THESIS

ANALYSIS OF U.S. WILD HORSE & BURRO MANAGEMENT DISCOURSE: CONTRIBUTIONS TO A K-12 CURRICULUM

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ABSTRACT

ANALYSIS OF U.S. WILD HORSE & BURRO MANAGEMENT DISCOURSE:
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Public discourse surrounding wild horses and burros (WHB) managed in the western United States reflects a complex social-ecological issue shaped by historical, cultural, economic, environmental, and political realities. Competing values, priorities, interpretations, perceptions, and lack of knowledge among diverse stakeholders complicate the Bureau of Land Management's (BLM) management of these animals. This has created a need for more effective science communication and science-driven educational content to foster public understanding of these complexities. To better understand these dynamics, we studied the communication content and approaches of the two federal agencies tasked with managing wild horses and burros: BLM and the U.S. Forest Service, and five nongovernmental organizations dedicated to these animals. A thematic and rhetorical discourse analysis of agency and organizational website textual content identified cross-site patterns in how WHB are characterized, why organizations are involved, how management problems are defined, and what solutions are proposed. Four overarching meta-themes emerged: (1) WHB status and organizational authority in management, (2) competing definitions of management, (3) management pathways, and (4) the role of science and public understanding. We then examined how organizations used rhetorical appeals (ethos, pathos, logos) to establish credibility, employ emotional language, and demonstrate logical reasoning in constructing these narratives. We found that federal agencies primarily relied on institutional authority and scientific rationality, while non-governmental organizations more

frequently employed moral, emotional, and cultural appeals. Our findings demonstrate that communication about WHB management extends beyond the simplistic transmission of scientific information from experts to the public. It illuminates how human dimensions such as emotions, values, experiences, and identity inform positionality on issues and how these dimensions should also be evaluated. These insights provide a foundation for several broader considerations. First, they will inform our K-12 curriculum approaches by including methods that help students critically evaluate information and engage with complex social-ecological issues, while recognizing the influences of their and others' worldviews on perspectives and decisions – all in the context of WHB ecology and management. Second, the results of our study can inform BLM's and USFS's approaches to management and engagement, as well as their communication approaches with the public and the design of educational materials. Finally, we believe that this work presents an important demonstration of how wicked social-ecological problems and their diverse stakeholders can be approached by decision-makers and management authorities more broadly.

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Assistant and am grateful for the funding that supported my position. The findings and conclusions presented here are solely my and the research team's responsibility and do not necessarily represent the views of the Bureau of Land Management.

DEDICATION

I dedicate this work to the younger version of myself. The little girl who wandered wide-eyed through magical forests, waded turbulent waters, was enchanted by beautiful creatures, and was captivated by the quiet wonder of the natural world.

She unknowingly laid the foundation for the path I walk today.

This degree is not just an academic achievement—it is a testament to survival, self-evolution, a community's love, and the pursuit of that little girl's passion for exploring and wonder. The journey to this degree was not linear, nor easy. It was shaped by unexpected challenges and moments that demanded growth, courage, resilience, and endurance to move forward along unfamiliar paths. Through these experiences, I learned that, like pearls formed under pressure, something meaningful and beautiful can emerge.

So, to the girl with the pearls—may she never lose her luster.

TABLE OF CONTENTS

CHAPTER 1: WILD HORSE & BURRO ORIGINS, HISTORY, ECOLOGY, & MANAGEMENT IN NORTH AMERICA

IMPORTANCE OF CONTEXT IN SOCIAL-ECOLOGICAL ISSUES

Wild horse and burro (WHB) management in the United States is widely recognized as a contested social-ecological issue, characterized by persistent disagreement among stakeholders over how WHB populations should be managed and their place on rangelands (Hennig et al., 2013; Beever et al., 2019; Scasta et al., 2018). Environmental decision-making is shaped by differing social values, land-use priorities, and human perspectives, which can influence how management problems are interpreted (Burnson et al., 2022; Manfredo et al., 2021). Wild horse and burro management often involves multiple considerations, tradeoffs, and competing objectives, which can contribute to ongoing conflict in decision-making processes.

A point of debate arises from varying views on WHB's ecological role and status. Some narratives highlight the tension between scientific classification and cultural importance. Wild horses and burros are feral, defined as being descended from domesticated animals and now living in a wild state. Other viewpoints focus on their cultural, historical, and symbolic values (Hennig et al., 2023; Rikoon, 2006). Continued disagreement also stems from the ecological effects of WHB, particularly regarding the extent to which population size contributes to impacts on vegetation, water resources, native wildlife, and livestock grazing (Beever et al., 2018; Davies & Boyd, 2019). Studies generally recognize that ecological outcomes vary depending on WHB population density and resource availability, with overpopulation increasing the likelihood of resource degradation (Beever et al., 2018; Davies et al., 2014; NRC, 2013).

However, disagreement arises in how these impacts are interpreted and prioritized, particularly when different stakeholders draw on distinct values, personal knowledge, and information sources to evaluate ecological conditions and management responses (Manfredo et al., 2021; Scasta et al., 2018; NRC, 2013). Public understanding of WHB, including their origins, population dynamics, and management options, remains limited, which may make it more difficult for individuals to evaluate competing claims and management options (NRC, 2013). These dynamics highlight the importance of education in mitigating conflict surrounding WHB management. Improving understanding of WHB-related topics may support more informed engagement with these issues. Research indicates that simply providing more scientific information may not resolve disagreements, as values and prior beliefs shape how people interpret and respond to environmental information (Manfredo et al., 2021; Scasta et al., 2018).

An overview of the origin, evolution, ecology, and management of wild horses and burros in North America is provided in this chapter. By synthesizing biological, ecological, and historical information, this chapter aims to support a more informed understanding of WHB management and provide a basis for evaluating the complex and often differing perspectives that shape this issue.

ORIGIN, EVOLUTION, & ADAPTATION OF EQUIDS

Members of the family *Equidae* have undergone over 50 million years of morphological, ecological, and geographic change, beginning in North America (Figure 1). Equids (family Equidae, currently comprising horses, asses, and zebras) are large herbivorous ungulates in the order Perissodactyla, characterized by an odd number of toes, with body weight supported by the central digit (MacFadden, 2005). The earliest known equid ancestor is the small, dog-like *Eohippus,* also known as *Hyracotherium,* which emerged during the Eocene epoch (56-33.9

million ya) following the Cretaceous-Paleogene extinction event (66 million ya) (Cirilli et al., 2022; MacFadden, 2005). These early equids were small, multi-toed mammals with short-crowned teeth adapted to forest environments where they primarily browsed on soft, leafy vegetation (Macfadden, 2005).

