's working in school again, teaching in the evening full time... When you're running 500 cows and you send 50 of them [to slaughter], it bites and economically takes a bite out of ya we're gonna send some more [to slaughter]. And those all are

²³ <https://thisisreno.com/2023/01/cattlemens-update-crisscrosses-nevada/>

gonna get their heads cut off there. They're in a Happy Meal somewhere.” (Ranch Stakeholder)

When referring to cows from their cow-calf operation going to a Happy Meal, it appeared to me as derogatory, as if the cows in their care were not allowed their full life and potential. This is due to the lack of forage and water to sustain them. They did not want to sell their cows but felt as though they had to economically to sustain themselves. This is the chilling reality of the ever-changing American West rangeland ecosystems.

Equines, in addition to prior poor management and climate change, present a real threat to those who run livestock within herd management areas. “I mean, there's too many wild horses out there for the cattle, land was getting overrun and stuff” (Ranch Stakeholder). When I attended a cattlemen’s event, those I sat with for lunch,

“were all disgruntled about these equine populations and the lack of management. Horses tend to hang out at waterholes. The [county] president said in the [National Forest] they are consuming forage in one of their member’s permitted cattle grazing areas. Which was brought to them as a concern.” (Cattlemen’s Event).

Some ranchers have not even been able to use their BLM allotments within herd management areas because of horse impacts. Climate change and prior poor management are also factors that impact forage available to run cattle within allotments.

“My family historically has had a lot of involvement with this program and with horses. They said, ‘hey, these horses are starting to get out of control. They're everywhere. They're on the neighbors they're on us. The populations are really exploding.’ And then the late 80s, early 90s is when we really realized we were

having a significant problem we saw huge [horse] die off. I mean, we, we've literally been sitting here since the inception of the program through today, you know, trying to advocate for the horses and advocate for the land, if you will, because we've seen what it does. We've lost allotments to it. We have one allotment that we have used three times in the last 25 years. We've taken non-use every other time. It is because there's, there's really nothing there. There's no reason to go in there.” (Ranch Stakeholder)

The WHB Program problematizes these economic concerns further as range equines do not provide economic revenue for market consumption. Rather, managing equines according to the WFRHBA of 1971 are unable to be useful economically. Instead of economic benefits from equine management, there are heavy economic costs to taxpayers. For example, the BLM pays individuals \$1,000 to adopt a wild horse or burro. The BLM spends over \$27,000 for the life of a horse held off-range, for which there are currently over 60,000. the BLM equines adopted through the training program benefit the trainers financially. The current economic challenges for the WHB Program, along with range degradation conditions, management of equines appears as an economic threat.

If we are to address the settler colonial land-use logic within this program, the economic justifications for livestock production to national and international markets would not suppress the ecological rangeland concerns. However, if the agency is to continue operating within this settler colonial logic, then they need to recon with the economic challenges that this program creates. Finding avenues to develop revenue from range equines removed from the range is one way of addressing this. Otherwise, the embeddedness of this settler colonial logic within federal

operations creates justifications for further rangeland degradation, livestock prioritization, and efficient, but not effective, horse management.

Propertied Boundaries in the WHB Program

The settler colonial land-use logics of economic productivity, as described in the first section of this chapter, also inform the creation of federal property and private property for white settlers. All space within the settler U.S. geographic bounds is the ancestral territory and travelled land of Indigenous peoples. To conceptualize these places as inherently belonging to the United States, is a justification process that ignores Indigenous sovereignty over both private and federally managed land today. It is a justification process instilled via military prowess, akin to a nation-to-nations take-over. In this section, I will outline, within the development of distinct federal, private, and reservation lands, the relevance of range equines. Then, I will describe how private property within federally owned lands creates the conditions prioritizing private interests over the WHB Program legally. Lastly, I will discuss how settler colonial propertied boundaries create challenges for Tribal/Nation governments when equines travel onto reservation lands.

To acquire the West, the United States government bought land in 1803 from France in the Louisiana Purchase, warred against Mexico between 1846 and 1848, and engaged “international arbitration”²⁴, etc. to “own” the American West land space. However, settler invasion in the American West began prior to United States “ownership” of such territories, including by fur trappers, Mormon exodus, and others. The predominant push for United States

²⁴ <https://history.state.gov/milestones/1830-1860/oregon-territory#:~:text=Originally%20Spain%2C%20Great%20Britain%2C%20Russia,territory%20to%20the%20United%20States.>

colonization of the American West is well documented to be culturally charged by the Manifest or Divine Destiny of not only a right, but also a responsibility to acquire and re-make the West (Pratt 1927). Manifest Destiny or Manifest Design was a cultural articulation based on the settler colonial land-use logic of economic productivity for the benefit of the United States through capital accumulation (Hietala 2003).

When the United States colonized the American West, they maintained “ownership” but created incentives for settler private land holdings through policies, such as the Homestead Act of 1862. White settlers chose areas with springs, water sources, or ability for irrigation. Areas not settled by whites were treated as “commons”, available for settler use. Due to the Great Dust Bowl and ecological degradation of the commons, the United States federal government took over regulation and responsibility of common lands. These commons are now under the jurisdiction of the BLM and are where range equines currently roam. The Bureau of Land Management (BLM) which wasn’t established until 1946, long after settler expansion, maintains privately held land within its jurisdictional boundaries. This also includes square-mile checkerboard structures between federal and private land jurisdiction, emerging from railroad land grants (Library of Congress).

Prior to U.S. genocide and enforced reservation system, Indigenous peoples within the Great Basin and Intermountain West regions, such as Shoshone, Paiute, Apsaalooké, Blackfoot, etc. moved camps year-round. As reservation and BLM lands are areas of least value to settlers and the U.S. government, Indigenous peoples and WHB herds are now often located in nearby areas. Below is Figure 15 of a map of the current reservation lands in the western states as well

as the location of present-day herd management areas²⁵ (U.S. Census Bureau 2010; BLM 2021). According to this map, there are 20 reservations that share a direct border with a herd management area. There are 85 reservations that are within a 50-mile radius of a herd management area, the distance an equine could feasibly travel. There are some Indigenous lands, such as the Agai Panina Ticutta (Summit Lake Paiute Tribe), whose U.S. constructed boundaries are bordered on all sides by herd management areas.

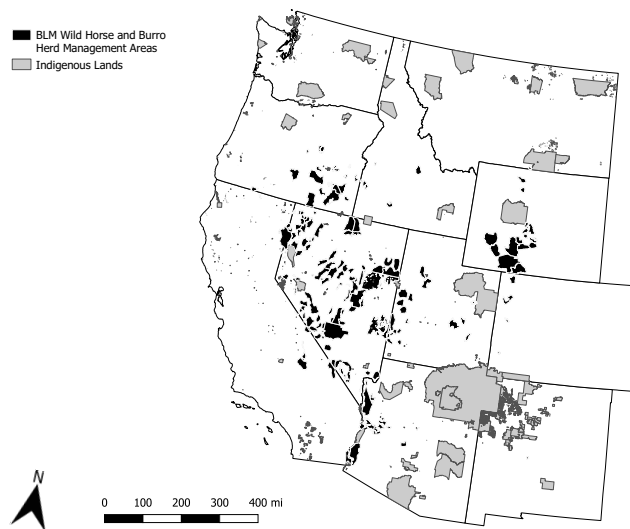


Figure 15: Map of western U.S. continental state with BLM WHB herd management areas and their proximity to Indigenous lands (reservation and trust lands). Map created by Brandon Larson in QGIS.

Current herd management areas are the sites of Indigenous ancestral land that they were forcibly removed from, including early reservations. For example, the 1.8-million-acre Malheur Reservation, designated in 1872 by the U.S. president Ulysses S. Grant for “all the roving and straggling bands in eastern and southeastern Oregon,” which at the time included the Northern Paiute people as well as the Shoshone and Bannock people who were fleeing U.S. infantry

²⁵ Present day HMAs do not encompass all areas that had horse or burro herds in the 1970s. There is an additional category of Herd Areas (HAs), that identify where horses were located, but through BLM decision-making, are no longer managed for horses or burros today.

waring²⁶. This reservation was encroached upon by settler ranchers and was dissolved in 1878 because of settler folk imperialism. This is the process by which settlers took over waring and land acquiring efforts against Indigenous peoples under conditions that contradicted United States – Tribal government agreements. American folk imperialism dispossessed Indigenous peoples of lands that they called home, U.S. allotted reservation lands, and ceasefire agreements of safety (Whaley 2014). This was a settler practice in the mid-1800's in present-day Oregon (Whaley 2014). For the dissolving Malheur Reservation, residents were forcibly moved to the Yakima Nation reservation in 1878. By 1883, the Malheur Reservation was signed into public domain by the U.S. president Chester Arthur. In 1972, almost a century later, the Burns Paiute people returned to acquire 771 acres of land to form the Burns Paiute reservation. Today, the Stinkingwater herd management area is situated within the original location of the Malheur Reservation. See Figure 16 for a map comparison of this area between 1879 and 2022.



Figure 16: Malheur Reservation map from 1879, retrieved from the Oregon History Project. Compared with BLM herd management area map in Oregon, retrieved from the BLM WHB Online Corral Webpage.

Even though the United States federal government creates distinct legalized boundaries between private, federal, and reservation lands, equines, cows, and many other species migrate between these legal jurisdictions. In the words of James McCarthy, “biophysical nature turns out

²⁶ <https://www.oregonhistoryproject.org/articles/historical-records/malheur-indian-reservation/#.Y1R-9tPMIUs>

to function as a ‘commons’ whether we like it or not, in the sense that it is impossible to keep private natures truly cordoned off from the rest of the world” (2005:9). Although McCarthy is referring to private decision on private lands, that ultimately affects others, shared spaces, and migratory species, they all ultimately affect one another. Equines are especially susceptible to migrate from classified herd management areas because they are searching for scarce water and forage. They roam onto private lands and reservation lands. The only tactic to restrict equine movement between these arbitrary legal bounds is through fences, which are taxing to construct and maintain. Some areas do not warrant themselves well for fences either due to rough topographic conditions such as rocky slopes.

Propertied boundaries continue to affect the way the United States categorizes range equines. Legally, according to the WFRHBA of 1971, only equines on BLM and USFS lands are “wild”. The WHB Advisory Board has referred to horses present on Indigenous reservations as “tribal horses” (WHB Advisory Board Meeting Minutes 10/2019:21). However, Indigenous peoples do not often see that they “own” range equines, but that equines are agentic beings themselves. Equines that roam freely on private lands are referred to as “feral”. However, many folks I spoke with that follow the Problematic Narrative think about “wild” BLM equines as feral, not legally, but colloquially.

The process for consulting with Indigenous Nations as it relates to the WHB Program, is formally outlined by the U.S. government, and typically occurs on project-level bases²⁷. See Chapter 4 for more discussion on Indigenous consultation law and practices. Consultation with

²⁷ The BLM only has two cooperative management agreements with Indigenous Nations, neither of which related to WHB management (2016 Secretary of the Interior Order no. 3342).

private landowners, in comparison, often occurs on a more frequent basis. The BLM has unique relations with private property owners because their land is interspersed in herd management areas and with ranchers that lease allotments within herd management areas. Ranchers are typically the only people who live within BLM management bounds, due to their private land or allotments. Because there is private land within BLM managed lands and many of these private landowner's lease grazing permits on the surrounding BLM lands, they frequently consult BLM range conservation specialists about their permitted plots. Please note that some of these ranches and permit owners are Indigenous. These tend to look like informal discussions or cooperative agreements, such as cooperative monitoring memorandum (IB 2018-006). Cooperative monitoring was developed in partnership by the Public Lands Council, an advocacy organization representing ranching interests on public lands, with the goals of consultation and coordination for improved rangeland conditions to meet both rancher and BLM conservation goals. Through these cooperative agreements, private landowners often implement conservation strategies, such as fence repairs, development of water resources that benefit range equines, etc. on BLM lands.

The unique nature of BLM-rancher consultation largely informs the BLM's WHB Program, especially in cases of interspersed federal-private lands. Under these conditions, it has been difficult for the federal government to legally detangle private and federal land rights and responsibilities. In southwest Wyoming, the Rock Springs Field Office manages five herd management areas (one of which is co-managed by the Rawlins Field Office). Due to the checkerboard land ownership pattern resulting out of the Transcontinental Railroad Act (1862), these managed lands are square mile checkerboard ownership between private ownership and federal BLM lands. See Figure 17 for a map of the five herd management areas and the legalized federal-private ownership within them.

The Rock Springs Grazing Association (RSGA), the organization that coordinates on behalf of its member's, was created prior to the BLM, and has been in partnership with the BLM since it was founded almost 80 years ago. When the appropriate management level of horse population numbers was originally established for these five herd management areas, they were decided "through agreement with wild horse advocacy groups and the Rock Springs Grazing Association (RSGA)" (Wild Horse Gather to

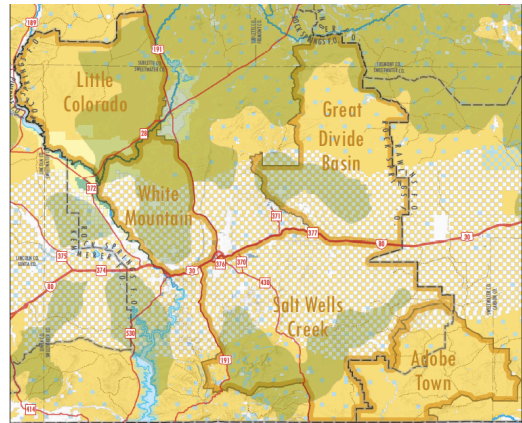


Figure 17: Map of Rock Springs Field Office herd management areas that demonstrate checkerboard ownership structure

Appropriate Management Levels on the Adobe Town, Salt Wells Creek, Great Divide Basin, White Mountain, and Little Colorado Herd Management Areas 2021:A-2).

For the past decade, the RSGA communicated concern about horse use on their privately owned checkerboard sections. In 2013, they entered a legally binding Consent Decree with the BLM to remove horses from the private portions of these five herd management areas. This is difficult, however, since there are no fences between these checkerboard lands, and they operate, in many respects, as shared rangelands. See Figure 17 for a map of the checkerboard propertied pattern across these five herd management areas. According to the WFRHBA of 1971, WHB are only allowed to graze in herd management areas, not on private land. The requirements in this act, to manage WHB species in herd management areas, but not on private land, becomes contradictory when reflecting on the Rock Springs Field Office jurisdiction and the checkerboard propertied boundaries that exist within them.

However, leading up to 2013 was not the first time there was litigation related to the management of horses across these herd management areas. In 1982, an amended 1981 federal

district court decision (*Mountain States Legal Foundation v. Andrus*) related to the management of range horses across these propertied boundaries,

“interpreted § 1333(a) [a part of the WFRHBA of 1971] to command culling of all wild horses from ‘the checkerboard grazing lands’ in the Rock Springs, Wyoming region”. In the footnote, “The opinion neither cited any scientific evidence indicating that the horses exceeded the land’s carrying capacity, nor demonstrated that the horses, rather than the livestock, primarily caused the range deterioration” (Buckley and Buckley 1983:37).

In this case, “Congress was empowered to extend federal control beyond public boundaries.” (Buckley and Buckley 1983:33). The resulting practice was to remove horses across the propertied boundary checkerboard areas through helicopter gather removals. This has remained the practice since. According to the most recent draft Resource Management Plan Amendment (BLM 2020), there were helicopter gathers across parts of these herd management areas in 2010, 2011, 2013, 2014, 2017, and 2021. Although I do not have printed gather dates between the early 1980’s and 2010, communication with BLM personnel indicate that there were frequent gathers prior to 2010.

What is important to indicate about these decisions is first, that there are legal challenges between propertied boundaries within the WHB Program. Settler colonial law operates as a virtual structure imposed on agentic beings and places, assuming the ability species to commit to that virtual structure. Second, these legal challenges are a result of settler colonial land-use settlement and historic needs (railroads) that continue to inform the management of beings even within a completely different context (WHB Program). Third, these legal propertied boundary

challenges tend to benefit those within the settler colonial land-use logic of economic productivity.

“The *Mountain States* rationale essentially sought to bolster a local economic endeavor. This by itself is not objectionable. Nevertheless, within the context of statutes aspiring to balance multiple uses and attain maximum productivity from all environmental amenities, a decision which so obviously favors one particular value over another reduces the goals of FLPMA [Federal Land Policy and Management Act of 1976], PRIA [Public Rangeland Improvement Act of 1978], and the Wild Horses Act to mere ‘lip-service’.” In the footnote, “The tenor of the opinion stresses the need to cull the horses for the benefit of the ranching operations” (Buckley and Buckley 1983:39).

The social-history of settler colonialism, legal structures, propertied boundaries, etc. tend to prioritize economic productivity within the land-use logic. However, it is important to note here that although the RSGA has communicated concerns about horses straying onto their private square-mile checkerboard plots, and whose gathers are focused on the checkerboard sections, horses still roam between.

Four of these five herd management areas are now suggested by the BLM, as a response to the 2013 RSGA Consent Decree, to be transitioned to herd areas, for which all horses will be removed. A herd area is a BLM land designation for which they originally managed WHB species in the 1970s but are no longer managed for these species. Even though BLM personnel have more frequent communication with ranchers on public land and these interests are defended by Congress, it often takes the BLM a long time to respond to rancher concerns.