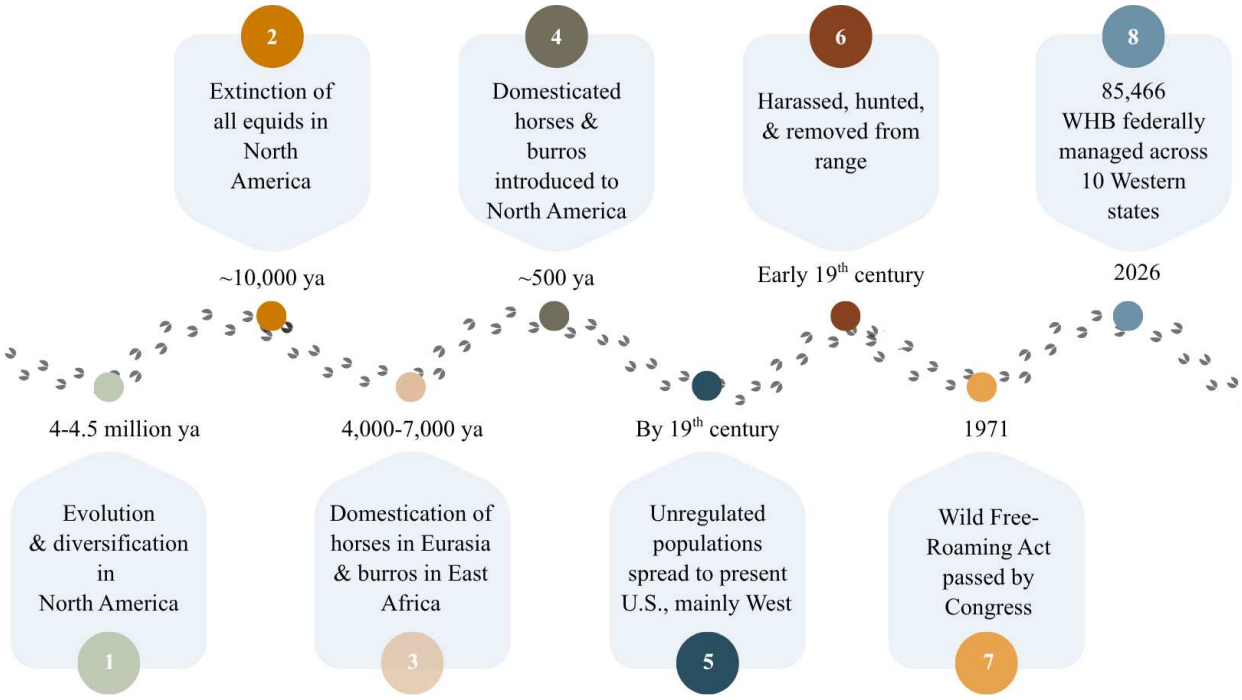


Figure 1. Timeline of wild horses and burros from equid evolution to contemporary history (note that the timeline is not to scale).

As North America transitioned to open, grass-dominated ecosystems during the Miocene (23 million ya) and Pliocene (5.3 million ya), equids underwent substantial morphological and physiological change (Cirilli et al., 2022; MacFadden, 2005). Selection favored traits that enhanced movement and resource utilization, helping species adapt more effectively to the growing open grasslands (Taylor et al., 2024). Limb length increased, and their multiple toes were reduced to a single toe, or hoof, which improved locomotion efficiency (Cirilli et al., 2022; McHorse et al., 2019). Equids evolved high-crowned (hypsodont) teeth capable of withstanding abrasive grasses as their diet shifted from browsing to grazing (MacFadden, 2005). Equids would

go on to develop a hindgut fermentation system, in which an enlarged cecum and colon enable microbial digestion of fibrous, low-quality forage (Taylor et al., 2024). These evolutionary traits illustrate how early equids became closely associated with grassland ecosystems.

The evolution of equids is best understood as a branching, complex evolutionary tree rather than a linear progression, comprising multiple extinct and coexisting lineages (Cirilli et al., 2022; MacFadden, 2005). Equid diversification that began in North America spread into South America, Eurasia, and Africa through a series of dispersal events (Cirilli et al., 2022). Equids began dispersing into Eurasia as early as the Miocene, when the Bering Land Bridge intermittently connected the two continents (Cirilli et al., 2022). This corridor facilitated repeated, bidirectional movement of equids throughout the Pleistocene, allowing for gene flow and diversification (Vershinina et al., 2021). From Eurasia, *Equus* lineages diversified and spread into Africa, where they gave rise to distinct evolutionary branches, including zebras (*Equus quagga, E. grevyi, and E. zebra*) and African wild asses (*E. africanus*) (Cirilli et al., 2022), the latter representing the ancestral lineage of modern donkeys.

By the late Pleistocene, ancient DNA analyses indicated that North American equids were grouped into two major evolutionary lineages: caballine horses (*Equus)* and a distinct stilt-legged lineage (*Haringtonhippus*) (Heintzman et al., 2017; Weinstock et al., 2005). Caballine equids are evolutionarily significant as they are closely related to Eurasian wild horses (*Equus ferus*), from which domesticated horses were later derived, reflecting continued connectivity between North American and Eurasian populations until closure of the Bering Land Bridge (Vershinina et al., 2021). In contrast, *Haringtonhippus* appears to have been endemic to North America, a divergent lineage that did not persist into the Holocene (11,700 ya) (Heintzman et al., 2017; Vershinina et al., 2021). Equids continued to move between North America and Eurasia

during the Pleistocene, but the eventual loss of the Bering Land Bridge contributed to the isolation and eventual extinction of equids in North America by the end of the Pleistocene (Running Horse Collin et al., 2025).

EXTINCTION OF EQUIDS IN NORTH AMERICA

During the Last Glacial Maximum (LGM, 20,000 ya), North America was colder and drier, with extensive glaciation shaping habitat and vegetation patterns (Faith & Surovell, 2009; Guthrie, 2003). Following the LGM, a period of warming led to the melting of glaciers, fragmenting the vast steppes that once supported ancient horses (Taylor, 2024). This transition was followed by the Younger Dryas (10,000-12,000 ya), which returned to colder conditions, leading to the widespread and synchronous extinction of megafauna, including *Equus* in North America (Faith & Surovell, 2009). The climatic fluctuations altered vegetation communities, reduced forage availability, and likely reshaped competitive dynamics among herbivores (Guthrie, 2003; Seersholm et al., 2020). Equid populations exhibited changes in morphology and distribution. Fossil evidence from Alaska suggests a decline in body size in *E. ferus* populations (14,000-15,000 ya), which may reflect adaptation to changing resource availability and competition with other herbivores better suited to the emerging conditions (Guthrie, 2003).

Volatile climate conditions may not have been the only factor in the demise of *Equus* in North America, as there was another challenge: humans (Seersholm et al., 2020; Solow et al., 2006). Archaeological evidence suggests that humans and equids overlapped temporally and spatially in several regions before equids became extinct, challenging the notion that humans played no role in this process (Guthrie, 2003; Solow et al., 2006). Evidence from multiple sites suggests early humans hunted and consumed dwindling horse populations in North America (Bourgeon & Burke, 2021; Waters et al., 2015). In some cases, Paleoindians used Clovis points

as hunting tools (Kooyman et al., 2001) and used fractured bones from freshly dead horses to make knives and tool handles (Webb & Hemmings, 2006).

Approximately 10,000 years ago, the fossil record indicates that equids had largely disappeared from North America, although a recent study suggests native horses of *Equus* sp. in Yukon possibly survived into the early Holocene, roughly 9,200 – 5,000 years ago (Murchie et al., 2021). Overall, the broader archaeological consensus depicts the extinction of equids in North America by the end of the Pleistocene (Faith & Surovell, 2009; MacFadden, 2005; Weinstock et al., 2005; Guthrie, 2003), leaving a roughly 10,000-year biogeographical gap between ancient native equids and the later introduction of modern domestic horses.

DOMESTICATION OF HORSES & BURROS

Horses

Although the evolutionary origin of the genus *Equus* lies in North America, horse domestication occurred much later in Eurasia. After dispersing into Eurasia during the Pleistocene, caballine horses continued to evolve under natural selective pressures until human societies began interacting with and managing populations (Orlando et al., 2013; Librado et al., 2021). Evidence from the Botai culture of northern Kazakhstan (5,000 ya) provides some of the earliest strong evidence for horse management, including harnessing and milking, and is central to discussions of early horse domestication (Outram et al., 2009).