Private livestock ranching interests inform the WHB Program through their history of helicopter gather mustang management, frequent communication with BLM personnel, legal precedent for removals across checkerboard boundaries, and through the land-use logic of profit motive²⁸. When I chatted with a WHB advocate about some of the most striking things they learned when they began working on this program, they discussed the ways in which livestock interests inform horse gather operations.

“There was also the amount of cattle that I was seeing through the ranks and administrative system that were in Wild Horse habitat. You could almost pinpoint why horses were being rounded up if you looked at the grazing permits, and you tracked who the rancher was, to how political they are or how involved they've been in the Bureau of Land Management, how involved they've been on the RACs [Resource Advisory Councils]” (WHB Advocate).

Livestock ranchers have an economic interest in the management of range equines as they rely on overlapping BLM managed resources for their livestock operations. Even if management does not always result in the desired outcome for livestock ranchers, they have communication platforms for frequently communicating their needs and they do receive agency response and work towards their needs.

When range equines migrate across propertied boundaries from BLM managed lands to reservation lands, we see an institutional remediation process akin to migration on private lands (removals), but not necessarily with the same circumstances for communication. Additionally, U.S. federal government legal responsibility to range equines interferes with Tribal Sovereignty

²⁸ Of course, WHB advocacy groups also inform this program, most clearly in the creation of the laws that govern and protect these species and in promoting fertility control operations at both field office and national prioritization.

on reservation and trust lands. For instance, when Tribes/Nations do not have decision making and capacity to manage range equines that have strayed onto reservation and trust lands. This creates the conditions by which Tribes/Nations must enter into bureaucratic agreements and institutional processes with the BLM to address their reservation's range equine concerns. Settler colonial social-history and ongoing land-use logics and propertied boundaries created conditions by which Indigenous "sovereignty is not freedom from external control but is, rather, an inescapable web of negotiation, contention, and concession that leads to further entanglement" (Biolsi 2010:69).

Indigenous experiences in this process differs, sometimes over time, such as since Deb Haaland accepted the Secretary of the Interior appointment, or by the field office they are communicating with. On one reservation, I was told by a Tribal Environmental Director that the BLM conducts yearly round ups on their reservation for burros that migrate yearly from BLM to reservation lands. Concerns around horse migration across propertied boundaries varies by Tribe/Nation and how the BLM field office handles such. On another reservation, the Tribe/Nation does not have the memorandums or agreements in place for such activities and relies on the BLM to negotiate the horse gather on their reservation into their gather request schedule, which could take a year or longer.

During one conversation with a Tribal/Nation Natural Resource Director, I was told about the bureaucratic concerns for removing range horses that impact a keystone species for the Tribe/Nation, a being that is also listed by the United States as an endangered species. They counted 150-200 range horses and 10-15 head of cattle in their comparatively small reservation.

"It would be best if we could minimize our involvement with the BLM by having the tools in our own bag to handle these species on our reservation ourselves. The

BLM lead time is too long. The agency knows about the horse trespassing but won't be able to remove them for a year, adding us onto another nearby WHB gather. But we don't want to have to wait a year to get horses removed. We would rather have proactive policy/practices... We haven't yet discussed developing power on our reservation to deal with this issue. I want to do my own research and come prepared first" (non-Indigenous Tribe/Nation Natural Resource Director).

Range horse and cattle concerns require negotiation, communication, and agreements with the settler colonial state. To bureaucratically develop sovereign power requires this entanglement with the BLM and nearby private livestock operators. Although the two examples presented above, the private ranchers and the non-Indigenous Tribal Natural Resource Director, communicate concerns about BLM range equines on their managed lands, there are important elements to delineate these two. The first is that the BLM treats private property the same way that they treat reservation lands. Meaning, that reservation lands must also abide by the same U.S. federal laws regarding BLM range equine management. This involves notifying the BLM and getting on the national horse gather schedule, which could take a year or longer. The Tribe/Nation must engage in US bureaucratic processes for their own reservation management. Additionally, there is variation in the reasoning between the problematizing of range horses. For the private land holders, they live in an environment with more precipitation and problematize horses because they want enough forage for their livestock operations. For the Tribal/Nation natural resource director as well as their Tribal Council, problematize horses because they live in a more arid environment and want enough forage and functional springs for wildlife and Tribal keystone species. There are different purposes behind their concerns for range horses.

Removing strayed cattle is another concern for the Tribe/Nation that they must negotiate with the ranch manager.

“We notify the local ranch when we find cattle trespass. The ranch has a Ranch Manager that we speak to. The quality of the interaction is dependent on the ranch manager. This position experiences frequent turnover, so we are often asking different people to remove the cattle from our reservation. Regardless of their friendliness or relationship, it takes longer than the Tribe would like for the cattle to get removed. It usually takes weeks to months. We must keep bugging the ranch manager. We believe this ranch has permitted grazing rights on BLM land, so the BLM has some responsibility for making sure the animals are within their permitted plots, or at least they do not provide the necessary enforcement to make sure that they stay within their permits... When I was conducting my master’s research on the reservation, I always remember seeing cattle around. This is a long-term constant issue for the Tribe” (non-Indigenous Tribal/Nation Natural Resource Director).

Although the management of livestock grazing is directly under the guide of the ranch operations, the BLM also has responsibility for ensuring that livestock do not travel off BLM lands. The semi-frequent occurrence of cattle trespass is not enforced by the BLM. During my fieldwork, I saw multiple occasions of this, including cattle that had strayed into a recreational campground.

To combat range horse and private cattle movement across propertied boundaries, the Tribe/Nation constructs wildlife friendly fencing on their borders and has a memorandum of

understanding with the BLM to maintain a section of the boundary fence that is jurisdictionally located on BLM federal land. However, fence maintenance requires frequent work.

“Horses often go through fences or trample the boundary fences. We must repair when this happens, it is an ongoing issue. This is something we deal with every year... The fence along the southern boundary of the reservation is not well maintained, it is rough topographic conditions. We think the cattle come through there.” (non-Indigenous Tribal/Nation Natural Resource Director).

Although the Tribe/Nation works to maintain desired conditions for keystone species, they must confront the settler colonial land-use logics and propertied boundaries that frequently impede upon Indigenous and Tribal sovereignty. In so doing, they must engage in settler colonial institutional formations. Burow and co-authors (2019) outline entangled sovereignties as a major concern in the American West.

“... the attenuated sovereignty of Tribal Nations in the United States can severely restrict the exercise of governance over Indigenous domains... These 'entangled sovereignties' force Indigenous nations to negotiate multiple institutions in order to mitigate the territorial claims made by various actors and also operate through the instrumental effects of these policies' outcomes (Cattalino 2010; Dennison 2017; Biolsi 2018)” (2019:6).

If we are to address the ongoing impacts of settler colonialism on Indigenous sovereignty, then we must acknowledge the ways in which settler colonial institutions and land-use logics continue to physically impede upon that sovereignty and require engagement with settler colonial institutions. Those that may question Indigenous power and authority on the significantly reduced lands that they have been allotted by the United States federal

government also signifies the settler colonial land-use logic that settlers have the appropriate and best ways to engage in land management. This is a fallacy, proven through the settler colonial social-ecological transformations that have polluted, paved, and made inhospitable places across the United States.

Conclusion

“... if property law as an institution is to be just in its application to Native peoples, it must at least attempt to respect their unique claims to land and resources. The existing framework, unfortunately, does not” (Tsosie 2001:1301).

Indigenous and Tribal sovereignty is impeded upon by settler colonial land-use logic, property boundaries, and the requirements of Tribal/Nation governments to negotiate across settler colonial institutions. In this chapter I demonstrate how settler colonial land-use logic was used to justify United States ownership and white settlement across the American West, creating physically bounded private property, federal lands, and separate reservation and trust lands. Today, the settler colonial land-use logic of economic market productivity for capital accumulation informs the way people think about range equine concerns. This ultimately informs the WHB Program management tactics by choosing management tactics that economically benefit those within the ranching industry, such as in gather operations, off-range holding, and training. Today, the settler colonial property boundaries create additional challenges for the management of agentic range equines that choose to move across terrain to areas with forage and water, traveling over settler legalized property boundaries. Today, settler colonial institutions require sovereign Indigenous Nations to negotiate through their bureaucratic formations for the ability to manage species that migrate onto reservation lands. Settler colonial land-use logics

continue to create unjust systems that entangle Indigenous sovereignties with settler colonial institutions.

CHAPTER 5: SETTLER ECOLOGIES AND MAINTAINING BALANCE

I am always nervous beginning these fieldwork trips. What am I doing here? Why me, the Willamette Valley PNW chick who has been so far removed from rural country life having grown up in urban Portland, OR. I do not see myself as dependent on these places. What do I know about semi-arid rangelands? Does what occur on them have a tangible impact on my life? Does mismanagement still affect me? What is their role and place in continental or global ecosystem function?

I love the natural environments of the rural American West. I love backpacking in remote locales, where I might be 20-miles from the nearest person. I love finding springs in the desert. I love witnessing the hummingbirds, rabbits, and bats near these springs. I love seeing the tall rosebush, thistle, and bluebunch wheatgrass. I love seeing vibrant life in a barren place. But I do not know these rangelands. I don't have a relationship with most of these species, so I am limited. I don't have an integral knowledge of this place to really know the difference between perennial bunchgrass species and their importance in human life.

Driving southeast from Eugene, OR on my way to Nevada, I first camped south of Burns, OR at the Malheur Wildlife Refuge. This is a refuge with marshlands and creeks. No wonder the Bundy gang wanted to graze here as it has substantial water. But this area is legally protected. There are fences on either side of Donner und Blitzen River, and it does not appear to be grazed compared to, well, most everywhere else I drive past. Donner und Blitzen River is amassed in tall perennial bunch grasses, thistle, rose, and many other plants I do not know. There is a trail from Page Spring campground that follows Donner und Blitzen River, but I could barely make it a quarter mile before the overgrowth erased the trail and I came across a pond I could not see a way to pass, nor have the desire to find a way around. It was thick and lush and green.



Figure 18: Image of Hoary Bat at Surprise Canyon Creek Wild and Scenic River in Death Valley National Park, Ancestral and Unceded Territory of Timbisha Shoshone



Figure 19: Naturalist sign at Donner and Blitzen River, re-named by U.S. military as they crossed during a thunder and lightning storm

I left the campground to head south towards the South Steens herd management area. The nearby maps indicate that you can watch range horses off the South Steens Loop Road. It didn't take long driving down that gravel road before I spotted about 30 horses to the left. I parked in front of a well-maintained horse trail and got out of the truck to get a closer look. There were about four foals in the herd. All the horses and foals looked beautiful and healthy. There were a variety of colors and coloring. Those reproductive choices are not influenced by people, the horses make their own reproductive choices, and the outcome is a beautiful variety. I noticed bay, dun, black, skewbold, baydun, pinto, palomino, and chestnut.

Many were standing under the occasional tree. I guess that might be why this is listed as a horse viewing area. It may be the only trees within a large distance and provides shade on the 100-degree days that we are experiencing this summer. Some of the horses also looked about 15 hands tall. On the South Steens herd management area website description, it says the horses could get as tall as 16 hands and weigh 1,200 pounds²⁹. I was surprised by how healthy they looked. I didn't see any pointy hip bones or ribs, nor did I see available grasses. There were little dry perennial grasses between what sagebrush was left. Maybe 1/4 of the sagebrush was drying or dead. I wonder, what are they eating? After scoping out the horses, I took the well-worn horse trail in hopes of finding their drinking spring. I took the trail until it became clear that there is no spring nearby. I drove further down the road in case the spring on the map was further away. All I saw was a dried pond. I wonder, where are they drinking water?



Figure 20: Image of range horses at South Steens herd management area standing underneath the shade of juniper pine trees. Ancestral and unceded territory of Northern Paiute

Leaving the herd management area and heading south into Nevada, I could not hide the desolate impression that the rangelands leave me with. Again, I question, what am I doing here? I passed by some green grass and water ponds. This was the long stretch of Roaring Springs Ranch, with multiple horse corrals on the 205 south of French Glen. The green was obviously irrigated but still refreshing amid the brown contrast of everywhere else.

When I made it to Winnemucca, I questioned again, what am I doing here, and not just in Winnemucca, but Nevada itself. I step out of the airconditioned truck

²⁹ <https://www.blm.gov/programs/wild-horse-and-burro/herd-management/herd-management-areas/oregon-washington/southsteens>

into the afternoon heat, made hotter by the cemented town. I entered the BLM ranger district office to find maps. I walked in with only my loose summer driving dress on. I feel as though I do not look like I am from around here.

After conducting fieldwork through parts of rural Nevada, I drove into the Reno metropolitan area. Driving into Reno outskirts feels quite strange after being in rural Nevada. The two-lane Hwy turned into four. I passed by two horse caution signs – to alert drivers that range horses could cross the road. I pass by outlet malls and the building of new home developments. In both, the ground is completely disrupted and either fully cemented in the former, or mostly cemented in the latter with a little landscaping. There are a plethora of new housing developments and outlet malls in the sagebrush Virginia Range. Taking notes of environmental conditions on BLM lands contrasts with urban sprawl. What environmental conditions are there to document; the few bushes, and trees, and shrubs allowed to stay or planted post construction? Comparatively, the environmental conditions are significantly worse in the urban/suburban than they are on the grazed undeveloped rangeland. I can understand the rural concerns about urbanites coming in to weigh on how the land ought to look when the land urbanites come from is almost all cemented, impervious. Have we looked at the environmental consequences of urbanization? They are much worse than grazing. I am an urbanite from a moist climate. Should I be the one researching and weighing in on range equine management?

I camped at Washoe Lake State Park (ancestral homelands of Washoe Tribe) while in Reno and went for a morning hike to try and find range horses in this section of the Virginia Range (horses which are managed through fertility control by multiple non-profit volunteer organizations). I came across range horses only a ½ mile from the trailhead. I knew I was close when I found a flowing stream with trees and fresh horse poop. I counted a total of 30 horses that came close to the hiking trail. They were walking up the canyon and picking pieces of different grasses and bushes, including bunch grass, cheat grass, sagebrush, etc. I saw them all eating pieces of different plants and moving on. There was a plethora of a variety of vegetation. It was special for me to see a seemingly healthy rangeland due to the spring with roaming horses, differing from what I observed in other parts of Nevada.



Figure 21: Image of range horses on the Virginia Range near Washoe Lake State Park. Ancestral and Unceded territory of Washoe Tribe

When I talked to my mom about feeling nervous and out-of-place while conducting this fieldwork, she said, “just because you are the only one out here doing this work doesn’t mean that you don’t belong.”

The above fieldwork notes were written from my driving, camping, and hiking experiences while researching the BLM's WHB Program in 2022. Within these fieldnotes, I reflect on my positionality, my background and place of upbringing. I ask whether it is relevant for me to be the one conducting social science research on this federal program, especially given that I am not from places where range equines roam, and I am just as invasive as the range equine descendants in the American West. I am the only person conducting social scientific research on BLM's WHB Program (see Reed 2015 for a case site exception). Maybe social scientific analysis could be informative if I demonstrate respect for the people and knowledge that is shared with me and a responsibility to communicate that information in the manner interviewees intend.

Majority of the people I speak with who live in and around range equine herd management areas (including informal conversations with locals), communicate questions about or concern over the impacts of range equines on environmental conditions. I noticed a kind of universalizing range equines as a problem. Although I am not formally trained in rangeland ecology, the material conditions should inform management decision-making. Any analysis on management decision-making, a necessarily social process, requires consideration of the material conditions of herd management areas. Although I aim to integrate range science into this Chapter, I am a trained sociologist. My discussion, although accurate given the literature cited, may miss literature and theories I have yet to be exposed to.

I cannot deny that range equines impact their environments. This has been verbally communicated to me, it has been documented in peer-reviewed publications cited in this dissertation, and I have witnessed degraded areas where the only large ungulate grazer was range equines. However, in this chapter I hope to communicate the ways in which social decision-

making and intentional environmental interventions created by settler colonists have created the conditions by which range equines presence may be creating a more intensive impact on their environments. I cannot see range equines as a problem. Rather, I see the social-historical decisions about how to manage these beings and their surrounding environment as the problem leading to degraded environmental conditions.

The WHB Program and the herd management areas where range equines roam are both a result of and contributing factor to the creation of changed ecologies. This is due to a variety of factors, including the U.S. exclusion of Indigenous peoples from decision-making, tending, and living among the ecological systems they once had. It is due to historic U.S. mismanagement and allowing of unrestricted settler use of ecological systems with livestock and horses. It is due to the economic-political alliances inherent within the U.S. capitalistic system, which prioritizes the cultivation of specific species and crops that transition landscapes into monocultures. It is due to the permanent style of living in a settled and fenced place, requiring the input of resources rather than the movement to where resources are still available. It is due to a reductionist land management practice that compartmentalizes ecosystem dynamics and assigns those differences to different specialists and agencies. It is due to U.S. sanctioned eradication of predator species. It is due to the diverting and damming of waterways, and the depletion of ground water. It is due to the urbanization and cementing over soils and streams to create impervious surfaces. Each of these factors have been intentionally imposed by the federal government through settler colonial logics and processes.