Recent genomic research, however, shows that these early managed populations in Botai are not the main ancestors of today's domestic horses. Early horse management and the origins of modern domestic lineages should be regarded as separate processes, as modern horse domestication traces back to the lower Volga-Don region of Eurasia (~4,200 ya) (Librado et al., 2024). Modern domestic horses rapidly spread across Eurasia, replacing local horse populations,

as intensified breeding practices coincided with the rise of widespread horse-based mobility (~4,700 years ago) (Librado et al., 2021). In contrast, Przewalski's horse (*Equus przewalskii*), the only surviving wild horse lineage globally, represents a genetically distinct population that did not contribute substantially to the ancestry of modern domestic horses (Orlando et al., 2013; Librado et al., 2021). Intensified human control over breeding and the widespread adoption of horse-based mobility emerged around 4,000 years ago, marking a later phase in the domestication and expansion of modern domestic horses (Librado et al., 2024).

The rapid expansion of domesticated horses across Eurasia was associated with major cultural and technological changes, including the development of wheeled chariot technology, equestrian warfare, and increased mobility (Taylor, 2024; Librado et al., 2021). Human-controlled breeding intensification around 4,000 years ago represents a transition from opportunistic use of horses to more intensive husbandry (Librado et al., 2024). Over the following centuries, human societies continued to selectively shape morphology, behavior, and performance to produce horses with desirable locomotive traits, temperament, color variation, and specialization for transport, warfare, agriculture, and sport (Andersson et al., 2012; Ludwig et al., 2009; Taylor, 2024). By the time modern horses were introduced to the Americas in the 16th century, they were distinct from their Pleistocene ancestors.

Burros

Donkeys (*Equus asinus*) are direct descendants of the African wild ass (*Equus africanus)* (Rossel et al., 2008; Beja-Pereira et al., 2004). The English word "donkey" and the Spanish word "burro" are interchangeable. In the southwestern U.S., "burro" is more commonly used, especially to refer to feral donkeys. Burros are physiologically and behaviorally well-suited to arid, rugged, and resource-limited landscapes, consistent with the ecology of African wild asses

in their native habitats in the Horn of Africa, and with traits emphasized in domesticated burro pastoral contexts (Marshall & Weissbrod, 2011; Rossel et al., 2008). Burros were domesticated in northeastern Africa roughly 5,000 years ago, with early domestic burros used primarily as transport animals, supporting the movement of goods and mobile pastoral lifeways during a period of increasing aridity in what is now the Sahara region (Beja-Pereira et al., 2004; Kimura, 2013; Marshall & Weissbrod, 2011; Rossel et al., 2008). Modern burros represent a separate domesticated equid lineage from horses, rooted in African pastoralism and Old-World human-animal relationships.

INTRODUCTION OF MODERN DOMESTICATED HORSES & BURROS IN NORTH AMERICA

Modern domestic horses were introduced to North America when Christopher Columbus brought them during his second voyage in 1493; evidence of 16th-century horse remains confirms that the Caribbean was a primary entry point (Delsol et al., 2022; Taylor, 2024). These European horses likely belonged to Iberian lineages consistent with Spanish colonial horse introduction and management practices in the early Caribbean (Delsol et al., 2022). Burros were included in early colonial shipments to support Spanish colonization, including transportation and pack labor (Beja-Pereira et al., 2004; Kimura et al., 2013; Mitchell, 2018). Eventually, many Caribbean islands developed populations of feral horses and burros that either escaped or were intentionally released (Cabrera, 1945) and thrived, likely due to the absence of natural predators and abundant forage (Taylor, 2024).

During the early and mid-16th century, the Spanish transported horses and burros to Mexico in pursuit of mission expansion, ranching, mining, expeditions, and further colonization (Mitchell, 2015; Taylor, 2024). The Spanish attempted to maintain tight control over horses and

restrict Indigenous peoples' access to them, but these efforts were only partially effective (Taylor et al., 2024). Through escape, trade, theft, and exchange, horses became part of Indigenous communities, where existing trade networks and mobility facilitated their rapid spread across North America (Mitchell, 2015; Taylor et al., 2023). Indigenous peoples of central and northern Mexico were among the first to adopt horses, enhancing mobility, hunting practices, warfare, and social status. Similar transformations spread widely across North America, as horses spread into the U.S. Southwest, Great Plains, and northern Rockies during the late 16th and early 17th century (Taylor, 2024; Forbes, 1959; Zarn et al., 1977). Burros were not adopted as widely in Indigenous communities and remained rooted in colonial and later Euro-American economic activities, such as agricultural hauling, mining, and settlement (Mitchell, 2018; Zarn et al., 1977).

Other European colonies contributed more horses and burros to North America. Horses and donkeys arrived in English colonies through Jamestown during the 17th century as part of early settlement efforts (Taylor et al., 2025). Besides Spanish and British introductions, colonial powers like the French and Dutch also introduced equids to North America (Ovchinnikov et al., 2018). Horses became catalysts for transformations in colonization, trade, and mobility (Mitchell, 2015; Taylor, 2024). Burros played an important role as they expanded across the West, serving as essential labor animals during mining booms in the 18th and 19th centuries (Mitchell, 2018; Zarn et al., 1977). Burros and mules (horse-burro hybrids) were valued for their low water requirements, endurance, surefootedness, and ability to carry heavy loads (Mitchell, 2018).

Given that ancient equids went extinct in North America over 10,000 years ago, the introduction of modern domesticated horses and burros returned equids to their ancestral lands (Taylor, 2024). Nevertheless, the modern domesticated horses and burros established here

represent lineages shaped by human selection and domestication rather than the direct continuation of Pleistocene populations, which went extinct. Over time, their makeup changed as domestic horses that escaped or were released integrated into feral herds, leading to mixed groups on Western rangelands that did not originally coevolve with the ecosystem (Wolfe, 1983). As a result, horse and burro interactions and ecological roles in contemporary rangeland systems differ from those of their extinct ancestors.

RANGELAND ECOSYSTEMS

Western U.S. rangelands encompass grasslands, shrublands, and desert ecosystems that are colored by native grasses, forbs, shrubs, and sparse woodlands (Briske, 2017). These semi-arid and arid landscapes function as resource-limited ecosystems, where plant productivity, soil stability, and wildlife habitat are constrained primarily by water availability, temperature extremes, and spatial heterogeneity in soils and vegetation (Ellis & Galvin, 1994; Herrero et al., 2009; Reid et al., 2014). Because climate variability influences ecological processes, Western rangelands generally recover slowly after disturbances and have a limited ability to withstand intense pressure without undergoing long-term ecological changes. (Havstad et al., 2007).

Rangelands support biodiversity and contribute to wildlife conservation by providing habitat for plant and animal communities adapted to arid and semi-arid environments, including endemic and range-restricted species (Reid et al., 2014). The saguaro cactus (*Carnegiea gigantea*) is endemic to the Sonoran Desert, and the greater sage-grouse (*Centrocercus urophasianus*) is only found in sagebrush ecosystems. Rangelands play a significant role in mitigating climate change, as grasslands and shrublands store carbon underground in the soil, often over long periods (Herrero et al., 2009; Conant et al., 2001). Ecological functions like biodiversity, nutrient cycling, and carbon sequestration are closely tied to land health and

management, particularly in areas with limited water resources (Briske et al., 2023; Havstad et al., 2007). Livestock production systems are heavily reliant on rangelands, which provide forage for extensive grazing of domestic species, commonly cattle and sheep. In turn, the livestock industry generates the food production needed to sustain consumption, support rural livelihoods, and regional economies (Herrero et al., 2009). Fossil fuel and renewable energy development occurs primarily on rangelands, creating an infrastructure footprint that can disturb and fragment habitat and interact negatively with other uses such as livestock grazing and wildlife conservation (Holechek & Sawalhah, 2014).