In this chapter, I first present Indigenous scholarship that communicates ways in which settler colonists have transformed ecological conditions. Resulting undesired environmental outcomes are maintained through laws, policy, philosophy, etc. that was established by settlers

early in the settler governmentality process and are structured into agency decision-making. I then briefly discuss how each socially informed item identified in the above paragraph impacts herd management areas and range equines. I wrap up this discussion with federal requirements for range equine population balance and ecological stability amidst changing conditions. This tension requires intensive human labor to implement a “balancing” mechanism in these vast rural landscapes.

Social-Ecological Traps within Settler Ecologies

Across a variety of Indigenous Nations, people have demonstrated a place-based culture where reciprocity, gratitude, caretaking, consent, and interdependence undergird human-environmental relations (LaDuke 1999; Kimmerer 2000; Norgaard 2007; Flood and McAvoy 2007; Kimmerer 2013; Watts 2013; Simpson 2017; Bhattacharyya and Slocombe 2017; Whyte 2018; Norgaard 2019). These relations take place within *ecological systems*, “interacting humans, nonhuman beings (animals, plants, etc.) and entities (spiritual, inanimate, etc.), and landscapes (climate regions, boreal zones, etc.) that are conceptualized and operate purposefully to facilitate a collective’s (such as an Indigenous people) adaptation to changes” (Whyte 2018:133–34). The co-creation of ecologies not only supports a means of relational survival via food gathering, hunting, fishing, shelter, and clean air and water, but also the cultivation of meaning, symbols, inter- and intra- Nation relations, emotions, ceremonies, identity, belonging, community, gender roles, and social organization (Norgaard and Reed 2017; Risling Baldy 2018). Coulthard (2014) defines an Indigenous relational way of knowing tied to place as *grounded normativity*, an “Indigenous land connected practices and longstanding experiential knowledge that inform and

structure our ethical engagements with the world and our relationships with human and nonhuman others over time” (2014:13).

People across the globe and over time co-create, along with natural environmental processes, the ecological systems for which they live among. Scholars have found that these systems, prior to European colonization in North America, were resilient and sustained critical food and cultural resources (Trospier 2002; Anderson 2005; Campbell and Butler 2010). These social-environmental relations allowed for Indigenous *collective continuance*, “society’s capacity to self-determine how to adapt to change in ways that avoid reasonably preventable harms” (Whyte 2018:131). This collective continuance is deeply tied to land, food, medicine, and cultural practices “used in such a way that there would always be an abundance for generations yet unborn” (Parry 2019:106). Change and transformation are inherent in ecological systems (Botkin 1990, 2012). Humans, as one of many interdependent beings, also transform and shift their activities and location in their coordination and cooperation within changing ecological systems. Collective continuance is not dependent on static conditions, but constant change and transformation can develop new social-environmental relationships for which continuity, though altered, can still be achieved (Whyte 2018).

Social-environmental relations and the ecological systems in North America, however, were dramatically altered because of European colonization and the ongoing process of settler colonialism. European colonization was equally a racialized project as it was a land transformation project for settler accumulation (Coulthard 2009). “Resources” from the land, below the land, air, and water were extracted for marketization and commodification for private owners of the means of production (Marx 1976; Foster 1999b, 1999a; Foster et al. 2010; Longo et al. 2015; Holleman 2017a, 2018). For efficient and profit-making operations, this involves

intensively utilizing one resource, such as in monocultural agriculture production, or the mining of one compound. This settler colonial domination over managing places for one economic resource severely disrupts social-environmental relationships, creating what is referred to as *settler ecologies* (Whyte 2018). These are the ecological systems we see today in North America. Settler ecologies were developed out of the present ecological systems of Indigenous peoples, however, with the addition of European materials and beings, extractive management, and the suppression of Indigenous social-environmental relations, transformed ecological systems across North America. The landscapes that we observe today has and continues to be highly altered by settler colonists.

As discussed in Chapter 2, settler colonial state interests are tied to a capitalist economy. Sociologists have well documented the revolving door of economic-political relations that lead to *industry capture* within state decision-making (Culhane 1981; Brulle 2000; Foster et al. 2010). This settler colonial-capitalist system prioritizes economic prosperity for white settlers and the maintenance of the capitalist-state relationship. The ways in which state law and policy both prioritizes single-resource economic production (timber, grazing, mineral extraction, etc.) while also criminalizing Indigenous gathering, burning, and spiritual practices is a function of institutional racism, undergirded by the ongoing settler governmentality power over land (Norgaard 2019). Those with powerful state-economic interests will do just about anything to maintain their control. This includes majoritarian, rather than consensual rule, and nation-wide decision-making authority stemming from the U.S. state capital. Those already in power continue to conceptualize who can participate as part of the majority. For instance, reconceptualizing who can be considered a citizen determining property ownership (Haney López 2006), recreating electoral college boundaries to benefit one political party (Kousser

1999), and racialized voter suppression (Anderson 2018; Carrillo 2020). Even through public inclusion mechanisms, the U.S. state continues to struggle to allow for public efficacy in its decision-making due to legal, economic, and political requirements primarily determined in Washington, D.C. (De'Arman 2020).

The creation of settler ecologies, although designed and managed for intended purposes, often results in undesirable environmental conditions, such as climate change, mega fires, displaced species, erosion, poor soil quality, polluted air, polluted water, etc. Environmental sociologists refer to this process as *unintended consequences* (Merton 1936). This is when set goals and desired land uses unfortunately end up causing undesirable conditions. Note that “desired conditions” are socially determined, often by those in power and based on dominant perspectives (Jenkins 2023). Although the unintended consequences are largely due to limited knowledge about North American ecosystem processes, they have been maintained over time. Indigenous scholars refer to this continuation of undesirable environmental conditions as the result of *social-ecological traps*. These traps are maintained through “interactions among actors, institutions, and ecological dynamics” that make persistent ongoing undesirable environmental states (Long and Lake 2018:2). Long and Lake (2018) outline social factors that contribute to the perpetuation of these traps:

“legal and political constraints on tribal land tenure [displacement], access and stewardship; decline in the quality and abundance of forest products due to inhibition of both natural disturbance and indigenous tending regimes; competition with nontribal users; species extirpations and introductions of invasive species; and erosion of tribal traditional ecological knowledge and relationships that are important for revitalizing resource use” (2018:4)

The creation of undesirable environmental conditions originated out of European colonization, ongoing settler colonialism in North America, and the political-economic systems that legalize, justify, and perpetuate these settler ecologies through the creation of such traps that make alteration of these relationships nearly impossible. Settler colonial scholars point out that the creation of settler ecologies result in colonial ecological violence against Indigenous peoples (Bacon 2019). This is because Indigenous peoples are often located in the places of dramatic climate change on stagnant reservation land (Farrell et al. 2021).

As discussed above, the ecological systems of North America have been significantly altered since European settlement. This alteration was promoted and legally bounded by the U.S. government to pursue the goals of economic prosperity for settlers and for population growth. In her keynote address to the International Association for Society and Natural Resources, Ruth Beilin (2021) referred to this process resulting from European settlement and sheep grazing in Australia, another settler colonial country, as trying to create a “landscape of elsewhere”. Across the American West, white settler ranchers similarly introduced the cow to sagebrush steppe ecosystems to mimic agriculture and grazing practices present in moister climates from which they came. Nature, to settlers, would conform to their own social imagining (Freudenberg, Frickel, and Gramling 1995).

While on a range tour with a rancher that practices rotational cattle grazing, they showed me plots that were over-utilized by prior ranchers, referred to as “legacy grazing”. Prior ranchers operated dryland farms that were plowed and cultivated in that plot. Now, there is little edible vegetation. Although this legacy grazing occurred 50 years ago, the rangeland plot is still impacted by that prior poor use. The idea that this semi-arid rangeland can sustain such agricultural activities was based on a notion of a “landscape of elsewhere”. Elsewhere could

have sustained such agriculture, but the place where it occurred, obviously did not. Halogeton now is the dominant vegetative community in that plot, which is poisonous to livestock. Halogeton primarily grows in disturbed soils in colder semi-arid rangelands³⁰. The rancher, although has access, takes non-use in that plot, in large part because there is not much that cattle can graze, and hopes that white sage can grow back.

In 1971, the U.S. government estimated that there were approximately 26,000 horses and burros roaming the American West rangelands (BLM, HMA Statistics, 2020³¹). This value was not determined by monitoring science, but from best available estimates that people had of the newly created herd management areas after claimed range equines had been removed. This number, or appropriate management level (AML) is used today to determine what population statistics, exactly, the U.S. government would like to see for range equine population in each herd management area. The contemporary justification for these estimates argues that if populations exceed their herd management area's AML, often referred as "over population", then they are degrading the environment. This is the primary concern of public lands ranchers and the U.S. government, leading to the practice of removing "excess" range equines from the rangelands and a limited effort to treat range equines with fertility control. The BLM is concerned about the poor quality of the landscapes they manage range equines in and the low body condition scores of some range equines, justifying mass horse gathers. This is like other large-scale animal management concerns of over-population. For example, Australia and Canada also have range equines that these nation-states are concerned about.

³⁰ <https://www.ars.usda.gov/pacific-west-area/logan-ut/poisonous-plant-research/docs/halogeton-halogeton-glomeratus/>

³¹ https://www.blm.gov/sites/blm.gov/files/wildhorse_2020_HAHMA_Stats_508.pdf

Throughout my research I have come across information on range equine population numbers that indicate there were far more than 26,000 range equines in the American West over the last 400 years³². According to autobiographical accounts, in the 1850s the Eastern Shoshone under the leadership of Chief Washakie and prior to the U.S. sanctioned Wind River Reservation, documented approximately 1,000 people traveling with 5,000 horses across the Intermountain West (Wilson 2009). Northwestern Shoshone leader, Darren Parry communicates that “Shoshone numbered more than 70,000 extending from South Pass in Wyoming to the California-Nevada border” when they first encountered white explorers (Parry 2019:10). Many Shoshone at the time traveled with at least one horse. Cayuse communicate “by 1800, it was not unusual for a wealthy family to own fifty to 100 horses; forty years later that number grew to more than a thousand” (Tamástslíkt Cultural Institute). Many other Tribes and Indigenous people, as mentioned throughout this dissertation also organized their lives in coordination with large horse herds, including the Comanche, Sioux, Paiute, and Apsáalooke. Please note that because these Indigenous communities, at the time, traveled seasonally with horses, often to areas with water, they likely did not have as much of an impact as horses do in herd management areas today.

According to BLM documentation in 1910, after colonization had been ongoing for a long time, there were approximately 100,000 range horses in Nevada (Gruell 2012:60). These population numbers may have also likely impacted legacy grazing. Rancher interviewees communicated large historic population numbers as well. Two interviewees told me by name of a person who ran 10,000 horses across Southcentral Oregon. Another family in Southcentral

³² Please note that scientific literature identifies that horses were not present in North America from approximately 11,000 – 400 years ago (Guthrie 2003; Haile et al. 2009; Taylor et al. 2023)

Oregon managed 5,000 horses. Many other ranch operations ran large horse herds in Oregon and other states of the Great Basin and Intermountain West. This contrasts to Oregon's AML, which is currently set by the BLM at 2,700 horses. A rancher in Wyoming told me that in the early 1900's, their Great Uncle ran 800 horses. Horses were used for sheep, livestock, haying, transportation, agriculture, breeding, saddle, warfare, etc. For the work, "it wasn't, it's not all that many" two ranchers jointly stated, considering people did not use automobiles for this work. "Each guy probably had 5, 6, 7 horses because they rode them so hard and went every day that now I have three or four that I use all the time. I mean, it's, it's just different" one rancher clarified in trying to communicate the different need for horses in the early 1900's compared to today.

Recognizing that populations were being depleted by mustanging sale-for-slaughter, these historic numbers likely did decrease by the 1970s. However, determining that only 26,000 range equines can roam across the American West, or at least within existing herd management areas, is a preference. Science can be used to tell us the consequences of various population sizes, but there is not any natural fact about how many there "should" be. The AML value is indicative of more than just desired range equine population numbers. It is determined in congruence with fenced rangelands, private property ownership, and springs. Due to these concerns, along with the desertification of these regions resulting from changing climatic conditions, range equine population numbers above AML are reported in WHB EAs and are known to impact the environmental conditions in some of the rangelands they are confined in today. It is not just about range equine population numbers, but also other social managerial efforts that lead to greater impacts in constrained rangelands. Although there are a variety of challenges by communicating range equines as both "wild" and "invasive" according to federal

law and science respectively, I understand that range equines are a contributing factor to the creation of settler ecologies. I also recognize that their environmental impacts are greater and provide little social benefit when managed by the federal government.

Settler Ecologies and Range Equines

Herd management areas, where BLM allows range equines to roam, are predominantly located within the sagebrush steppe ecosystem, unique to the American Great Basin and Intermountain West regions. It has an arid and semi-arid climate with unique shrubs, perennial grass, and forb species. It experiences unique fire intervals, human and wildlife migration patterns, etc. These regions experience regular drought conditions and are expected to see further reduction in forage and water as the Earth's temperature increases under changing climatic conditions (Wisdom et al. 2005; Wang and Gillies 2012; IPCC 2022). Regions where range equines roam continue to experience significant changes to animal and vegetative communities, as they have for centuries. Semi-arid regions, such as the Great Basin, experiences erratic climatic changes. "In fact, extreme events are an essential aspect of the functioning of ecosystems" (Gruell 2012:49). For instance, "plant growth in the Great Basin can be six times greater in wet years than in dry years... plant growth is inextricably linked to large fluctuations in seasonal temperature and precipitation" (Gruell 2012:49). The biophysical changes that have occurred in the regions where range equines are managed, although constant, have occurred at a rapid pace since settler colonization (Angus 2016).

The changing of ecological systems in present-day herd management areas first began with the U.S. sanctioned exclusion of Indigenous peoples from lands the federal government claimed. Prior to European settlement, Indigenous communities within the arid and semi-arid

regions of this study migrated via foot, dog, and horse for a variety of reasons, including year-round changing weather patterns, access to plant resources, trade, and hunting (Hodge 2019).

Darren Parry of the Northwest Shoshone describes that his ancestors,

“traveled hundreds of miles a year to different food sources in their annual cycle of food gathering... all Native peoples know and understand the delicate balance of living with nature. The sky, the earth, and the water all play a pivotal role in not only Shoshone culture, but all Indian cultures. Not only does water sustain life, but to my people, water is sacred. Water is life.” (Parry 2019:14,16)

Their plant and landscape tending practices created reoccurring patterns that fostered Indigenous collective continuance for thousands of years. During periods of environmental changes, Indigenous peoples could migrate and learn from other communities and the new ecosystem dynamics they traveled to. It is important to note that human interaction is a key component to ecological systems, they are one of many species dependent upon and creating the ecologies that settlers encountered.

George Gruell’s (2012) archival research of wildlife and habitat in Nevada point to a very different vegetative density than I had witnessed during my fieldwork. Early settler writers document in Northeast Nevada, that wild rye bunchgrass grew so plentiful and in such height that it could be seen waving in a variety of directions, for which cows couldn’t be seen amidst the vegetation. “Animals, birds, and fish were widely distributed and locally abundant when the first Euro-Americans came on the scene” (Gruell 2012:16). Traditional burning was also heavily documented of Shoshone and Paiute groups. “Various sources of evidence suggest that historically, Nevada’s landscapes burned more frequently where fuels (grass and shrubs) grew

productively” (Gruell 2012:25). Fire and harvest were the disturbances used to improve grass and shrub populations for human use, not livestock grazing.

Indigenous sovereignty over these traditional lands is significantly impacted by the United States government. Indigenous people were afforded limited decision-making over traditional lands the federal government manages, especially for the first 200 years of settlement. U.S. legislative decisions related to natural resource management cater to U.S. settlers. For the Northwest Shoshone, who did not have reservation land, found that “to survive as a people, their only recourse was to attempt to take up land and begin farming like the white settlers” (Parry 2019:73). Warfare, treaty-making, and assimilated natural resource use were tactics that Indigenous peoples across the Great Basin and Intermountain West used for their collective continuance in the face of U.S. settler governmentality over their territory.

Migration and inhabitation within federally managed lands is also restricted. Maximum stay on BLM lands, for instance, is 14 days. As discussed above, private-land owners whose property is located within BLM managed lands are the only other people allowed to live in these places due to their private property rights. This includes Indigenous people if they happen to own some of these private property parcels. Federal agencies are the only entity allowed to manage work on federal lands. If Indigenous peoples want to engage in traditional tending and land management practices, they must go through the BLM bureaucratic system to receive U.S. federal approval for such activities. This can include the request of permits, formal consultation, and memorandums of understanding. The U.S. government manages range equines, largely unsuccessfully, in the same rangelands where the forcibly removed Indigenous peoples. The U.S. government transitioned these places from that which original peoples had occupied to that where horses occupy and are problematized. This is an outcome of ongoing settler colonization.

The U.S. government does not afford Indigenous peoples the legal right to engage in the traditional territories now managed by the BLM in the ways they had done before settler colonization. Federal land management agencies are the only entities legally allowed to organize work in such environments. There are a wide variety of factors that both promote mismanagement (e.g., fire suppression, single-specie orientation) and limit agency management in these places (e.g., lawsuits, limited staffing). Indigenous people must scientifically justify their land tending practice, such as prescribed burning, to federal employees. I recognize that prescribed burning is a significant land tending practice that may impact multiple uses on the rangelands, which would require further administrative and scientific analyses by the BLM. However, it is important to remember that Indigenous use was first restricted to prioritize settler use. Now, the BLM is operating based on early legislation that, again, prioritizes settler use. Indigenous land tending is a more recent afterthought the U.S. government aims to integrate within their existing settler management practices, such as the 2022 House Subcommittee Hearing on Tribal Co-Management.