Despite harsh conditions, western U.S. ecosystems are managed as a multiple-use landscape. Rangelands hold strong cultural and historical significance in the American West, where public land governance reflects long-standing tensions among conservation priorities, production goals, and the social values associated with open landscapes (Brunson et al., 2021; Sayre, 2017). Since these lands operate as interconnected social–ecological systems, human choices about land use and policies are closely linked to ecological results (Brunson et al., 2022; Hruska et al., 2017; Reid et al., 2014). Consequently, maintaining rangeland health is essential to all management decisions, including wild horse and burro management. The presence of wild horses and burros has been highly influential, affecting not only the viability of their own populations but also the finite ecological capacity of the landscape (National Research Council, 2013).

FEDERAL PROTECTIONS FOR WILD HORSES & BURROS

The Taylor Grazing Act of 1934 was a pivotal development in rangeland management as it aimed to regulate livestock grazing on public lands (Public Law 73-7820, 1934). At that time, unregulated horses and burros were often harassed, hunted, and removed to mitigate competition

with livestock and prevent range degradation (Scasta et al., 2018; Wolfe, 1982). In the 1950's, activist Velma Johnson (a.k.a. "Wild Horse Annie") witnessed captured horses in a pickup truck that was leading them to slaughter. This motivated her to ignite a grassroots movement to end the capture and slaughter of feral horses and burros, including rallying school children to pen letters to Congress. Public campaigns called for the better treatment and management of wild horses, resulting in the landmark "Wild Horse Annie Act of 1959" law (Public Law 86-234) (BLM, n.d.). This Act was the first federal law to protect feral horses and burros by banning harassment, poisoning water sources, and hunting them, as well as prohibiting the use of motorized vehicles and aircraft to commit these acts on public lands.

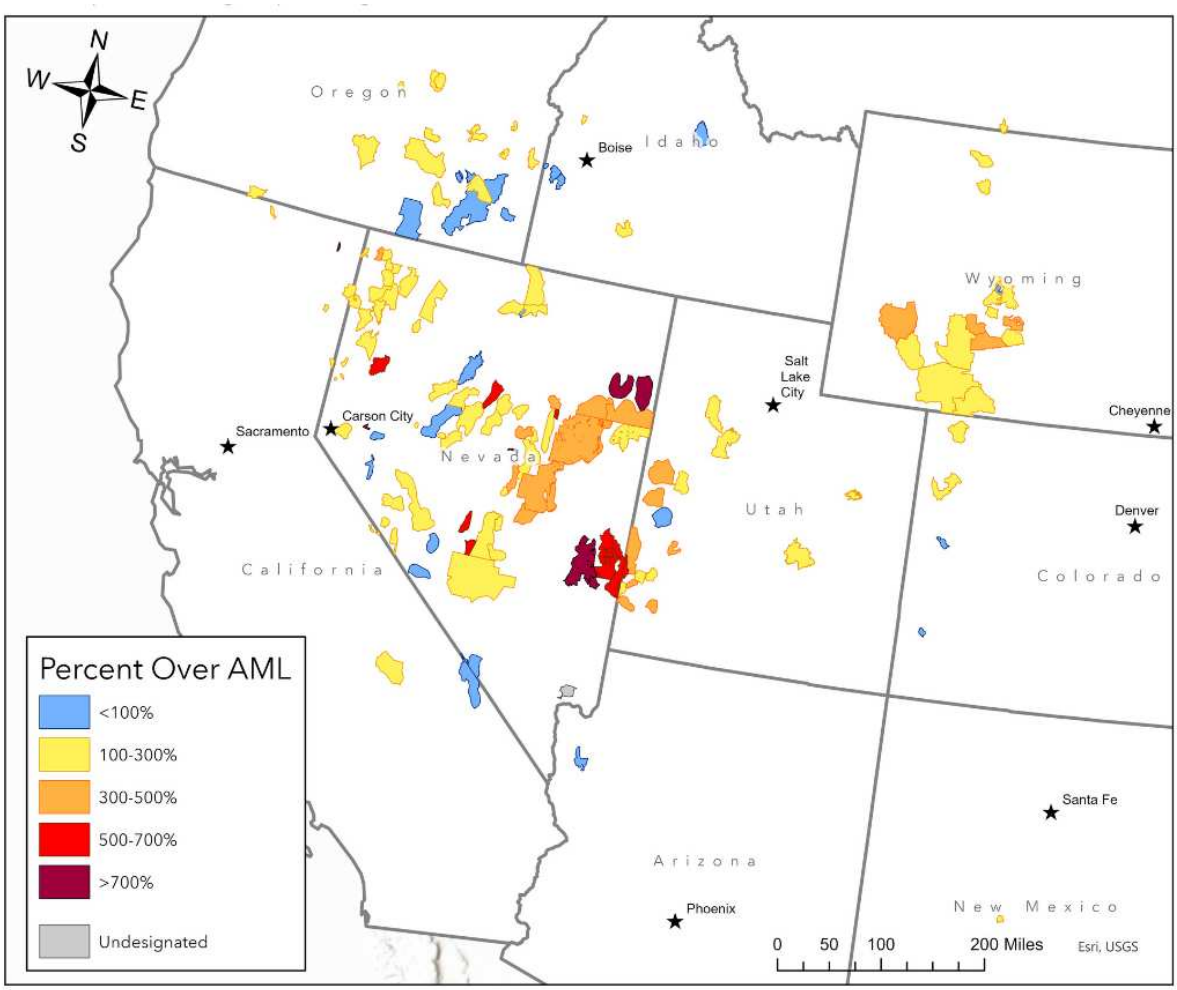
Despite these protections, the 1959 Act did not establish a comprehensive framework for long-term management of wild horses and burros (BLM, n.d.). Continued public outcry and declining populations led Congress to pass the Wild and Free-Roaming Horses and Burros (WFRHB) Act of 1971 (Public Law 92-195, 1971). It placed all unbranded and unclaimed horses and burros on federal public lands overseen by the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS) under their protection in areas where they were found at the time of enactment. The Act mandates their protection from capture, harassment, branding, and death, and ensures the necessary management of these species on designated federal lands. Since then, the BLM and the USFS have been entrusted with managing and maintaining a "thriving natural ecological balance" between these equids, livestock, wildlife, and other land-use activities on their jurisdictions (BLM, n.d; USFS, n.d).

Feral horses and burros have been legally recognized and classified as "wild" under federal protections outlined in the WFRHB Act of 1971 (Public Law 92-195, 1971). Although domesticated horses and burros living in the wild are technically feral, their political designation

as “wild and/or free roaming” emphasizes their protected status and symbolic significance (Hennig et al., 2023). Consequently, it could mislead the public into believing that these feral equids are native and should be treated as such, while disregarding the biological friction between these introduced domesticated equids and the natural environment. The divergent views and misaligned political definitions of feral horses and burros have created an oxymoron between their biological functions and their management, straining ecological, logistical, and financial capacities (Hennig et al., 2023; NRC, 2013).