Figure 22: Image of herd management area where a fire burned on the right side of the road but not the left. Cheatgrass is the only noticeable plant species on the right side of the road.

Indigenous traditional tending of their ecologies was made illegal by the settler state. Fire management policy in the United States is a great example of this both within forest and rangeland ecosystems (Keane et al. 2002; Chambers and Wisdom 2009; Norgaard 2014; Vinyeta 2021). Although federal land managers have begun to recognize the benefits of fire use, suppression is ongoing and often a first tactic. Settler fire suppression in the Great Basin began

as early as the 1860s (Gruell 2012:67), except when burning houses built by Indigenous people (Parry 2019). Due to settler-imposed fire suppression, there are now much more intensive burns in this region.

“The problem with our big fire years was not that too much acreage burned, but that where we had fire, we had too much of it. Instead of being a force that creates or maintains plant heterogeneity with mosaics of different-aged shrubs, our fires have created even-aged stands over wide areas that lack the diversity favored by many wildlife species” (Gruell 2012:72).

Cheatgrass, an annual grass with little nutritional value, is prone to grow in disturbed areas, especially post-intensive fires. This plant creates a matt that reduces the ability for perennial grasses to sprout through, limiting winter food sources for wildlife (Knapp 1996). See Figure 22 for an image of a rangeland repopulated by cheatgrass after a wildfire incident.

The changing ecological dynamics of herd management areas is also due to historic U.S. mismanagement which allowed for unrestricted settler use. When settlers invaded the unique and fragile sagebrush steppe ecosystem, they implemented settlement, logging, mineral extraction, and grazing practices that had never existed in these places prior. For example, logging operations cleared all trees in a 20-mile radius from the town of Eureka Nevada. Cattle grazing and mining impact vegetative and water resources. Water resources were utilized for gold mining operations were often run until that water resource was exhausted, such as in present-day Joshua Tree National Park. Unrestricted common land grazing resulted in ecosystem degradation by the early 20th Century (Jacks and Whyte 1947; Box 1990). This settler practice was a result of limited settler environmental ethic (such as interpreting humans as unique and prioritized above all other species), misunderstanding the ecological processes of recently settled areas due to

unawareness, importation of new species for economic prosperity, racializing Indigenous land practices, and the integration of the U.S. within a capitalistic global trade network dependent on agricultural production (Holleman 2017a, 2018). Beavers, for instance, were almost universally abundant, except in the southwest deserts. Settler imposed and solicited trapping reduced these populations to near extinctions. Waterways have been transformed from the removal of beavers in the present settler ecologies.

Much of the Great Basin and Intermountain West landscapes were transformed to that of settler grazing ecologies. The Great Basin had seen little grazing by large mammals since the Pleistocene Epoch (Gruell 2012). This was a region where settlers brought cattle, sheep, and horses in abundance. “The new concentration of animals caused extreme soil disturbance and steady depletion of grasses and herbs that had stabilized watersheds for millennia” (Gruell 2012:57). Multiple reports identified that by the late 1800’s, much of Nevada was “overgrazed to the point of destruction” (Gruell 2012:58). In the first half of the 20th Century, the U.S. Forest Service reported that the western range, covering two-fifths of the total U.S. land area, is “more or less seriously depleted” (USFS 1936:3).

The U.S. government reported on the “unsatisfactory conditions on public rangelands” within legislation passed during the 20st Century to improve such conditions. These laws include the Taylor Grazing Act of 1934, Federal Land Planning Management Act (FLPMA) of 1976, and the Public Rangelands Improvement Act (PRIA) of 1978. These Acts were intended to adjust grazing structures to rejuvenate degenerating range conditions” (Buckley and Buckley 1983:36). As reported in the footnote,

“According to BLM research, 135 million of approximately 171 million acres of public lands produced below potential as of January 1975... A 1977 study traced

most of this deteriorated state to poor livestock grazing management and the lack of land management plans for 107 million acres” (Buckley and Buckley 1983:36)

Although there are less sheep, horses, and cattle across the Great Basin compared to the early 1900s, the effects of prior poor management can still be seen today. Additionally, those who work for public land management agencies have identified ongoing poor conditions of rangelands caused by authorized livestock grazing (PEER 2022).

Climate change, a result of anthropogenic factors, is additionally changing the ecological conditions in the American West rangelands. For example, in one environmental assessment covering multiple herd management areas, BLM personnel communicate loss of water resources.

“The local climate has been trending warmer and drier over the past few decades.

This has caused some water sources (especially smaller springs and steams) to go dry. Drying water sources have caused an increase in impacts from wild horses, livestock and wildlife at the remaining water sources. Furthermore, drying conditions have affected the abundance and vigor of some vegetation communities.” (Wild Horse Gather to Appropriate Management Levels on the Adobe Town, Salt Wells Creek, Great Divide Basin, White Mountain, and Little Colorado Herd Management Areas 2021:59).

When I spoke with a WHB Specialist about tactics to improve rangeland conditions, they communicated that the determining factor for rangeland health is precipitation. According to my fieldnotes of our conversation, “all seeding operations and other landscape improvement actions fail without precipitation.” Ranchers have also communicated concern about overuse of groundwater for agricultural operations. The rangeland conditions are a pressing concern for the

people who live within rangelands and who are dependent on rangelands for their employment and livelihood. It is within everyone's interest to improve range conditions.

Rangeland degradation in herd management areas is also due to year-round permanent settlement with fenced acreage. Because the Great Basin and Intermountain West regions experience extreme weather events (blizzards in the winter and droughts in the summer) and significant areas with clay pan soil, there is limited availability for vegetable and fruit production of the foods that settlers are accustomed to consuming. Living in permanent stagnant private property locations requires the input of resources from outside of the region. This differs from historic traditional Indigenous migratory patterns in these regions, where people moved to where resources are available corresponding to seasonality relying on existing species. Settlers across the United States are accustomed to eating food that stem from outside of their region and even continent (e.g., coffee, vanilla, bananas, sugar, etc.). These consumption practices are thus tied to significant energy consumption through global transportation technologies for food access. Those within the rangelands under study do not differ from settlers in other areas of the United States who benefit from U.S. intervention in global trade networks that expand U.S. food consumption options. However, this is a settler practice that is relatively new to North America. For people's permanent style settlements within arid and semi-arid rangelands, they must transfer resources and materials from outside of their settlement for their survival, which exacerbate climate change effects.

Permanent style living, as well as one solution posed by the United States government to improve rangeland conditions, require fencing. Since the passing of the Taylor Grazing Act (1934), fences were constructed on common lands to designate and separate federal permitted acreage.

“Fences, wells, reservoirs, and other improvements necessary to the care and management of the permitted livestock may be constructed on the public lands within such grazing districts under permit issued by the authority of the Secretary, or under such cooperative arrangement as the Secretary may approve” (Pub. L. 73-482, Sec. 4).

Fences are constructed to designate and separate private property and ranchlands. Fences are a settler management tactic to keep track of Animal Unit Months within permitted areas, control cattle through rotational grazing without human presence, and restrict overuse near fragile springs (see Figure 23 for an image of this style of fencing). Ultimately, these material boundaries restrict wildlife, horse, burro, and livestock movement (except for wildlife friendly fences that only exclude livestock and range equines).

Recognizing that most water resources are privately held, fences constrict range equine year-round consumption of vegetation and access to water. Some herd management areas have more fencing than others. WHB Specialists I spoke with have discussed how horse migratory behavior is restricted because of fencing. In some herd management areas that are heavily fenced, this is presented as a problem. Range equines have been known to break down fences to access water resources when there is little to no other. Range equines found outside of their designated herd management areas are gathered by the BLM. Range equines that travel outside of their designated herd management area may be familiar with the route and make that travel again. In



Figure 23: Fence protecting spring in herd management area, 2021

these scenarios, they are not released back to their herd management area but are gathered for adoption or long-term storage. The fencing, herd management area boundaries, and private land ownership systems significantly reduce traditional migratory practices where range equines may be able to move to access more available resources but are restricted by the federal government from being able to do so. This then intensifies their impacts within the places they are required to live permanently in, especially given the lack of water within those places.

Current BLM rangeland conditions are also a result of a settler government informed land management decision-making process that compartmentalizes ecosystem dynamics and assigns those differences to different specialists and agencies. For example, the U.S. Fish and Wildlife Service is assigned to manage wildlife, including predator species (wolves, cougars, bears, etc.), on BLM managed lands. The only species they are not congressionally assigned to manage are range equines and livestock. The U.S. Fish and Wildlife Service, in addition to tracking wildlife species also is congressionally tasked with predator reduction. The practice of predator eradication stems from settler interest for reducing predation on livestock animals, which incurs a financial cost to ranchers. Within the WHB Program Environmental Assessments, predators are either non-existent or present in a very limited capacity. These predators are known to predate on range equines, however, there aren't many (Lundgren et al. 2022). Range equines are managed by the BLM but predators are managed by the U.S. or state fish and wildlife agencies, there is a disjuncture between the management of these species that are otherwise in relation with each other. BLM recognizes loss of predators as a reason for increasing range equine populations. However, they have not communicated efforts with the FWS for predator reintroductions in herd management areas.

Lastly, BLM rangeland ecosystems are impacted by land management practices outside of BLM managed lands. Climate change, for instance, is a source of ecological change created by human consumption of fossil fuels. Additionally, the creation of impervious surfaces from urbanization and anthropocentric practices that lead to climate change has the potential to significantly impact the ecosystems of protected federal lands. For example, it is a settler perspective of insular ecology that treats ecosystem locations as islands rather than being affected by cumulative surroundings or history of environmental degradation from multiple disturbance factors (Lacava and Hughes 1984). Just outside of the Twin Peaks herd management area in northeast California, there is swamp rice farming. Water is pumped from wells underground to flood rice fields in a location that typically only experiences 12 inches of rain each year. This settler tactic reassigns the location of groundwater, which results in the drying of springs (Glennon 2002). Ranching operations in arid and semi-arid locales also utilize well water to irrigate their fields and provide drinking water for their cattle. Such wells in dry environments have been known to lower surface level elevation and dry springs (Arax 2019). If BLM management only considers activities within their designated land, not that outside of it, the causes of water loss in springs may be missed.

Urbanization and the creation of impervious surfaces, such as roadways, also impacts water processes by preventing groundwater recharge, also known as deep percolation. Although BLM lands are located far away from most urbanized locations, this is not true to lands surrounding Reno, NV, Las Vegas, NV, Salt Lake City, UT, and Boise, ID, all of which are rapidly growing and taking over range and agricultural lands (Charnley et al. 2014). Regardless of proximity, we should not be surprised when we significantly transform urban and suburban places to that of impervious surfaces and then expect protected lands to not experience change.

The creation of impervious road surfaces, a result of U.S.-sponsored transportation initiatives fueled by fossil fuel interests and car manufacturers, also transitioned human use and relationship with range equines to private vehicle and fossil fuel use. If the U.S. did not have paved roadways, people may still be using range equines for transportation purposes.

Maintaining Balance Under Change and Uncertainty

Although the above discussion paints a transformative picture of the American West sagebrush ecosystem, BLM's WHB Program is aimed at "maintaining healthy herds on healthy rangelands". Herd and rangeland health is determined by BLM's ability to maintain appropriate management levels (AML) and a thriving natural ecological balance (TNEB) (Pub. L. 92-195). These two goals of the WHB Program assume a steady-state environment and species population sizes, which is concerning because the environments where WHB roam are highly variable and unstable (Beever et al. 2018). These two goals are used to justify BLM management tactics and are the most quoted in BLM and media discussions of this program. The law states,

"The Secretary shall... determine appropriate management levels of wild free-roaming horses and burros on these areas of the public lands... [If] an overpopulation exists on a given area of the public lands and that action is necessary to remove excess animals, [they] shall immediately remove excess animals from the range so as to achieve appropriate management levels. Such action shall be taken, in the following order and priority, until all excess animals have been removed so as to restore a thriving natural ecological balance to the range, and protect the range from the deterioration associated with overpopulation." (§1333.b.2.iv)

The AML population size for a given herd management area is thus used to determine whether a TNEB can be obtained. To obtain a TNEB, the BLM must maintain low horse and burro population sizes.

When I asked a BLM Headquarters employee how they understand a Thriving Natural Ecological Balance, they replied,

“to me, is connected to the definition of AML. The AML is defined as the number of wild horses and burros that can be sustained within a designated [herd management area] which achieves and maintains a TNEB in keeping with the multiple-use management concept for the areas. The goal of WHB management should be to maintain a thriving ecological balance (TNEB) between WHB populations, wildlife, livestock and vegetation, and to protect the range from the deterioration associated with overpopulation of wild horses and burros. These concepts are also closely related to the Congress's direction that the BLM manage the public lands for multiple use and sustained yield (in the Federal Land Policy Management Act of 1976, which is seen in most contexts as the essential act to guide BLM management). For any such question, where the Congress specifies its intent and definitions, those are the ones I always try to fall back on for conceptual guidance” (BLM Headquarters).

Here, understanding of these guiding management principles, based on a natural balance and specified range equine population ranges that will either allow for that balance or inhibit it, are determined through U.S. Congressional language. However, BLM Headquarters engages in policy and handbook work to distill Congressional language into practical management. According to the Wild Horses and Burros Management Handbook (H-4700-1) and based on

litigation (*Animal Protection Institute of America v. Nevada BLM*, 118 IBLA 63, 75, (1991)), the AML range “should be below the number that would cause rangeland damage” (H-4700-1:4.2.1). The determination and evaluation process for AML must follow NEPA policy, requiring environmental analysis.

“When establishing AML, the analysis shall include an in-depth evaluation of intensive monitoring data or land health assessment. Intensive monitoring data shall include studies of grazing utilization, range ecological condition and trend, actual use, and climate (weather) data. Population inventory, use patterns and animal distribution should also be considered. A minimum of three to five years of data is preferred. Progress toward attainment of other site-specific and landscape-level management objectives should also be considered” (H-4700-1:4.2.2.1).

The BLM identifies three tiers for establishing and adjusting AML: determination of essential habitat components, determine amount of sustainable forage (through Animal Unit Month determination), and determine whether the herd size is genetically diverse.

In 2022, the WHB Program AML goals are a range of 16,340 - 26,785 range equines within designated herd management areas. Current population estimates in 2023, which now follow a rigorous double-count scientific process, are 82,384 (Griffin et al. 2020; BLM 2022). According to 2021 WHB Program statistics, over 80% of herd management areas report population sizes above the desired AML goals (BLM 2022). The assumption that horses and the rangelands can “naturally” maintain a consistently low population is a fallacy, especially with the recognition that range equine population growth rate for those managed by helicopter gathers is 15-20% yearly (NRC 2013). This also presents discrepancies between idealized management

from the very distant Washington, D.C. decision-makers to the actualities of animal social behavior in rural rangelands.

The desires to maintain a “thriving natural ecological balance” is deeply intertwined in the mechanical view of nature, which assumes that there can be some recurring “balance” in nature (Botkin 1990). This comes from European philosophies of ecology that assume nature has an inherent order, where every species serves a particular role, and interacts in a highly ordered way. A mechanical view of nature that assumes this ordering is predictable and that there are, for instance, appropriate population sizes or weather patterns. Humans can manipulate natural processes to maintain consistent re-occurring patterns, such as the desire to maintain sustainable yield. The requirement for balance is only written in the WFRHBA of 1971 (Pub. L. 92-195). A “balance” is alluded to in NEPA of 1969, “achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life’s amenities” (Sec. 101.42 USC § 4331.b.5). The ideas of maintaining balance between multiple uses are also present in the goals of the FLPMA of 1976. However, laws pertaining to grazing or mineral extraction are not aimed at maintaining such ecological balance. This demonstrates the varied goals between different programs operated by the same agency, such that grazing is aimed to maintain economic prosperity for rural communities, but WHB use is to maintain a natural ecological balance. This is also challenging given settler colonialism’s significant changes to ecologies and ecological processes, especially in the rangelands that BLM manages. Here, concern with a natural balance is devoted to single-specie management.

Although there are ideals that range equine populations should have narrow population ranges and that a “thriving natural ecological balance” is possible, Botkin (1990, 2012) argues that instead of stability and balance, the state of nature is premised on constant change.

“Through management, humans can work to maintain desired environmental conditions that they see as inherent or improve nature to create idealized conditions. If we want to keep some of these stages frozen in their current conditions, we can change the soils by turning them over or adding fertilizers. That is, we can substitute our own energy, time, and resources to replace nature’s natural processes. We can do this in some cases for a long time and in all cases for a short time, but we cannot freeze all of nature indefinitely in a single state” (Botkin 1990:68).

The input of human energy is necessary for any attempts to consistently maintain desired population ranges and environmental conditions.

Within the WHB Program, across all the range equine management strategies I became aware of during this research (helicopter gather, bait/water trap gather, on-range fertility control darting), they all required a significant investment in time – overtime. Thus, humans play a significant role with attempting to maintain “thriving natural ecological balance” on the rangelands.

Helicopter gathers, for instance, are highly expensive, costing millions of dollars. Helicopter gathers require contract crews (maybe up to a dozen folks) with specialized knowledge, trained horses, at least one helicopter, corral equipment, trucks, trailers, etc. Helicopter gathers require weeks of overtime work to gather a few hundred to a few thousand horses. When I asked BLM personnel about the daily work of a helicopter gather, their days may start as early as 3 am, and not end until the evening with the post-gather phone meeting where BLM personnel review what occurred during the day of the gather. The next day beginning at 3 am. This work is additionally challenging when considering the biophysical conditions in the

places where range equines are managed. Helicopter gather operations that occur in winter months may be stalled from freezing conditions that restrict helicopter use. In the summer months, temperatures can easily reach 100 degrees. Depending on the herd management area, whether NEPA documents are prepared, range equine population sizes, etc. will have to do the same helicopter gather work every other or few years.

Water/bait trap gathers, although requiring less contract personnel time than helicopter gathers, are still time intensive. During one bait trap gather I was privileged enough to witness as a public, the WHB Specialist had to drive almost two hours from their field office to the gather site, where there were only three horses held in the trap. They are to go back out to the trap site on almost a daily basis. Some water/bait trap gathers, depending on the herd management area and location of the trap site may be able to gather range equines at a faster pace. For instance, there was a water/bait trap in Nevada that gathered 900 horses (WHB Specialist).

For on-range fertility control darting, first BLM personnel or their partner volunteers, must identify the range equines within the herd management area, or the part of the herd management area that they are focusing fertility control efforts. This involves significant documentation work, such as photo identification and description of phenotypic traits that can allow range equines to be differentiated from each other (see Figure 24 for an example documentation sheet for fertility control treatments for Black Beauty). This includes the very common bay-colored horses, which, according to people who have conducted on-range fertility control darting can be differentiated. They then engage in darting mares with a primer dose, and then again, a few weeks later with a booster dose. Each dose treatment is recorded for that mare.

Keeping track of which mares had received fertility control, when they need to receive fertility control again, and finding those mares again is especially difficult, requiring significant patience. Not all days spent trying to dart mares will result in mares getting darted. One WHB Specialist communicated that when they conducted their

HMA WILD HORSE IMMUNOCONTRACEPTION DATA SHEET

HORSE I.D.: 1118 NAME: BLACK BEAUTY (BB) COLOR: BLACK AGE: 2011

INOCULATION DATES	PZP DOSE	ADJUVANT	DELIVERY SYSTEM	INJECTION SITE	VACCINE LOT NUMBER
3/20/12	1000	Medrol	CAD	LT	SC02108
4/4/12	1000	Medrol	CAD	LT	SC02108
3/20/13	1000	Medrol	CAD	LT	SC02108
3/20/14	1000	Medrol	CAD	LT	SC02108
3/20/15	1000	Medrol	CAD	LT	SC02108
3/20/16	1000	Medrol	CAD	LT	SC02108
3/20/17	1000	Medrol	CAD	LT	SC02108
3/20/18	1000	Medrol	CAD	LT	SC02108
3/20/19	1000	Medrol	CAD	LT	SC02108
3/20/20	1000	Medrol	CAD	LT	SC02108
3/20/21	1000	Medrol	CAD	LT	SC02108
3/20/22	1000	Medrol	CAD	LT	SC02108
3/20/23	1000	Medrol	CAD	LT	SC02108
3/20/24	1000	Medrol	CAD	LT	SC02108
3/20/25	1000	Medrol	CAD	LT	SC02108
3/20/26	1000	Medrol	CAD	LT	SC02108
3/20/27	1000	Medrol	CAD	LT	SC02108
3/20/28	1000	Medrol	CAD	LT	SC02108
3/20/29	1000	Medrol	CAD	LT	SC02108
3/20/30	1000	Medrol	CAD	LT	SC02108

NAME	DATE FOALED	I. D.	SEX	GENDER
Full mare**	2013	1300	♀	
---	2014	---	---	
NO PREGN	2015	---	---	
NO PREGN	2016	---	---	
NO PREGN	2017	---	---	
---	2018	---	---	
---	2019	---	---	
---	2020	---	---	
---	2021	---	---	
---	2022	---	---	
---	2023	---	---	
---	2024	---	---	
---	2025	---	---	
---	2026	---	---	
---	2027	---	---	
---	2028	---	---	
---	2029	---	---	
---	2030	---	---	

Press Here!

DAIRY Ten Sheep

** foal aborted or still born

Figure 24: Black Beauty's immunocontraception data sheet held by the BLM

initial fertility control treatments, they worked with one volunteer for four months with almost no time off and continued darting for a few months after that. These treatments need to occur on a yearly or bi-yearly basis depending on the immunocontraception solution being used. Range equines that have experienced helicopter gathers may be more avoidance of people and vehicles, making in-field fertility control treatments more challenging.

Conclusion

If this “single narrative/single system” approach is no longer serving the world, then, together, we can simply decide that mainstream science has evolved enough to let it go. (Hunska Tašunke Icu et al. 2023:25)

Settler colonists have dramatically transformed ecological conditions, vegetative communities, and waterways in the Great Basin and Intermountain West regions. Rangeland conditions had long been reported as denuded from over grazing by livestock. Water systems are depleted by mining, irrigation, and deep wells. The plants that grew best with applied fire struggled to provide the same volume when fire was restricted. Hundreds of square miles are asphalted and cemented over restricting deep percolation of rainwater, soil aeration, and plant growth. The

global temperature is increasing. Plant and animal species have been killed off completely. This is the settler ecologies of the American West.

Considering these changes, the United States government still asks the BLM to manage range equines in a way that allows for a “thriving natural ecological balance” (WFRHBA of 1971). How can a megafauna grazer provide balance when the biophysical conditions of whole regions are being transformed by settlers? Of course, range equines have impacts in the finite spaces they are allowed in. They are not moved by humans as they once were from areas grazed to areas not yet grazed. They lost water sources and are thus having more impacts on the few springs that remain. Range equines are not the “problem”. The ways in which settlers engage in land management, including the management of these beings is the problem that results in environmental degradation and our present settler ecologies.

CHAPTER 6: ERASURE OF PRESENT INDIGENOUS PEOPLES AND THEIR KNOWLEDGE

I met with BLM and horse gather contractors from a livestock company at a remote highway intersection with a decommissioned BLM housing barrack. We caravanned in 4WD trucks and trailers two and a half hours to the horse gather site located deep into BLM sagebrush territory.

The Public Affairs Officer and I hiked up a butte to observe the gather operations in a safe place where we would not be run over by horses and where we would not impede horse gather operations. In between watching horses being chased by a helicopter, there were hours of wait time. While waiting, the Public Affairs Officer discussed fascination with early pioneer settlers. They wondered how the first immigrants learned to live out here in a desert. I was surprised they mentioned fascination with settlers, but not with Indigenous peoples who traveled and lived here prior to European colonization. And so, I asked if they knew about Tribal involvement in the Wild Horse and Burro Program. They told me a story about horses traveling from reservation land to Forest Service land in a different state and how that was problematic for federal lands managers. Later, while we waited and chatted, they again brought up their fascination with white settlers in the region, primarily related to how they learned to live in this harsh and rural landscape.



Figure 25: Image of BLM Public Affairs Officer taking photos at a helicopter horse gather

Although these fieldnotes are from the first horse gather event I attended, it was not the first time I witnessed the cultural erasure of Indigenous peoples in the BLM's Wild Horse and Burro Program. In the case of settler colonialism, erasure is both a logic and an action, a justificatory practice that perpetuates the elimination of Indigenous peoples and their recognition (Wolfe 2006).

The settler colonial erasure of Indigenous peoples has been well documented and occurs across many domains. It is premised on the idea of Indigenous peoples “going away” (Veracini 2011:2). This “going away” has been conducted by the federal government through a wide variety of tactics. Some tactics include Indigenous physical elimination through outright slaughter, massacre, and disappearance (Dunbar-Ortiz 2014; Woolford, Benvenuto, and Hinton 2014). Another tactic includes the settler state displacing Indigenous survivors on constrained reservations. Other tactics include the settler state forcing Indigenous absorption or assimilation into U.S. settler society through educational boarding schools, English-only education, U.S. citizenship requirements, renaming and translation of Indigenous terms, global agricultural production ethic, etc. (Tsosie 2001; Bruyneel 2004; Lomawaima and McCarty 2006; Lee 2011; Vázquez 2011b; Risling Baldy 2018; Parry 2019). Another tactic is the settler state bureaucratic genocide of Indigenous peoples by terminating or not recognizing Tribes (Coulthard 2014; Fiske 2004).

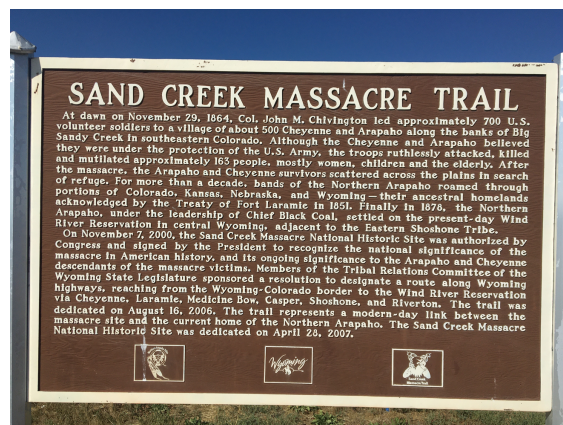


Figure 26: Sand Creek Massacre Trail interpretive sign in Ethete, WY

Today, the U.S. action of physically erasing Indigenous people as it had once overtly commanded, is no longer legal. See Figure 26 for an interpretive sign I came across during my fieldwork that describes the U.S. military massacre of Cheyenne and Arapaho people. Today, we

witness the ongoing logic of erasure as a covert institutional and cultural practice. As depicted in the horse gather fieldnotes presented above, Indigenous peoples and their relations with places now under BLM jurisdiction did not appear to exist to the Public Affairs Officer I spent the day with. Indigenous people were seen as non-relevant and non-present in their ancestral homelands, even when prodded. The peopled history of the place where we watched horses being chased into a corral chute was shrunk to that beginning with European settlers. This is a cultural practice, a form of logic that ignores Indigenous presence and thereby, erases their history.

In this chapter, I'll present data that identifies how contemporary manifestations of the settler colonial logic of erasure occurs within BLM's WHB Program. The main mechanisms by which I saw the logic of erasure occur were through 1) strategic ignorance as erasure, 2) erasure through the overburdening Tribal governments, and 3) epistemological erasure.

Strategic Ignorance as Erasure

Settlers and settler states have always reaped financial and other benefits from the racialization of Indigenous peoples, access to their territories, and the ecologies that Indigenous peoples created. Settler colonial logics of erasure are linked to language that conceptualize "Indigenous people as temporally coeval, modern subjects" (Rowe and Tuck 2017:6). Such as using the term "pioneer" to describe Europeans in the American West. Typically, pioneer means the first person to explore or settle in an area. The use of the term "pioneer" to describe European is a discursive Indigenous erasure logic (Veracini 2011).

The erasure of present Indigenous people is most present in the WHB Program through the justification of the law that protects these species. The Wild Free-Roaming Horses and Burros Act begins with the following paragraph:

“Congress finds and declares that wild free-roaming horses and burros are living symbols of the historic and pioneer spirit of the West; that they contribute to the diversity of life forms within the Nation and enrich the lives of the American people; and that these horses and burros are fast disappearing from the American scene. It is the policy of Congress that wild free-roaming horses and burros shall be protected from capture, branding, harassment, or death; and to accomplish this they are to be considered in the area where presently found, as an integral part of the natural system of the public lands.” (§1331)

The WFRHBA of 1971 identifies horses and burros as symbols, a cultural signal, for the “historic and pioneer spirit of the West”. As discussed above, the term “pioneer” is often used to describe someone who is the first person to explore or settle in an area. In North America, this term is used to refer to white Europeans who first settled in the homelands of Indigenous people.

The historical relevance of horses and burros for white settlement across the American West is not to be taken for granted, for this settlement would have been extremely difficult if not impossible at the time it had occurred without range equines. The WFRHBA of 1971 justifies the protection of these species because of their relevance in white settlement and prosperity across the American West landscape. The justification language presented in this law draws additional assumptions about the American West, that there is an inherent “pioneer spirit” to the landscape. In addition to concern for the continuation of the horse and burro species from “fast disappearing”, they are protected as icons, like naturalist signs that signal their relevance for white prosperity in North America.

Today, those who subscribe to the Rights Narrative for WHB protection also use framing around the pioneer nature of WHB and their role in European settlement. For example, the Wild

Horse Education website refers to wild horses as “our heritage animals”. During one interview, I learned about someone’s family and town’s history with the nearby mustang herd.

When “my great grandpa” founded the “stampede rodeo they used to have horse racing. [They] used some of those mustangs to mix with thoroughbreds. So technically, I guess we are really tied to that herd because he used to actually go out and get some before it was illegal to do so. And actually, he had some that he was creating his own breeding program for a racing horse based on quarter mile tracks here. So that's, that's kind of how we're tied and we've been here in that Western history... there's a deep connection that I think this town sometimes forgets, and that's what I mean, I don't want people to forget history, because it's a big piece. It's a big piece of where [we] got to... when the Indigenous peoples were put on reservations, they were no longer using them. That doesn't mean we [settlers] weren't.” (WHB Activist)

This quote identifies the connection and role that mustangs had played in early settler livelihood and history of their family and the town that they are from. Additionally, this quote provided some recognition of Indigenous relationship with the same horse herd prior to settlers. This relationship was affected by the reservation system and prohibition on gathering horses.

Although there is recognition of mustang relevance to European settlement, there is little to no acknowledgement of mustang relevance to nearby Indigenous Nations within the WHB Program. This is a fascinating logic of erasure given horses relevance to Indigenous survivance in the Great Basin and Intermountain West Regions where herd management areas are currently located. The Shoshone, Blackfeet, Apsáalooke, Nez Perce, Kootenai, Gros Ventres, Cayuse, and many other Tribes had intricate relationships with horses and often traveled with multiple horses

per person (Ewers 1955; Wilson 2009[1910]; Collin 2017). The following screenshots in Figure 27 are from the Tamastsklikt Cultural Institute. They discuss the relevance of horses and knowledge about horse herd management for the Cayuse, Umatilla, and Walla Walla people. Their horse herd management and cultural practices related to the horse were “forced to give up” because of settler colonialism and the allotting of Indigenous lands to private settler holding.

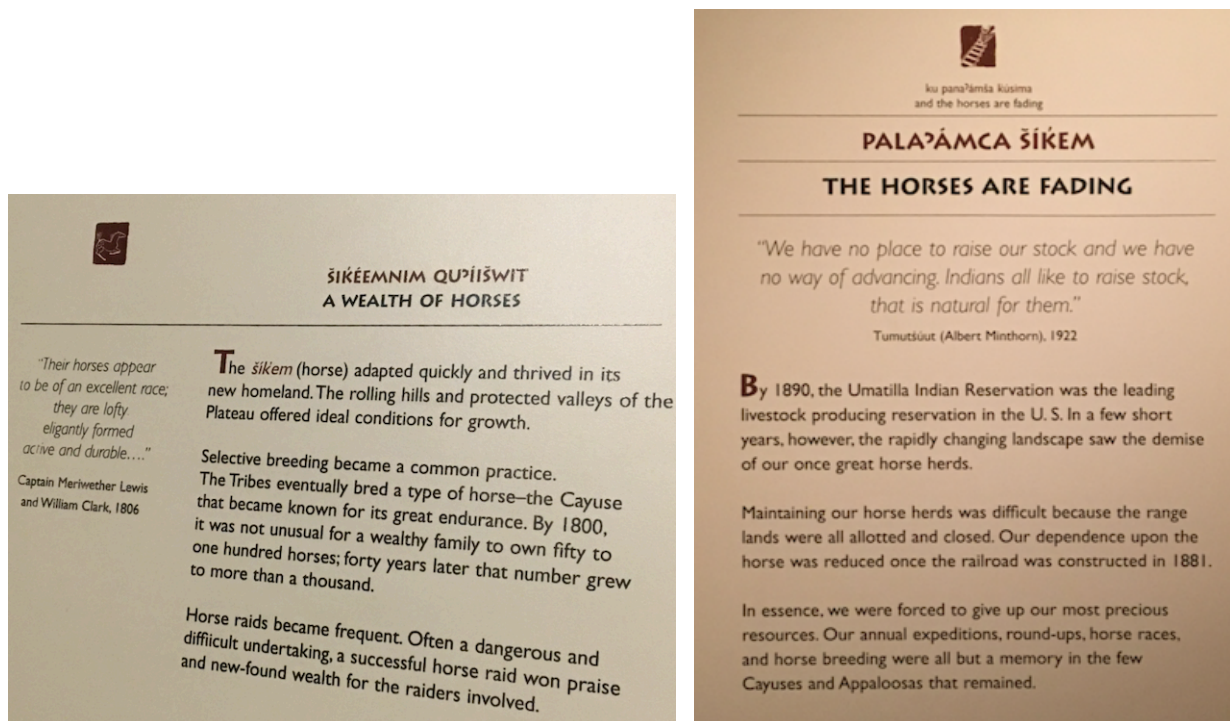


Figure 27: Images of interpretive information about horses at the Tamastsklikt Cultural Institute

One historical record documented that the presence of wild horses near the present-day U.S.-Canadian border was likely the result of horses lost by Indigenous people. “Lazy Boy attributed their [wild horses] origin to strays from Indian camps, domesticated horses that ran off and became wild after large numbers of Indians died in the early smallpox epidemics” (Ewers 2018 [1954]:59). Documentation on the preservation of the Pryor Mountain Mustangs in Montana also identified that they likely had an origin in Tribal horses.