BLM’s WILD HORSE & BURRO PROGRAM

The BLM implements the WFRHB Act of 1971 through its Wild Horse and Burro Program, which is responsible for managing free-roaming horses and burros on 175 herd management areas (HMAs) (Figure 2) across 25.5 million acres of public lands in the western U.S. (BLM, n.d.). This program operates under multiple-use arrangements that include wildlife habitat, livestock grazing, energy development, recreation, and more, with the goal of maintaining ecological and sustainable balance (BLM, n.d.).



Credits: mapping(Amelia Anderson), data(Bureau of Land Management, USGS, Esri)

Figure 2. 2023 wild horse and burro population estimates as a percentage of the appropriate management level in each herd management area. Credits: mapping, Amelia Anderson; data, Bureau of Land Management, U.S. Geological Survey, Esri.

On-Range Management

On-range management focuses on maintaining herd populations within appropriate management levels. The BLM establishes appropriate management levels (AML) for each HMA, defined as the minimum and maximum numbers of wild horses and burros that the landscape can support, given local ecological conditions, alongside other uses, without causing ecological degradation (BLM, n.d.). AMLs are based on habitat assessment, forage availability, monitoring data, and management considerations within a broader multiple-use policy framework (BLM, n.d.; NRC, 2013). Wild horse and burro populations can increase rapidly, with annual growth

rates estimated at 15-25%, resulting in the populations doubling every four to five years (Garrott et al., 1991; Scasta et al., 2018). When populations exceed the AML of their designated HMA, BLM implements management actions and tools to reduce ecological pressure on rangelands and maintain animal health. To remove excess animals from the range, BLM conducts gathers, also known as roundups, using helicopters or bait trapping. The animals are corralled into temporary holding pens for evaluation. Individuals who are old, sick, or lame may be humanely euthanized, while excess animals are removed from the range, and the remaining are released back into the HMA (BLM, n.d.). Fertility control programs, including immunocontraceptives like Porcine Zona Pellucida, are used to slow population growth. While their use is increasing, their success relies on repeated applications and feasibility (BLM, n.d.; NRC, 2013; Turner & Morrison, 2001). Although fertility control can limit population growth, it alone is unlikely to reduce wild horse and burro populations to desired levels (Schoenecker et al., 2024).

Off-Range Management

Animals removed from the range are placed in holding facilities for off-range management, where they receive veterinary care and are prepared for adoption, sale, or long-term holding (BLM, n.d). BLM partners with organizations to gentle and train eligible animals to increase chances of adoption or sale to qualified private individuals (BLM, n.d.). The BLM's adoption and sales program is intended to place animals into eventual private ownership, which has been key to reducing excess populations in off-range management. Interest in adoptions has fluctuated in the past (Scasta et al., 2018), but recent adoptions have increased (BLM, n.d.). Because slaughter of WHB is prohibited by law, animals that are not adopted or sold are maintained in off-range pastures for the remainder of their lives, creating significant long-term management and financial commitments.

Management Constraints & Issues

Today, BLM's management practices reflect a dual mandate: to protect wild horses and burros while maintaining rangeland health and supporting multiple land uses. Despite this mandate and associated management efforts, wild horse and burro populations have grown substantially, increasing from roughly 25,000 in 1971 to 85,466 as of March 1, 2026; even though 119,098 animals have been removed between 2012 and 2025 (BLM, n.d.). Gather and removals are necessary to reduce ecological pressure on multi-use rangelands, but alone, are inadequate to address continuous population growth (Garrott & Oli, 2013; NRC, 2013). Used in isolation, fertility control generally does not reduce overabundant WHB populations to target levels, whereas gathers can reduce populations immediately but typically must be repeated and paired with fertility control to maintain AML over time (Schoenecker et al., 2024; NRC, 2013). Fertility control is also the preferred method, as gathers remain controversial among some members of the public because of animal welfare concerns and broader disagreement over management (Hennig et al., 2023; NRC, 2013). At the same time, reliance on off-range holding presents logistical and financial challenges. The most recent account of off-range holding cost BLM $101 million in fiscal year 2024, which was 66% of the Wild Horse and Burro Program's total expenditures for that year (BLM, n.d.). These dynamics highlight the complexity of implementing the 1971 Act, where ecological, economic, and social considerations must be addressed simultaneously.

ECOLOGICAL IMPACTS & CONSEQUENCES

Modern equids did not coevolve with the sagebrush steppe, salt desert, and Great Basin ecosystems found in the U. S West (Beever et al., 2018; Garrot, 2018). Wild horse and burro foraging behavior, movement patterns, and water-use strategies often interact poorly with the

ecological constraints of these landscapes (Boyd et al., 2017; Davies et al., 2014). Unlike domestic livestock, wild horses and burros cannot be seasonally rotated, resulting in their year-round occupancy of rangelands. The rapid population growth of WHB has the potential to outpace the capacity of arid ecosystems to recover from overgrazing (Eberhardt et al., 1982; Garrott et al., 1991; Scasta et al., 2016). Ultimately, landscapes with higher equid densities show lower resilience to disturbance, reduced resistance to invasive species, and greater long-term degradation than comparable areas with herds at or below AML (Chambers et al., 2017; Davies & Boyd, 2019).

Overabundant wild horse and burro populations are widely recognized as a significant ecological pressure in Western rangelands, particularly in sagebrush ecosystems that support species of high conservation concern (Beck et al., 2024; Beever & Aldridge, 2011). Increasing horse densities are associated with declining Greater sage-grouse habitat quality and population performance, particularly when herds exceed AML (Beever & Aldridge, 2011; Coates et al., 2021). High-density horse and burro herds also compete with native ungulates for forage (Smith et al., 1986a; Scasta et al., 2016) and can inhibit restoration efforts by repeatedly grazing recovering plants, damaging biological soil crusts through trampling, and facilitating the spread of invasive species like cheat grass (Beever et al., 2003; Couvreur et al., 2004; King et al., 2019; Loydi & Zalba, 2009).

Riparian areas are particularly sensitive to frequent horse visitation and trampling that can degrade streambanks, cause erosion, and reduce vegetation cover, limiting access for native wildlife species such as bighorn sheep, pronghorn, elk, mule deer, and sage-grouse (Hall et al., 2016; Perry et al., 2015; Ostermann-Kelm et al., 2008). Horses' impacts on vegetation in riparian areas can exceed those of cattle (Kaweck et al., 2018), and these effects may persist for decades

even after horse removal (Anderson & Inouye, 2001). The ecological effects of overabundant wild horses and burros may become more pronounced under climate change, as reduced water and forage availability and more frequent prolonged drought can further limit resilience in western rangelands (Beck et al., 2024; BLM, n.d.; Polley et al., 2013).

Natural population regulation, specifically through predation, has been shown to be minimally effective in preventing overpopulation across all areas where wild horses and burros roam. Although mountain lions do prey on wild horses in some areas, the frequency of such predation depends on factors such as predator density, habitat structure, individual predator behavior, and prey availability (Andreasen et al., 2021; Stoner et al., 2026; Turner & Morrison, 2001). Consequently, predation does not occur at the scale required to reduce overpopulation (NRC, 2013; Stoner et al., 2026).

There are some positive ecological benefits that wild horses and burros may contribute to their ecosystems. Low-density herds can create localized ecological benefits, including increased water wells dug by burros in ephemeral streambeds (Lundgren et al., 2021), but the ecological costs of feral equids sharply outweigh the benefits (Rubin et al., 2021). Research on large herbivores more broadly suggests that their activities can influence ecosystem structure and processes, including soil nutrients and spatial heterogeneity, though these effects vary across species and environments (Trepel et al., 2024). Ultimately, when wild horse and burro populations grow beyond the ecological carrying capacity of the landscapes they depend on, scarcity of forage and water can lead to large-scale die-offs (Scasta et al., 2018), an outcome that is both ecologically devastating and deeply disheartening to those who seek to ensure the welfare and humane treatment of these animals.