“The Crow Reservation in south-central Montana lies above the Pryor Mountain Complex, and some historians believe that the wild herd is descended from horses stolen or traded by the Crow that later escaped slaughter by the US Cavalry and slipped south into the forests of the Pryor Mountains” (Reed 2015:2).

Some herds stem from those not claimed, but others, as presented above, were a direct outcome of colonization. This lack of acknowledgement within the WHB Program becomes even more stark when reviewing contemporary herd management area webpage descriptions. Each Herd Management Area has a webpage that describes horse genetics of that herd, colors, and sometimes, the settler ranchers that released (or did not claim) the ancestors of the present horses or burros.

None of these Herd Management Area descriptions mention Indigenous horse ownership/relations. The Herd Management Areas located within the Nez Perce Indigenous ancestral lands, for instance, fail to mention their relationship with the horse. The Nez Perce created the Appaloosa breed, a highly desired spotted colored horse. The Challis Herd Management Area in present-day Idaho states,

It is believed that the wild horses near Challis originally started from the livestock miners and ranchers brought to the area around 1870. John Bradbury is the first person known to have introduced horses into what is now the Challis wild horse area. Other early day ranchers frequently released stallions into the herd to improve or upgrade the quality. Additionally, several breeds of work horses were released into the area. Ranchers depended on work horses for their livelihood and therefore bred work stock among the wild horses.

Nez Perce engaged with horses in what is now the Challis herd management area. Although the Challis herd management area and the Nez Perce reservation borders are now far from one another, it is surprising that no herd management area description, even those that border reservations, discuss Indigenous horse practices, management, or breeding. This is a form of erasure of Indigenous peoples and their horsemanship knowledge.

Sociologists recognize that sometimes ignorance happens by chance. Larger social structures constrain settler's awareness about Indigenous people, their history, and contemporary practices due to physical separation, the educational system omitting Indigenous history, not being required to know within the workplace, etc. This can also be referred to as the *structure of colorblindness*, the habitual and normative routines of white people who unintentionally reproduce racial inequality through color-blind discourse (Bonilla-Silva 2014; Mueller 2017).

Sociologists argue that ignorance can also be strategically produced through social processes (Smithson 1985), and the structure of colorblindness is also socially produced. Mills (1997, 2007) refers to this practice as the *epistemology of ignorance*, a process of knowing designed to produce not knowing. Mueller argues that "whites' persistent colorblindness is sustained by a vested commitment to defending the ideological buffer of ignorance" (2017:220). This practice of socially produced ignorance functions within the WHB Program to create erasure of present Indigenous peoples and their knowledge.

On multiple occasions, those who worked for the BLM or WHB Advisory Board identified ignorance about local Indigenous peoples, but communicated, strategically, about other Indigenous peoples' inability to be relevant for the WHB Program. As identified in the fieldnotes at the beginning of the chapter, the Public Affairs Officer, in addition to representing settlers as coeval and first persons, was unaware of local Indigenous peoples and presented

information that challenged the idea that Indigenous peoples are worth engaging because of one Tribe's inability to constrain horses on their large reservation.

One WHB specialist communicated unawareness around Tribal agreements at their field office, but that they are aware of other concerns that settlers have with range horses on reservation in another state. I asked about whether they had any experience working with local Tribes or had any Tribal agreements. They responded,

No, and it really does depend on the area that you're in. Yeah. And if those Tribes truly, you know, if it's the land or if it's the horses or is that you know, is that kind of a sacred place, are horses sacred. [Pause] Here in my district, I do not have any tribal stuff whatsoever. I do know that there are wild horse issues on Tribal lands in other states. For example, the Pryors, you know, butts up right against the Crow Reservation, and the Crow Reservation has a huge wild horse herd, but nothing's being done about it. So there is the fear that people had that 'oh, well, the reservation horses could potentially find the Pryor horses and then start intermingling and they're all freaked out about the genetics and stuff.' And I said, 'Well, if you are really truly concerned about that, you need to talk with the Tribe.' We really don't have any jurisdiction over it... But as far as like my district goes, I have no Tribal Agreements or anything like that. I don't know of any with BLM. I know in Canada, of course they do. But I don't know of any down here. I've never heard of anything. And I think it's just because you know Tribal land and BLM land really doesn't kind of intermingle kind of thing. But I don't know of any but I do know that there is concern about that because they expect us to kind of go out and manage that and it's like no, that's not on us. That's

tribal and they don't have a management system. So that's it's hard but you know, that's kind of the way it is.” (BLM WHB Specialist, 2021)

This WHB specialist communicated a propertyed boundary structural reason for not having any Tribal Agreements. Structurally, WHB specialists are also not required to know about local Indigenous concerns as that is the role of the Field Manager and Archaeologist. “BLM is required to consult with the local Tribes and generally consultation is done with the local managers and archaeologist. I put together materials and others presented them to the Tribes” (WHB Specialist). The reductionist model within federal lands management separates out roles related to consultation and communication with Tribal governments, in part, to protect sensitive cultural information.

However, there is more to this quote than a lack of awareness of local Indigenous agreements. There is a likelihood that there are no local agreements. This quote, like the fieldnotes at the beginning of the chapter identify, that ignorance around Indigenous relevance within the WHB Program is strategic in that the only information that they know about Tribal relevance with wild horse herds is negative. For this case, it is also important to note that horses within the Pryor Mountains likely stem from Apsáalooke (Crow) historical management and that there were no experiences with horses moving from the reservation to the Pryor Mountains, only concern that could occur (Reed 2015).

One employee within the WHB headquarters communicated similar sentiment during our interview.

Q: Do you have experience working with local Tribes on WHB projects? If so, describe.

A: Nope. I think this is a bridge too far, since the tribes have their own horse issues.

In this quote the WHB headquarters employee believed that it is not worth including local Tribes within WHB management discussions, at least at a programmatic scale because some Tribes have reservations with their own wild horse herds. However, not all Tribes do. This is a tactic that both homogenizes Tribes that both have horse herds on their reservations and those that do not, suggesting that they are irrelevant for this program because some Tribes do have their own horse herds.

In 2017 Advisory Board meeting notes, one Advisory Board member, when presented with the idea of trying to identify more partners in the program, including Tribes, asked “if the BLM was aware of the 100,000 excess feral horses on Native American reservations” as a form of justification for not outreaching to Tribes (WHB Advisory Board, 2017:68). Earlier in the meeting, two Advisory Board members discussed the “issue” of “domestic animals that have strayed from Native American reservations onto public lands” (WHB Advisory Board 2017:20). This point argues that partnering with Tribes is not relevant because of some Tribes, or Tribal members, inability to constrain roaming horses on their reservation. In later Advisory Board meetings, the idea of partnership came up again, however, there was no follow-up on these matters.

These arguments for not partnering with Indigenous people erases their current worth within WHB discussions and management suggestions. This type of strategic ignorance, choosing to only know information that is negative and derogatory, creates erasure outcomes. One such erasure outcome is excluding Indigenous representation in the WHB advisory board. This acts as a contemporary institutionalized and cultural mechanism of erasing present

Indigenous people within the WHB Program. It additionally homogenizes all Tribes and their intertribal relations. For example, there is a WHB public off-range pasture located on the Wind River Reservation. Even though this reservation already has range equine herds (Lezak 2021), this pasture, operated by a Navajo family has been successful at adopting out BLM horses and has proven to be an effective partner for the BLM's WHB Program ³³.

Although members within the WHB Program largely perpetuate a strategic ignorance of present Indigenous peoples and their relevance within the WHB, I did talk to one WHB Specialist who actively worked with Tribes and communicated information about management of roaming horses on reservation lands.

I worked pretty closely with the [Reservation]. We had, we had one [herd management area] that bordered the Res. Not a very big area, but we had a couple times some issues there. The Res sometimes would catch [BLM] horses, and some of those horses were freeze branded. So, I would go to their pens and figure out if they were titled or not. And then they'd asked for input, and you know, help on how to do things. So, there's been interaction... I tend to talk to their leadership about how to manage, you know, how to, how to, how to manage their population, what we do, explain to them (WHB Specialist).

This quote identifies that there are occasions in which BLM horses roam onto reservation lands, which also have been reported to occur in other states, and that this BLM WHB personnel chose to have meaningful engagement with a Tribe located near their field office to discuss herd management strategies.

³³ <https://www.windriverwildhorses.com/>

After supporting multiple agencies and Tribal governments with range horse management, they also suggested re-organizing the WHB Program to mimic the organization style of the National Interagency Fire Center. This type of program-specific central organizational format would also support “all agencies that have lands that have horses” (BLM Headquarters), including Tribes with reservations. In this proposed model, the BLM would need to work in concerted effort, communicate and consult with Tribal governments. This could prove to be a step towards developing relations and awareness by those who work for the WHB Program about Indigenous knowledge, needs, and overall recognition.

Erasure Through Overburdening and Tokenization of Tribal Governments

The second mechanism by which I found the settler colonial logic of erasure occur in BLM’s WHB Program was through the overburdening of Tribal governments in the legal process of U.S. federal agency formal consultation requests. The frequent practice of notification with the option for consultation meetings creates an outcome of overburden, especially for smaller Tribes/Nations. Tribes/Nations often do not have the necessary resources to meaningfully respond to all U.S. federal agency requests. The amount of work required to meaningfully respond to frequent U.S. federal agency project notifications results in non-response, an outcome interpreted by those within the BLM as Tribal/Nation acquiescence to project plans. This creates an outcome of erasure of Indigenous perspectives on BLM WHB management because Tribal Governments do not have the resources to meaningfully respond to all requests received. In the following section, I discuss this process through provided documentation in BLM WHB project planning Environmental Assessment documents about their consultation. I pair this data with

interviews with both BLM staff that work in field offices and Natural Resource Directors that work for Tribal Governments as they discuss their experiences with consultation.

As discussed in the previous section, there is strategic ignorance by many within the WHB Program related to Indigenous relevance. However, when looking at WHB project planning, which is partially informed by field officers and archaeologists, those tasked to engage in consultation with Tribal Nations, we find a more robust awareness of Tribal Nations in proximity to or whose ancestral lands are now managed by that field office engaged in WHB project planning. Figure 28.1 represents some Indigenous recognition in BLM WHB Environmental Assessments (EA) publicly accessible on BLM's Eplanning website³⁴. Figure 28.1 identifies that of the 92 publicly accessible final EAs, 79 (85.9%) communicate any mention of Indigenous Nation concerns or consultation, and only 56 (60.9%) of these EAs mention a specific Indigenous Nation. For all WHB projects that result in an EA planning document, the BLM is required to engage in Nation-to-Nation consultation. Although not all EAs mention that they do this engagement, it is beyond my purview to argue that it did not occur. They could have engaged in that consultation outreach, but did not report it in their EA.

³⁴ https://eplanning.blm.gov/eplanning-ui/search?filterSearch=%7B%22states%22:null,%22projectTypes%22:%5B6%5D,%22programs%22:%5B%22WILD_HORSES_BURROS%22%5D,%22years%22:null,%22open%22:false,%22active%22:true%7D

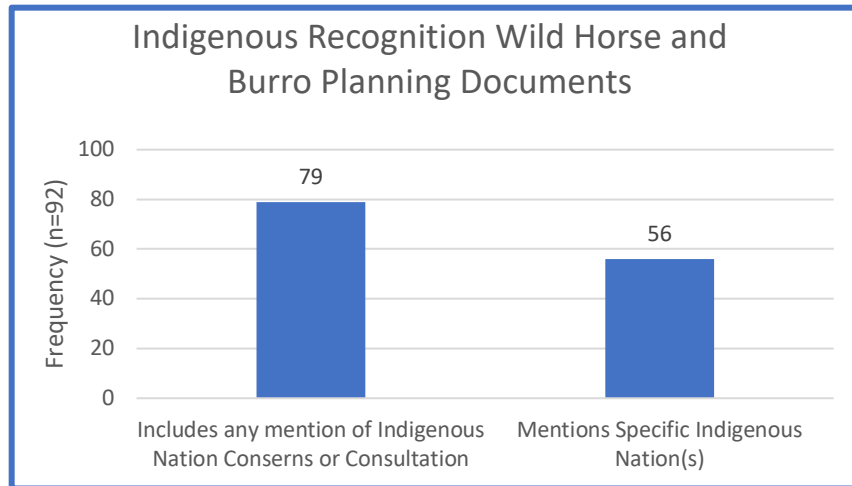


Figure 28.1: Indigenous recognition in WHB planning documents from 2002, and 2008-2021

At best, this inclusion in EA management documents appears as cultural archaeological inventory, such as in the Figure 29 screenshot, which identifies the prevalence of inventoried cultural resources within the Pine Nut Herd Management Area, dating back 10,000 years.

Approximately 13% of the Pine Nut HMA has been subject to cultural resources inventory, resulting in documentation of 400 cultural resources sites, of which about 10% are historic properties. Based on this sample, between 1,000 and 3,000 cultural resources sites are likely present in the HMA, including hundreds of historic properties. Cultural resources in the Pine Nut HMA include evidence of Native American hunting, plant gathering, tool making, and habitation over the past 10,000 years. Cultural

Figure 29: Description of Indigenous cultural resource inventory in the Pine Nut Mountains Wild Horses Environmental Assessment (2016:61)

This Indigenous recognition can also appear as traditional homeland rights to the places for which the BLM now manages horses. For example, this screenshot from the Black Mountain and Hardtrigger herd Management Area planning documents identifies that the Shoshone-Paiute Tribes within the Duck Valley Reservation never ceded their rights to the places now that the U.S. government manages horses. See Figure 30 for a screenshot of these rights documented in a WHB Environmental Assessment.

Southwest Idaho is the homeland of two culturally and linguistically related tribes: the Northern Shoshone and the Northern Paiute. In the latter half of the 19th century, a reservation was established at Duck Valley on the Nevada/Idaho border west of the Bruneau River. The Shoshone-Paiute Tribes residing on the Duck Valley Reservation today actively practice their culture and retain aboriginal rights and/or interests in this area. The Shoshone-Paiute Tribes assert aboriginal rights to their traditional homelands as their treaties with the United States, the Boise Valley Treaty of 1864 and the Bruneau Valley Treaty of 1866, which would have extinguished aboriginal title to the lands now federally administered, were never ratified.

Figure 30: Description of Indigenous traditional homeland rights in the Black Mountain and Hardtrigger Herd Management Area Capture, Treat, Release, and Removal Environmental Assessment (2012:4)

At its worst, and which is the primary tactic of the EAs that recognized Indigenous peoples, but not specific Tribes/Nations, was to include a brief mention of non-impact to “Native American Religious Concerns”. The following screenshot in Figure 31 provides an example of this practices. When such information is communicated in an EA, the BLM does not provide any justificatory statements on the lack of impact.

Supplemental Authorities	Present	Affected	Rationale
Native American Religious Concerns	NO	NO	There are no known Native American Religious Concerns regarding this project.

Figure 31: Identification of no known impacts to Native American Religious Concerns regarding WHB management in the Barren Valley Complex Population Management Plan Environmental Assessment (2019:12)

These examples of Indigenous recognition within WHB planning documents paint a picture of the cultural relevance of including Tribal Nations in planning as required by law. According to a 2004 BLM Handbook, inclusion operates to

“...help assure (1) that federally recognized tribal governments and Native American individuals, whose traditional uses of public land might be affected by a proposed action, will have sufficient opportunity to contribute to the decision, and (2) that the decision maker will give tribal concerns proper consideration” (H-8120-1)

Until the newer Manual 1780 that was passed in 2016, superseding this Handbook 8120, BLM outreach to Tribal Nations were primarily concerned about cultural resources rather than considering Tribal Consultation as knowledgeable actors in improving resource management. This practice, focusing primarily on cultural relevance, was the tactic I witnessed almost exclusively in WHB planning documents – note that many of those documents predated 2016. In 2022, the federal government signed a memorandum for all federal agencies to recognize the value of and include Indigenous Knowledge within decision-making³⁵. Due to the timeline of this project’s data collection, I am unable to see how the outcome of such memorandum impact future WHB planning project, and am only able to speak about what was submitted by July of 2021.

After identifying Indigenous recognition in WHB planning EA documents, I then looked at how many mentioned that they engaged in consultation with Tribal Nations (59, 64.1%) and of those, which Indigenous Governments were listed as providing feedback through consultation mechanisms (16, 17.4%) as visible in Figure 28.2. What we see here is a stark decline in the number of EAs that mention that they had engaged in consultation with Indigenous Nations with those that documented that Indigenous Nations provided feedback of some kind during consultation, whether that specific feedback was recorded or not. This includes the documentation of consultation meetings.