CHAPTER 2: A THEMATIC ANALYSIS OF ORGANIZATIONS' WEBSITES ON WILD HORSES & BURROS

INTRODUCTION

Wild Horses & Burros as a Wicked Social-Ecological Issue

Free-roaming wild horses and burros inhabit public, private, federal, and tribal lands across the United States, particularly in and around the Great Basin in the West. Managing these populations requires balancing ecological constraints, legal obligations, and competing interpretations of appropriate stewardship on multiple-use landscapes. Wild horses and burros occupy a social-ecological crossroads, where historical, cultural, economic, environmental, and political considerations intersect, illustrating the interdependence between human societies and ecological systems (National Research Council [NRC], 2013; Ostrom, 2009; Scasta et al., 2018). Though they occupy a powerful place in American culture, the stories told about them may obscure the ecological and management realities shaping their current and future status (DeConcini & Rice, 2021; Frey et al., 2024). Wicked problems arise when competing values and paradoxes exist among stakeholders of a situation, and no single technical solution will satisfy them all (Carcasson, 2016). Wild horse and burro (WHB) management exemplifies a wicked problem because of competing values, contested issues, and interdependent, complex social and ecological dynamics.

Wild horses and burros belong to the family *Equidae*, a group of ungulates within the order Perissodactyla. Although the evolution and diversification of equids initially occurred in North America (Orlando et al., 2013), substantial archaeological evidence shows that the ancient native horses went extinct around 10,000 years ago (Faith & Surovell, 2009; Guthrie, 2003;

MacFadden, 2005; Weinstock et al., 2005), with diversification of contemporary equids occurring after crossing the Bering Land Bridge into Eurasia and subsequently to Africa (Running Horse Collin et al., 2025). After nearly 6,000 years of domestication across Eurasia (Librado et al., 2021; Marshall & Weissbrod, 2011), modern horses (*Equus caballus*) and burros (*E. asinus)* were brought to North America by European colonists in the late 15th to early 16th centuries (Delsol et al., 2022; Mitchell, 2018; Taylor et al., 2023). Today, free-roaming horse populations mainly originate from animals brought by these colonists (Taylor et al., 2023). Over time, their composition changed as escaped or released domestic horses joined feral populations, resulting in mixed herds on Western rangelands that did not originally coevolve with the ecosystem (Wolfe, 1983).

Rangelands are vast, predominantly grass, forb, and shrub-dominated ecosystems that experience limited precipitation and climatic extremes (Briske, 2017; Robinson et al., 2019). They provide critical services like forage production, biodiversity support, water regulation, and carbon storage (Robinson et al., 2019). In the western United States, rangelands make up much of the landscape and are especially important because they support multiple uses like livestock grazing, wildlife habitat, energy development, recreation, and other public land uses (Briske et al., 2023; Sayre et al., 2012). As free-roaming large herbivores, WHB can alter vegetation, increase soil disturbance through hoof trampling, and degrade riparian areas in semi-arid ecosystems (Boyd et al., 2017; Davies et al., 2014). When populations exceed the capacity of the ecosystems they roam, these impacts can amplify, contributing to habitat degradation and competition with native wildlife and livestock for limited forage and water (Beever & Aldridge, 2011; Danvir, 2018; NRC, 2013). Management responses to these ecological pressures are shaped by policy constraints combined with intense public conflict and cultural values, creating a

"socio-ecological mismatch" that continues to complicate effective rangeland stewardship (Beever et al., 2018; Hennig et al., 2023).

US Federal law defines wild horses and burros as "*unbranded, unclaimed, free-roaming horses or burros found on public lands"* (BLM, n.d.). Wild horses and burros are feral descendants of domesticated animals and are the only non-native species federally protected in the U.S., complicating assessment of their place within rangelands (Hennig et al, 2023). Their protection under the Wild Free-Roaming Horses and Burros Act (WFRHB) cements them as "living symbols of the historic and pioneer spirit of the West" (Public Law 92-195, 1971).

WHB management on federal lands involves complex ecological trade-offs related to multi-use mandates, including livestock grazing, recreation, wildlife habitat conservation, and rangeland health (Norris, 2018). The two United States federal agencies responsible for managing these species on public lands under their jurisdiction, the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS), need to do so while maintaining a "thriving, natural ecological balance." This mandate has proven contentious, as stakeholders diverge in their definitions of ecological balance, appropriate intervention, and ethical responsibility. (Scasta et al., 2018; NRC, 2013).

Territories in which WHB were found in 1971 are designated herd management areas (HMAs), and there are 175 HMAs across 10 western states with an estimated 61,523 horses and 23,943 burros as of 2026 (BLM, n.d.). In addition to BLM-managed lands, the U.S. Forest Service manages WHB within designated Wild Horse and Burro Territories (WHTs). The USFS oversees approximately 7,100 wild horses and 900 wild burros across 34 active WHTs, 24 of which are jointly managed with BLM (USFS, n.d). The agencies' management approaches primarily aim to regulate WHB populations to maintain appropriate management levels, which

are designated population thresholds that each HMA landscape can ecologically support, while also considering other land use needs (BLM, nd). On-range management approaches include gathers, also known as roundups, which are operations that remove excess animals via helicopter herding or bait trapping, and fertility control to slow population growth (NRC, 2013). Off-range management places eligible captured WHB for adoption or sale, while ineligible animals are placed in long-term holding facilities or pastures (BLM, n.d.).

Stakeholders, including affinity organizations, agencies, ranchers, scientists, and members of the broader public, often disagree about WHB and their management. For example, debates exist regarding rangelands management, causes of degradation, scientific validity, ethics, management effectiveness, animal welfare, preservation of cultural and historical heritage, policy conflicts, and the roles of wild horses and burros on rangelands (Norris, 2018; Scasta et al., 2018; NRC, 2013). These divergent views have stemmed from different priorities rooted in mandates, and individual morality, values, and beliefs (Rikoon, 2016). Although more ecological research is needed, the social complexity surrounding WHB management underscores that providing more scientific information alone will not resolve the disagreement (Frey et al., 2024; Schoenecker et al., 2021; Manfredo et al., 2021; Scasta et al., 2018; NRC, 2013).

Educational Challenges Surrounding Wild Horses & Burros

Public engagement with environmental issues often depends on baseline levels of ecological and species literacy, yet research consistently documents gaps in public understanding of biodiversity, species status, and conservation processes (Bennett et al., 201; Hooykaas et al., 2019). Ecological literacy is defined as the ability to make decisions using scientific knowledge about ecosystems, while recognizing humans' impact on their dynamics (Balgopal et al., 2012). A related concept, species literacy, refers to the knowledge, awareness, and skills needed to

recognize and understand species, including their identification, diversity, ecological roles, habitats, life cycles, and origins (Hooykaas, 2019). Ecological and species literacy are important for individuals to evaluate humans' role in environmental conflicts and how species are situated within these dynamics, enabling the public to make better-informed decisions.

The public's knowledge about WHB ecology and management poses a challenge. Evidence from a survey of Western U.S. residents, where WHB are most prevalent, shows that public knowledge of wild horse ecology and management is low, including limited understanding of origins, population size, and legal management options (Frey et al., 2024). These findings suggest that many individuals may engage in WHB discussions without a clear understanding of population growth dynamics, AML, ecosystems, or the statutory framework that guides federal decision-making. Frey et al.'s (2024) findings highlight a gap in species knowledge and pose a challenge to the public's adequate engagement with environmental issues.