³⁵ [chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf](https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf)

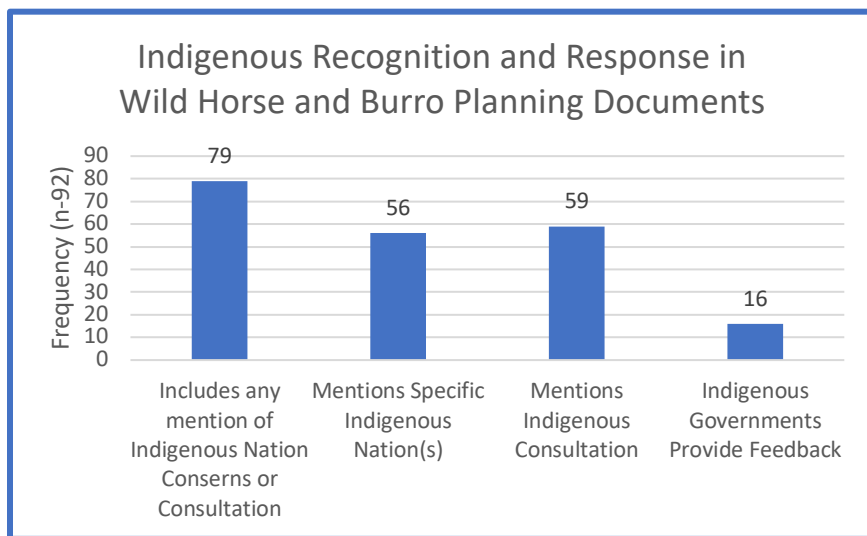


Figure 28.2: Indigenous recognition and response in WHB Planning documents from 2002, and 2008-2021

In EAs that did not receive feedback, they often reported that “no comments were received” such as visible in Figure 32. In this EA, the BLM identified which Tribes/Nations were outreached to and that they did not receive any feedback.

6.0. Tribes, Individuals, Organizations, or Agencies Consulted

A Tribal Coordination letters was sent on May 12, 2011 to the tribes listed below, notifying them of the proposed action and to solicit comments within 30 days of the date of the letter.

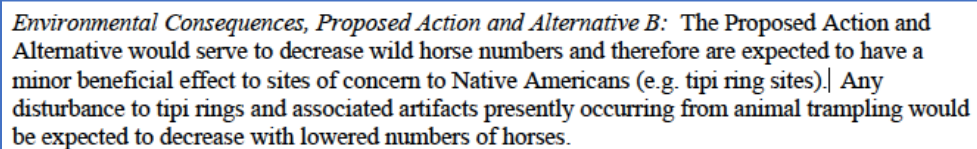
Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Ely Shoshone Tribe	Tribal Consultation and Coordination	No comments were received
Paiute Indian Tribe of Utah	Tribal Consultation and Coordination	No comments were received
Moapa Band of Paiutes	Tribal Consultation and Coordination	No comments were received
Duckwater Shoshone Tribe	Tribal Consultation and Coordination	No comments were received
Indian Peaks Band of Paiutes	Tribal Consultation and Coordination	No comments were received
Cedar Band of Paiutes	Tribal Consultation and Coordination	No comments were received
Confederated Tribes of the Goshute Reservation	Tribal Consultation and Coordination	No comments were received
Shivwits Band of Paiutes	Tribal Consultation and Coordination	No comments were received

Figure 32: List of Tribal Coordination in the Bailey Springs Development Environmental Assessment (2014:16)

During interviews with BLM personnel, it appeared as though they were knowledgeable about Indigenous outreach, that the BLM was filling its role and responsibilities, but that Tribes don’t communicate back.

In majority WHB EA documents that mention consultation without Indigenous response, they either do not mention Indigenous response or communicate that none was received. In the remaining WHB EA documents that mention consultation without Indigenous response, the BLM identifies that “the Tribes did not identify any issues” (Silver King Herd Management Area Environmental Assessment (2017:85) or “[t]he Tribe has not responded identifying any concerns. Lack of response is interpreted by the BLM to indicate that the Tribe has no concerns relative to the proposed action” (Spay Feasibility and On-Range Behavioral Outcomes Assessment 2018:132). Even if Tribes/Nations did not respond to BLM WHB project notifications and consultation opportunities, that does not necessarily mean that they consent or are acquiescent with BLM’s proposed project. Such interpretation has the potential to erase Indigenous perspectives on BLM management activities.

When there isn’t Indigenous response, the BLM has assumed that WHB gathers, or other BLM proposed management techniques benefits the preservation of Indigenous cultural sites because there will be less horses cumulatively across a management area and less chance of horse trampling. The following Figure 33 provides a screenshot of what this justification looks like in WHB EA documents.

A screenshot of text from an Environmental Assessment document, enclosed in a blue rectangular border. The text reads: "Environmental Consequences, Proposed Action and Alternative B: The Proposed Action and Alternative would serve to decrease wild horse numbers and therefore are expected to have a minor beneficial effect to sites of concern to Native Americans (e.g. tipi ring sites). Any disturbance to tipi rings and associated artifacts presently occurring from animal trampling would be expected to decrease with lowered numbers of horses."/>

Environmental Consequences, Proposed Action and Alternative B: The Proposed Action and Alternative would serve to decrease wild horse numbers and therefore are expected to have a minor beneficial effect to sites of concern to Native Americans (e.g. tipi ring sites). Any disturbance to tipi rings and associated artifacts presently occurring from animal trampling would be expected to decrease with lowered numbers of horses.

Figure 33: Description of Indigenous benefit to BLM proposed herd management area action in the Sand Wash Basin Herd Management Area Population Control EA 2016:35

However, this assumption has not been scientifically studied. Assuming Indigenous Nations benefit from BLM WHB management activities, especially when the Tribe/Nation did not provide information on the project is a tactic that uses cultural resource justification for

supporting agency-decided projects and ultimately results in erasure of Indigenous knowledge and perspectives on the topic.

When I interviewed a Natural Resource Director from a small Tribe/Nation, they identified challenges that their Tribe faces for providing feedback to U.S. consultation requests.

“When Tribes communicate, we meet face-to-face. I recommend face-to-face communication with enough time to review information. Whenever [U.S.] consultation is requested, we receive letters and notifications, which is legally required. However, we are asked to respond within 30 days... it sounds like a lot of time, but it is not a lot of time to fully digest and determine whether we want consultation or not... It is difficult to keep up because we receive on average about 1-2 a week. Whenever we ask for face-to-face requests, they are always granted. I recognize that these government agencies are strapped and have their own time limitations but do need the agencies to do better to engage our Tribe.”

(Non-Indigenous Nation/Tribe Natural Resource Director)

In this quote, the person responsible for communicating consultation requests with Tribal Council and providing feedback to the BLM is unable to meaningfully keep up with the multiple requests that they receive. This is because each U.S. notification requires additional research work, such as determining how close project plans are to reservation lands. Tribes/Nations must often choose which project notifications to respond to. BLM WHB projects may be responded to less because they appear less pressing than other natural resource extraction projects common in the BLM. Additionally, for Tribes whose Council meets once a month, a 30-day response period may not provide the needed flexibility for Council review and response to the BLM. Although

the option is available to request formal consultation, Tribes/Nations may not have enough time to determine whether they need to engage in consultation.

When I discussed consultation practices with a BLM field office staff, they mentioned that although Tribes/Nations want face-to-face communication, as similarly identified in the above quote, the BLM doesn't always support such.

“We try to work with Tribes. Sometimes that's a really hard one-way communication because [Tribes] don't want to tell us, you know, where important things are and sometimes they want to do face-to-face. And then the [U.S.] government says all well, we can't provide money for that. Come on, you got to.”

(BLM Field Office Staff)

In this case, the field office is located further away from reservation lands and travel to consult is not always supported. This has an impact on meaningful consultation and relationship building between the BLM and Tribal Governments. As one non-Indigenous Tribal Natural Resource Director stated during our interview, “a one-hour webinar is not consultation” (2022).

This data presents concerns about how consultation is interpreted and implemented legally by the BLM in their WHB projects. Although there is some recognition of Tribes/Nations in project planning, U.S. federal consultation by notification is not supported in a way that provides the opportunity for Tribes/Nations to meaningfully respond to all requests, either due to the sheer number of requests received, the required research and reviewing of project plans to determine impact or relevance, or due to the timeline required for response. This leaves many project plans disregarded due to a lack of bandwidth, especially small Tribe's. The lack of response is often interpreted by the BLM to mean acquiescence to project plans. Tribal Governments are unable to keep up with the bombardment of projects from multiple U.S.

agencies regarding different resources and environmental planning. This creates an erasure outcome, through the overburdening of Tribal Governments in consultation requests.

Sociologists consider the practice of incorporating a numerical minority, individual, or group from marginalized backgrounds into spaces of majority non-marginalized group for the purpose of symbolically appearing that both marginalized and non-marginalized people are treated equally as tokenism (Kanter 1977; Flores 2011). Most research on this topic explores workplace contexts. However, this research presents a case of how tokenization occurs through the relationship between separate entities that are tasked to communicate with one another. The token practice within natural resource management across separate entities has been explored in Australia (Edgar 2013), Sweden, and Italy (Monno and Khakee 2012). In these studies, tokenistic consultation practices are legally implemented and difficult to safeguard against and require that presented concerns are taken into account. Within the U.S. context, scholars have explored how environmental justice collaboration within environmental governance can result in outcomes of marginalization. In the experience of overburdening of small governments or Natural Resource Directors through many consultation requests without the necessary support to respond, we see a similar practice of legal Indigenous tokenism through overburdening few in a representative form. It is important to note that tokenism, to some extent, does “gain access to white controlled resources” (Delgado 2016:693). In the case of Government-to-Government consultation requests, tokenism grants access to a unique communication platform with the BLM. However, the concern for many engaged in this process, is the primary symbolic meaning behind such engagement.

This outcome is easy for the U.S. federal government to better address. In fact, the U.S. government has recently created new models for Tribal Co-Management of shared lands and

waters³⁶ as well as requiring the inclusion of Indigenous Knowledge within decision-making³⁷, signed in 2021 and 2022, respectively. Suggestions for improving the tokenization inherent in the current consultation process, the U.S. state should provide the resources necessary for the BLM to engage in formal consultation, such as travel to face-to-face meetings. Congress should also provide the resources necessary for Indigenous Nations to respond to consultation, which could include paying for multiple people to be able to inhabit those roles within Indigenous Nations. However, any recommendations should follow a true relationship-building practice and be responsive to Indigenous needs and concerns, which may differ between the Pacific and the Atlantic Coasts.

Epistemological Erasure

Sociological research on erasure has focused on the lived experiences of transsexual and transgender people (Namaste 2000), as a translation tactic of colonialism (Vázquez 2011b), and through epistemic state oppression (Schindel and Colombo 2014). Erasure of people, knowledge, and places occur through state violence and oppression. “The epistemic territorial practices are such that all that lies outside their realm is made invisible, is excluded from the real and is actively disdained, even unnamed... The practices of translation have been instrumental for epistemicide” (Vázquez 2011b:30). Epistemicide is the destruction of people’s existing knowledge, a requirement of modernist and colonialist taking over of thought of conquered

³⁶ chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3403-joint-secretarial-order-on-fulfilling-the-trust-responsibility-to-indian-tribes-in-the-stewardship-of-federal-lands-and-waters.pdf

³⁷ chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf

people (Santos 2014). The perpetuation of settler philosophy and epistemology, for instance, reduce awareness that there may be non-settler interpretations, experiences, reality (O'Brien 2006). Colonialism, modernity, and state violence have reinforced and recreated what is *real* through translation and naming (Vázquez 2011b), and through the changing social production of spaces (Schindel and Colombo 2014). Settler colonial scholars argue that this practice and tactic of erasure did not end during initial colonization but is ongoing.

In WHB EA documents, it is apparent that the BLM dismisses Indigenous Knowledge when presented. Agency bureaucracy and U.S. federal policy, in this case, operate as power in delegitimizing Indigenous Knowledge, resulting in epistemic erasure. BLM policy and protocols are not easily responsive to suggestions presented by Indigenous peoples during Government-to-Government consultation. Although the vast majority of epistemicide against Indigenous peoples occurred during the first few centuries of colonization, it continues to occur in U.S. federal agency responses to Indigenous Knowledge. This delegitimization of Indigenous Knowledge, perspectives, suggestions, etc. reinforces settler-state interpretations of reality (philosophy) and how we know that reality (epistemology). I found this practice to occur when reviewing WHB EAs. Figure 28.3 is a chart that outlines of the few times when Indigenous Governments did provide feedback and engage in consultation in response to the proposed management plan, only half of those cases the BLM incorporated their feedback (including those in which the consultation resulted in project approval).

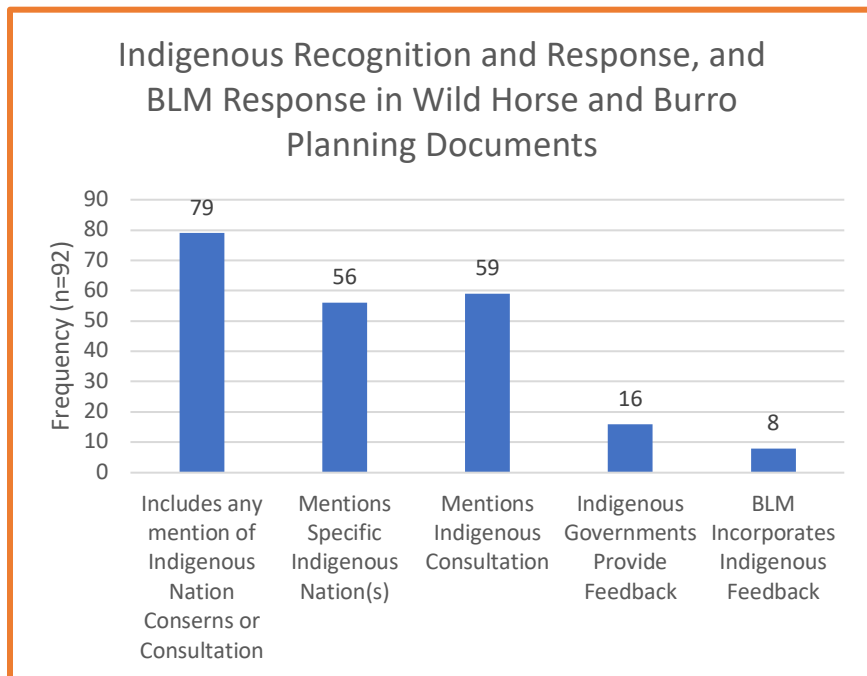


Figure 28.3: Indigenous recognition and response, and BLM response in WHB planning documents from 2002, and 2008-2021

The cases when the BLM did incorporate Indigenous feedback during consultation tended to occur when there were concerns around cultural resources or support for gather operations. For example, during the construction of a privately-owned off-range pasture in Iowa, the ranch operator is required to document and follow the respectful protocols related to prehistoric sites and artifacts. This is not a requirement for anyone holding private property, however, when the U.S. federal government is contracting out private places, the private landowner is legally required to be responsive to these policies. Below is Figure 34, a screenshot from the Iowa EA.

however, they are concerned that the “operator” of the Ranch would not have sufficient training to recognize prehistoric sites or artifacts should they be discovered. In a phone call and email follow-up with Cheyenne St. John, Lower Sioux Tribal Historic Preservation Officer, conducted on October 21st, 2016, the NSD archeologist confirmed that a BLM archeologist would conduct training with all individuals associated with the project for artifact and site identification (see Consultation and Coordination). The Osage Nation concurred that the project will not adversely affect any sacred properties and/or properties of cultural significance to the Osage Nation.

Figure 34: Description of BLM incorporation of Indigenous concerns in the Iowa Off-Range Pasture EA (2016:19)

In this case, the BLM archaeologist provided training to those involved in the off-range pasture project for artifact and site identification. However, there is no information provided on follow-up to such training or enforcement. Additionally, there is the potential that any Indigenous cultural significance has already been manipulated or removed from the private property prior to the contract with the BLM.

In the cases when Tribal Governments support horse gather operations, it is unclear whether such support is directly tied to BLM's gather management plan, or if there is desire for more or all horses removed. One non-Indigenous Tribal Natural Resource Director discussed the position of their Tribal leadership on range horses and suggested eradication.

“[T]he sage grouse, like the Lahontan Cutthroat Trout, is another keystone species for the Tribe. The horses have an impact on the vegetative resources that sage grouse are dependent on. The Tribe is really interested in conservation and preservation of all native wildlife species within and near the reservation. This is important for both fishing, hunting, and traditional practices with plant vegetative species. The deer, antelope, and birds are also important. Therefore, protecting the springs is important so that these other species have water access.

The Tribal leaders think about ‘good’ and ‘bad’ wildlife, where the horses are seen as ‘bad wildlife’. To be honest, I am biased against horses. I have worked for a long time for native fisheries and have seen detrimental impacts from horses on riparian areas, especially impacts on cutthroat trout. So, I don't have much sympathy for horses...

[Horse] eradication, if possible. Remove them completely from the landscape.

Across the board, feral horses have significant impacts on aquatic and vegetative resources. This is a primary concern with climate change resilience for hotter and dryer conditions. Having them removed makes the landscape overtime more resilient to climate change.” (Non-Indigenous Tribal/Nation Natural Resource Director)

This quote identifies the importance of native wildlife, vegetation, and spring protection for the Tribe that the Natural Resource Director works for. In this case, feral horses are understood as “bad wildlife” that have detrimental impacts on springs and wildlife beings that Indigenous peoples are connected to through food and traditional practices. Speaking from their own experience in the region where the Tribe’s reservation is located, they suggested eradication, especially allowing these ecosystems to develop a more effective resilience to climate change.

Figure 35, a screenshot from a gather plan in Northwest Nevada that identifies Tribal Government consultation feedback, presents an example of when there is support for horse gathers. This consultation feedback not only communicates support for horse gathers, but also that horses impact cultural resources and riparian areas and that the number of horses that BLM manages should be reduced. I am not able to speak directly to Susanville Indian Rancheria nor Pit River Tribe desired management of horses, however, it is clear through these brief statements included in WHB EA documents, that range horses are “non-native”, impactful, and not desired by these two Tribal Governments.

- Susanville Indian Rancheria: 01/28/2020 (in-person meeting) and 07/29/2020 (conference call); Comments made during meetings indicate that SIR supports horse gathers, such as the Surprise Complex Gather and the Tribe feels that because the horses are non-native and damage cultural resources and riparian areas the horses should be gathered. No other more gather-specific comments were received.
- The Pit River Tribe: 02/06/2020 (in-person meeting) and 07/28/2020 (Zoom call); The Tribe wants to be informed and involved in all gathers, and is supportive of BLM gathers and reducing the number of wild horse and burro currently on public lands in a broad sense. No other gather-specific comments were received.

Figure 35: Indigenous consultation support for horse gather management in the Surprise Complex Wild Horse and Burro Gather Plan EA (2021:72-73)

This feedback puts into perspective the scale at which Indigenous consultation can be integrated within the BLM. Indigenous desire for reduced horse impacts is seen by the BLM as supportive of BLM gathers. However, these comments could be asking for more gathering and further reducing numbers of horses. Does the localized Indigenous perspective of horse presence and management matter in BLM's WHB Program? The WFRHBA of 1971 was passed without Indigenous perspective and continues to operate with little consideration. There appears to be a scale mismatch between sphere of control/change that can be responsive to Indigenous consultation with the BLM. For example, the removal of horses is not easily implementable by a district. This is another way in which the settler colonial logic of erasure is evident in the WHB Program. Indigenous perspectives and management goals are constrained by U.S. federal laws.

When reviewing the cases in which the BLM chose to not incorporate Indigenous feedback during consultation, we can see the logic of erasure present even within BLM scales of change. Within the cases that the BLM does not incorporate feedback, they respond to Indigenous consultation in a way that denies its worth and acts as epistemological erasure. For example, the Burns Paiute Tribe was recorded in the Stinkingwater HMA Population Management EA to be concerned about overgrazing of an important root gathering and hunting area. See Figure 36 for a screenshot of this consultation feedback. Remember, the Stinkingwater

herd management area is currently located where the Malheur Reservation used to be, and where Indigenous people had come to gather for generations.

The Burns Paiute Tribe, the primary user of the Stinkingwater Pass gathering area, has complained of livestock (presumably cattle and, possibly, horses) eating the roots and disrupting the gathering process. The Burns District Archaeologist has only seen evidence of livestock eating roots once in his multiple monitoring trips every spring in the last 22 years.

Figure 36: Burns Paiute consultation concerns of overgrazing in the Stinkingwater HMA Population Management Plan EA (2017:59)

As present in the above screenshot, the BLM archaeologist, who is the field office staff tasked to work with local Tribes/Nations, primarily on cultural artifacts, is tasked with monitoring vegetation. This is problematic because archaeologists are not trained to identify overgrazing. Additionally, this signifies a case when Indigenous consultation is provided, and by BLM perspective is communicated as incorrect. Here, a Tribal Government communicates concern over livestock overgrazing of culturally sensitive species and the BLM says, through archaeologist assessment, that they have only seen livestock eating these roots once and are therefore not impactful. However, livestock could be grazing on these foodstuffs when the archaeologist isn't present. Additionally, there could exist an epistemological mismatch between how the Burns Paiute Tribe and the BLM understand what "overgrazing" means and looks like. The U.S. government's perspective, however, engages in power to deny Indigenous consultation when presented. This results in epistemological erasure of Indigenous knowledge about the health of a culturally sensitive vegetative species.

The option for taking seriously this Indigenous consultation is within the sphere of BLM district office power. Shortly later in the same EA, the BLM presents information on how they engaged in systematic monitoring through restricted plots. See Figure 37 for a description of their short-lived monitoring attempt.

Thirteen monitoring plots were set up in 1998 to monitor root population levels but were only used for 2 years in 1999 and 2000. No shift in root population numbers was noted during the 2-year period. With monitoring supposed to occur at the same time every year, the minor annual variations in population numbers can be attributed to changes in the local weather, especially during early spring.

Figure 37: BLM monitoring of Burns Paiute culturally sensitive species in the Stinkingwater HMA Population Management Plan EA (2017:60)

This description present in the EA identifies that the BLM made a two-year attempt to monitor root population numbers. Two years is a short duration to research vegetative changes through livestock restriction. Additionally, the BLM communicates its own uncertainty with the data because of spring weather variation. Partnering with the Burns Paiute Tribe, learning from their ontological perspectives about overgrazing, collaborating in root assessments, and even restricting livestock in areas of Indigenous cultural relevance, etc. are within the scale of BLM District decision-making.

Another example of the BLM not incorporating Indigenous consultation feedback within WHB management, resulting in the epistemological erasure of Indigenous Knowledge, relates directly to horse herd management. The Shoshone-Paiute Tribes of the Duck Valley Indian Reservation, located on the border of present-day Idaho and Nevada is within a 50-miles of the Saylor Creek herd management area. The bands of the Duck Valley Reservation utilize the lands for which the Saylor Creek herd management area is located within the Snake River Plains³⁸. Additionally, these bands have kincentric relations with the horse, developing knowledge of horse population management prior to European settlement in that region.

During two Shoshone-Paiute Wings and Roots meetings, they presented suggestions for BLM horse release plans post-gather. See Figure 38 for a screenshot of the discussion of

³⁸ <https://www.youtube.com/watch?v=AnTaYEsXWak>

consultation in the Saylor Creek gather EA. The two suggestions included releasing the best horses back to the herd management area after gather, likely to improve the herds horse stock, rather than saving the best horses for adoptions and sales. The second suggestion was to release only one to four studs (in-tact stallions) rather than the BLM decided 25. Both of these suggestions, which could have the potential to improve the herd's socially desired appearance as well as the potential to reduce foaling rates (number of horses born each year) were dismissed because they did not align with current BLM scientific research and policy.

This project was presented and discussed at the Shoshone- Paiute Wings and Roots meetings held on March 31, 2019 and April 18, 2019. At the April 18, 2019 meeting the preliminary EA was provided to the tribal members and the BLM asked for their comments. Two comments were received at the meeting pertaining to the preliminary EA. The Tribe expressed concern with the BLM horse selection process, believing that the best horses are not released back to the range, but instead enter the adoption and sale program. The second concern expressed was that one to four studs should be released instead of 25. The authorized officer explained the scientific basis for the selection process and the number of stud horses to be released. The BLM manages wild horses based on scientific research and policy, therefore no changes were made based on the comments received at the meeting.

Figure 38: Shoshone-Paiute Tribes of the Duck Valley Indian Reservation consultation feedback and BLM dismissal for the Saylor Creek Herd Management Area Wild Horse Bait and Water Trap Gather EA (2019:35)

BLM scientific modeling suggests a herd sex ratio of 50:50, or in their policy, favoring more stallions. However, the agency did not explore modeling or management alternatives based on the Shoshone-Paiute of the Duck Valley's Indigenous Knowledge. I am left to wonder how their suggestions could have impacted the future population of the Saylor Creek herd. This, although differing from current BLM WHB management practices, is still within BLM management jurisdiction. They could have explored this management approach and studied its outcomes. Rather, the BLM chose to not incorporate Indigenous consultation when provided resulting in epistemological erasure of Indigenous Knowledge when presented to the BLM.

Considered does not necessitate incorporation. Considered, for the BLM, is an acknowledgement of the suggestion and an assessment of whether it fits into current policy and practice. If it is not incorporated, it is often denied worth. This has the capacity to result in

epistemological erasure of Indigenous Knowledge and limit the scope of potential options for WHB management. As Simpson (2004) argues, to coerce Indigenous Knowledge to conform to the rules of colonial power structures, denigrates and attacks the nature of Indigenous Knowledge, which is rooted in place and multi-generational transmission. Published studies are always limited in their temporal and geographic scope, so generalizations from published research may have limited validity in specific environments. Hence, local TEK may have insights that are not covered in the published literature.

When formal consultation results in limited response beyond BLM review of concerns and suggestions, the efficacy of such consultation is diminished and may lead to future Indigenous disinterest in consultation, burnout, and feelings of disrespect. This ultimately results in erasure of Indigenous knowledge, which is concerning given the relevance of Indigenous knowledge of North American ecosystem processes and species, which long predates that of settlers. Additionally, this presents challenges for the future of the Executive Memorandum for inclusion of Indigenous Knowledge within federal agencies³⁹. How can Indigenous Knowledge be included when it is not easily situated within the settler conventions of federal lands management? True consultation would update such conventions to be reflective of Indigenous peoples and their knowledge. In these cases, they are devalued, and their knowledge is actively being erased by the BLM.

³⁹ [chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf](https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf)

Conclusion

I have always believed that ancient tribal cultures have important lessons to teach the world – lessons of interconnectedness of all living things and the fact that our very existence is dependent on the world we seem to be destroying. We are not a thing of the past. We are not extinct. Our languages are still strong, ceremonies that we have been conducting since the beginning of time are still being held. Our governments are still surviving, and most importantly, we continue to exist as distinct groups in the midst of the most powerful country in the world. But we long to be heard and recognized. We have a culture and history that our troubled world needs that will instill values and ideals that speak to the heart and soul.

(Parry 2019:99).

Indigenous Knowledge about horses has been suppressed by the U.S. settler state for centuries. Given the current horse and burro herd management challenges that the BLM faces, beginning to embrace Indigenous peoples and their knowledge might likely prove relevant for improving the WHB Program, and provide more solutions outside of the current “toolbox”. However, Indigenous perspectives, personhood, and knowledge are still being erased through strategic ignorance, the overburdening and tokenization of Tribal governments, and through epistemological erasure. Together these forms of erasure, justified through the homogenization of Indigenous people, formal government notification requirements with little action requirements, and BLM philosophy and epistemology, respectively, result in ongoing manifestations of settler colonialism.

There is still much uncertainty in the scientific literature due to uncertainty, constant change, and study scope limitation. Thus, other knowledge and ways of knowing can be valuable

for filling in gaps, expanding perspective etc. Many disputes about management decisions may be masked as being about science when they are largely about values and preferences. This is the underlying concern for Indigenous peoples, which is related to sovereignty, the question of *who* gets to make decisions.

CHAPTER 7: CONCLUSION

“Indigenous peoples hold real technological, epistemological, social structural, moral and ecological alternatives to dominant capitalist and colonial systems that are critically needed to respond to ecological crises today (Fenelon 2015a, 2015b)... the crises of capitalism, environmental decline, and now climate change are a product of five hundred years of colonialism... The intertwined forces of colonialism, capitalism, racism, and sexism have colluded to obstruct reception of Indigenous voices. To that end, attention to and theorizing of the existing *Indigenous alternatives to global crises* forms a central element of the needed direction... now would be a good time to listen” (Norgaard and Fenelon 2021:489-90, emphasis in original).

This dissertation contextualizes a modern federal animal/environment management dilemma within the recent social-ecological history of settler colonialism in the American West. This dissertation is aimed at identifying social-historical causes of federal lands management decisions connected with the WHB Program. I theorize that settler colonialism informs the locations and ways in which range equines are managed today. I show this through an examination of settler governmentality and biopolitical control, propertied boundaries, settler ecologies, and erasure.

As symbolized by range equine protection, it is this colonial history in the American West that settlers aim to protect. As Nixon declared when signing the WFRHBA of 1971, “Wild horses and burros merit man's protection historically--for they are a living link with the days of the conquistadors, through the heroic times of the Western Indians and the pioneers, to our own day when the tonic of wildness seems all too scarce. More than that, they merit it as a matter of ecological right--as anyone knows who has ever stood awed at the indomitable spirit and sheer energy of a mustang running free.”⁴⁰

⁴⁰ <https://www.presidency.ucsb.edu/documents/statement-signing-bill-protect-wild-horses-and-burros>

Based on their population growth over the past 50 years, the federal protection of range equines has proven to be a success. As many who promote the WHB Problematic Narrative argue, too successful. Now, the population growth of range equines, constrained within imperiled sagebrush steppe ecosystems, is resulting in the failure of this program to maintain stability. How is the BLM supposed to maintain a balanced population range and a balanced ecosystem when we as settlers have done just about everything to significantly transform the ecological systems of the American West?

Range equine biogeography, history, and social-ecological relationships, even prior to their federal protection, matters in how we conceive of and implement range equine management today. Such as where they “should” belong. Settler colonialism functions to erase history and present a shallow and temporal window to view current environmental concerns, primarily post passing of legislation. This allows settler colonialism to hide itself within law, economy, and bureaucracy.

Considering this research, I recommend reassessing the WHB Program by interrogating the logics that inform its operations. This work requires integration of local Indigenous Knowledge and values that could help inform range equine herd management area eradication or creation. Questions open for consideration include a variety of management tactics, such as hunting and community management. Community partnerships are a promising direction for the BLM. Creating federal contracts for fertility control darting and equine training programs will reduce the number of range equines needed to be removed from the range and will increase the number of beings adopted as all trained WHBs get adopted.

I am not well equipped to make specific herd management area recommendations to the BLM. Rather, working with Tribal communities and implementing suggested changes is the

recommended process. Additionally, exploring different managerial approaches in different herd management areas could allow for the systematic study of alternative strategies, such as releasing few stallions. Of course, many of these suggestions do not align with the different structural guidelines of the WHB Program nor stakeholder interests, which make implementing Indigenous Knowledge challenging. This is why I believe it is relevant to frame the underlying logics that guide universal range equine management and protection within settler colonialism because even those that advocate for range equine welfare may be unaware of the ways in which their advocacy stimulates Indigenous sovereignty, such as prohibiting horse slaughter.

When I chatted with BLM personnel about improvements for this program, I received a wide array of suggestions. Some suggested increasing program funds, range equine sale without limitation, slaughter of those stored off-range, public education, organizational paradigm-shifts towards fertility control, organizational restructuring to work collaboratively across different land managers (including Tribes/Nations), expand budget allocations beyond one-year, etc. One BLM Headquarters employee mentioned that if the program received an additional \$200,000,000, which is more than they are currently allocated, then they could solve this problem. As of the writing of this dissertation, the federal government is at its debt ceiling at \$30,930,000,000,000. This means that the U.S. Treasury department cannot borrow more money to pay for government expenses, like the WHB Program.

When discussing the WHB Program budget challenge with a BLM Headquarters personnel, they discussed challenges that they face when communicating with Congressional Appropriators.

“A thing that stuns me still is the sheer volume of funding scenarios that we develop and present to Congress, in particular the Department of Interior and

OMB, the Office of Management Budget. It seems to be a never-ending parade of spreadsheet scenarios for moving dollars around. You know our appropriators, in particular, but other stakeholders, they are convinced if they can just get one more spreadsheet they'll find the solution. That, that by, by being able to manipulate the dollars of some projected out year funding they're, they're going to see the solution that changes the growth curve trajectory, the funding trajectory. And that's a really frustrating part of the program for us to manage. It's over, and over, and over again. They're just sure that we haven't looked hard enough to find that hidden column on the spreadsheet that's going to reveal the answers" (BLM Headquarters).

The issues within the WHB Program are trying to be solved by a narrow budget that is mostly already allocated to caring for range equines removed from the range. Of course, those who work in or around this program are very committed and are doing their best work within their institutional, legal, and budgetary constraints. The unfortunate part of this program, however, is that it is trying to be fixed by existing settler colonial mechanisms. Congress believes that concerns about the WHB Program can be solved through designated budget allocations.

Based on the suggestion of a colleague, I am left pondering what are the settler colonial logics and processes discussed in this dissertation protecting and promoting? After the course of this research, it is my understanding that these settler colonial processes protect and promote themselves. For instance, the premise of the WHB Program is to protect and promote the symbolism and imagery of settler's history in the American West. This is the goal of settler colonialism, to justify itself as the only history. Settler colonialism normalizes itself, even when it fails. By framing environmental degradation as being caused by settler colonialism, this

dissertation presents a new way to view animal/environmental management regimes. I argue that the context in which management regimes occur matters and it affects the potential avenues for finding resolution.

The examination of the preceding case reveals a significant dilemma our society faces. That dramatic ecological change and the separation of humans from more-than-human beings is structured into the formation of governing and management. These cannot be resolved by adding onto the existing legal frameworks. Rather, they must be re-organized and re-constituted. As Congress asks the BLM to “find that hidden column on the spreadsheet that's going to reveal the answers”, this dissertation argues that solutions cannot be found within spreadsheets. Effective solutions can only be found by fundamentally re-assessing the program, by identifying the failing colonial processes and management goals, and by grounding in real-world Indigenous alternatives based on trust, diplomacy, and consent. What would place-based Indigenous perspectives and Knowledge communicate about desired human-equine relations and management result look like? I hope one day we will find out. Without a doubt, we can certainly devise a system that recognizes and interdicts such problems more successfully than does our current one. If we cannot, we should brace ourselves for more recurring and ongoing problems made present in a settler colonial system.

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