Organizational Website's Influence

Frey et al. (2024) report that respondents frequently rely on government, university, and organizational websites when seeking information about WHB. In contexts where baseline knowledge is uneven, online informational environments may play a consequential role in shaping how individuals learn about management practices and interpret competing claims. Research on WHB-related communication similarly suggests that public perception and engagement are influenced by how information is presented across digital platforms (DeConcini & Rice, 2021). Websites maintained by federal agencies and advocacy nonprofit organizations function as curated public communication environments where organizations present interpretations of WHB status, management challenges, and future directions. Research on policy narratives shows that public problems, understood as socially recognized issues that require

collective or governmental responses, are frequently communicated through story-like structures that define what the problem is, why it matters, and which responses are warranted, rather than as a neutral collection of isolated facts (Jones & McBeth, 2010; Stone, 1989). Communication and how it is constructed through various mechanisms is central to how public organizations build legitimacy (Fu et al., 2024; Wæraas, 2020). Therefore, analyzing these narrative structures is necessary for examining how ecological knowledge and management legitimacy are communicated in public-facing discourse. Previous studies of U. S. federal environmental agency websites demonstrate that web information is actively managed and can shift in visibility and framing over time, reinforcing the importance of these websites as consequential sites of public environmental information (Nost et al., 2021). Examining federal and non-governmental organizations' public-facing platforms (e.g., websites) is also critical for understanding the narratives communicated in public discourse.

While prior research has examined the impact of social media framing, stakeholder perceptions, and the public's knowledge of WHB (DeConcini & Rice, 2021; Frey et al., 2024; Rikoon, 2006), less research has systematically analyzed the thematic structure of websites themselves as informational environments. Our research tackles this issue by employing a thematic analysis approach to examine how seven combined federal and nonprofit organization websites build narratives around WHB ecology and management. We analyzed each organization's textual data to identify recurring themes across sites that could enhance our understanding of organizational values and points of convergence and divergence. This can help us comprehend how shared information might influence and inform the public's ecological literacy, specifically species literacy.

RESEARCH QUESTIONS

I. What themes are presented in the websites of federal agencies that manage wild horses and burros, and a sample of nonprofit organizations dedicated to these species?

II. What thematic (a) similarities and (b) differences can be identified across the agencies' and nongovernmental organizations' websites?

METHODS

WHB Organizations Selection

We aimed to consider a meaningful array of diverse perspectives representing distinct niches in WHB public discourse, collectively reflecting the range of major themes and viewpoints. Our team included BLM (Department of the Interior) and USFS (Department of Agriculture) as necessary subjects by default because they are the federal agencies responsible for the management of WHB on lands under their jurisdiction, as required by the WFRHB Act 1971 (as amended) (Public Law 92-195, 1971). The selection of non-governmental organizations (NGOs) aimed to capture a range of roles and approaches within WHB management and advocacy.

The NGOs were identified based on whether they engaged in one or more of the following: (1) engaged in fertility control; (2) facilitated WHB adoption or training programs; (3) provided off-range sanctuary or long-term care of WHB; and (4) provided advocacy at national or local levels. To identify potential NGOs (also referred to as nonprofit or advocacy organizations), we then conducted systematic online searches using keywords (e.g., "wild horses & burros", "U.S. wild horse and burro advocacy", "U.S. wild horse organizations"). The NGOs were included if they met the following criteria: (1) maintained a public-facing website containing textual content related to western WHB management, ecology, or policy; (2) were

oriented toward advocacy, public communication, or programmatic involvement in WHB–related activities as mentioned above; and (3) were a registered 501 (c) nonprofit organization. The NGOs were excluded if they (1) lacked a publicly accessible website; (2) maintained websites that primarily served as social media feeds; and (3) contained minimal narrative content relevant to WHB management (e.g., websites that solely focused on personal stories or equestrian riding).

We subjectively determined that seven agencies and NGOs would be sufficient for this analysis (Table 1). Collectively, these organizations included: Sand Wash Advocate Team (SWAT), Mustang Heritage Foundation (MHF), Cloud Foundation (CF), Colorado Wild Horse Refuge (CWHR), and American Wild Horse Conservation (AWHC; formerly American Wild Horse Campaign).

Table 1. Overview of federal and non-governmental organizations included in our analyses.

Org	Organization Type	Description
BLM	Federal Agency	Manages WHB on multiple-use public rangelands
USFS	Federal Agency	Manages WHB on National Forest System lands, including national forests and grasslands
SWAT	501(c)(3) nonprofit	Grassroots advocacy group focused on fertility control management of wild horses in Sand Wash Basin, CO; Formal partnership with BLM
MHF	501(c)(3) nonprofit	Training program & adoption facilitation; Previous partnership with BLM
CF	501(c)(3) nonprofit	National nonprofit advocating for WHB
CWHR	501(c)(3) nonprofit	Off-range sanctuary/refuge for wild horses in CO
AWHC	501(c)(3) nonprofit	National nonprofit advocating for WHB

Qualitative Research Approach

Qualitative research approaches involve systematically analyzing textual data to understand nuanced meanings, contexts, and processes in human experiences, emphasizing analytical rigor, reflexivity, and iterative processes to produce credible, contextualized insights that explain how and why phenomena are experienced and interpreted (Levitt et al., 2018; Tracy, 2011). For this study, we conducted a qualitative data analysis of textual data from the websites of seven organizations, identifying patterns and themes to examine narratives communicated about wild horses and burros and their management. Given that WHB discourse is shaped by a variety of perceptions and social dynamics, qualitative analysis is well-suited to identifying the dominant themes of interpretation. This process involved two phases of content analysis: intra- (or within) website analysis and inter- (across) website analysis, with multiple steps in each phase (Figure 1).

Unit of Analysis, Data Collection, & Handling

Public-facing text was downloaded from each agency/NGO website into a document to preserve the text and facilitate analysis. Website text was captured between June 2024 and July 2025. For each site, relevant pages were identified during a full-site content assessment, and their textual content was extracted and compiled into a structured dataset. Data capture focused on written text only, including headings, narrative paragraphs, and figure captions, if present; and excluded images, videos, decorative elements, and information not relevant to WHB ecology or management, such as merchandise, donation, and blog tabs. Each agency/NGO document included extracted data, the access date, the organization's title, a link to its website, and an acronym. Data was stored securely.

Coding Analysis Using ATLAS.ti

We used the qualitative data analysis software platform, ATLAS.ti (Version 25.0.2 (33312)), to organize, code, and interpret the website text. ATLAS.ti facilitates transparent qualitative workflows, including code management, memo writing, data retrieval, and the development of analytic relationships across texts (e.g., grouping codes during higher-level grouping). While the software offers AI-assisted functions, such as automated summaries and code suggestions, we employed these only as supportive tools to facilitate familiarization with the data and to prompt reflection and inspiration for potential codes. Although ATLAS.ti facilitates coding, we made all substantial coding decisions, including code creation, theme identification, and interpretation. Subsequently, we used the platform's memo and comment features for each generated code to produce descriptions of each organization (Tracy, 2010). A reference of all codes and the details describing their intended representations was compiled in a codebook for subsequent categorization into higher-level themes (Appendix B).

Thematic Analysis

Thematic analysis is a flexible qualitative method for systematically identifying, analyzing, and reporting patterns of meaning, or "themes," across a body of text to better interpret the nuances in a phenomenon (Braun & Clarke, 2022; Lochmiller, 2021). It involves a first cycle that summarizes text segments into codes and then a second cycle to group the codes into higher-level themes that produce an interpretable "map" of what is emphasized and how ideas are organized across the dataset (Ahmed et al., 2025; Alejandro & Zhao, 2023; Saldaña, 2021). Codes are descriptive labels, tags, or summaries used to categorize specific, meaningful segments of data (Saldaña, 2021). Thematic analysis is well-suited for analyzing public-facing

website content, as it can be applied to a variety of data units, including textual sources (Kalpokas & Hecker, 2023b; Lochmiller, 2021).

In first cycle, inductive coding is a common choice due to its data-driven and emergent nature, which requires researchers to be open to the data rather than forcing it to fit predefined codes (Miles et al., 2020; Saldaña, 2021). This coding technique allows data to be interpreted from the ground up, with codes emerging from salient points in the data itself (Kalpokas & Hecker, 2023b). In the second cycle and to complement inductive coding, pattern coding is used to group similarly coded data into more meaningful units by clustering related first cycle codes into broader categories to identify themes (Saldaña, 2021). In studies involving multiple cases or data sources, thematic analysis may also incorporate cross case comparison to identify higher order "meta-themes," which capture shared patterns across cases (Miles et al., 2020; Saldaña, 2021).

Thematic Analysis in Practice

Our website analysis first followed first and second cycle coding process, then we applied a cross case analysis. For first cycle coding, we followed thematic analysis steps supported by relevant research frameworks and guides (Ahmed et al., 2025; Kalpokas & Hecker, 2023b; Braun & Clarke, 2022). The first step was to become familiar with the data by reading and rereading the text to better understand the website's content. Initial ideas and an AI-generated summary (via ATLAS.ti) were created for each website to reinforce context and identify potential broad themes. This data immersion enabled us to generate the initial inductive codes from a close reading of the text. Each code was either a few words or a short sentence to capture salient meaning; detailed notes about the code were listed as "comments" via ATLAS.ti's features. The comments provided descriptions, ensuring that the full meaning of the coded data

was captured. We then refined these codes once for each website through a reflexive, iterative process as new pages were analyzed and code definitions were clarified. Second cycle coding employed pattern coding to categorize within website codes and identify broad themes for each organization. Lastly, a cross case analysis was conducted across all the themes from all the websites to identify and categorize similar themes into central "meta-themes" (Figure 1).

To enhance the rigor and credibility of the analysis, we incorporated multiple strategies throughout the coding process. Intercoder reliability was assessed by comparing and discussing coding decisions to improve the consistency and clarity of code definitions, ensuring transparency, reflexivity, and trustworthiness (Saldaña, 2021; Tracy, 2010).

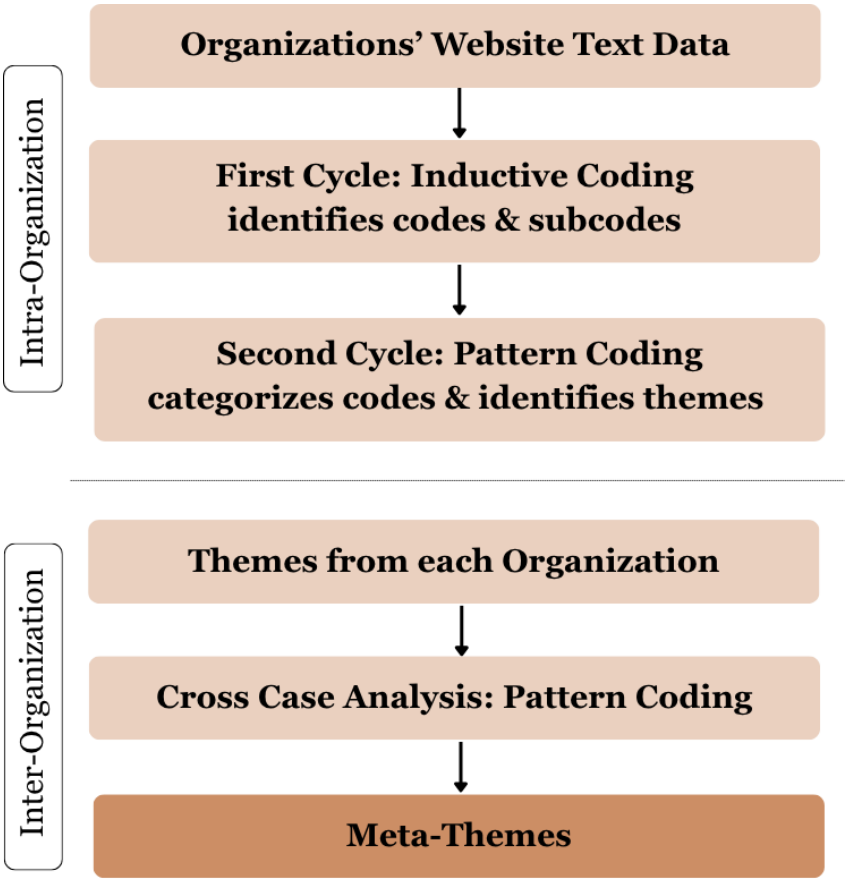


Figure 1. The thematic analysis process: website textual data was analyzed via intra-organization coding (first cycle and second cycle), followed by inter-organization cross case analysis to derive overarching meta-themes.

Ethical Considerations

The data for this study were collected from our focal organizations' publicly accessible web pages. This study did not involve human subjects, no private information was accessed, and no personally identifying information not already publicly available was collected. Because all website content was public, the analyses add no additional risk to organizations. All interpretations are our own.

FINDINGS

The thematic analysis of the seven organizational websites identified themes within and across all organizations (Appendix B). The following four meta-themes emerged from the cross case analysis describing patterns in the organizations' discourse on WHB. These meta-themes reflect recurring narratives about (1) WHB status and organizational authority in management, (2) competing definitions of management (3) proposed management pathways, and (4) the role of science and public knowledge in shaping understanding on WHB issues. Each theme contained several nuanced subthemes reflecting differences in how organizations interpret WHB ecology, management, and related topics.

WHB Status & Organizational Authority in Management

Across the dataset, two closely related subthemes emerged. First, organizations articulated the status and role of WHB, describing their ecological, legal and cultural roles that justify specific management approaches. Organizations varied in their definitions of WHB which included biological origins (e.g., native, returned native, indigenous, feral), legal classification (wild free-roaming), and cultural symbolism (e.g., American heritage symbols), which at times competed with one another. These status narratives shaped subsequent positions on how WHB should be managed, such as through land allocation, population control, removal from the range,

and discussing the legitimacy of human intervention. Second subtheme: organizational authority to act. Organizations justified their involvement in WHB management: federal agencies grounded their authority primarily in law and jurisdiction, while nonprofit organizations drew upon partnerships, stewardship roles, personal ethical and moral obligations, voluntary civic duty, and cultural identity preservation. In subsequent meta-themes, an organization's role also justified why they were entitled to define issues and propose management solutions.

Federal agencies grounded WHB status and management authority in a mandate established by the Wild Free-Roaming Horses and Burros Act of 1971. For example, the BLM defined WHB as "unbranded, unclaimed, free-roaming horses and burros found on public lands," emphasizing that the agency refers to them as such because "Congress defined them that way." They went on to state that BLM and USFS are required to manage WHB by law in their respective jurisdictions in areas where these equids were found in 1971. The BLM acknowledged biologists would define WHB as feral due to their domesticated ancestry but, regardless, the agency classify the equids by their legal designation of "wild". The USFS refers to WHB as "the nation's wild horses and burros," and says that the agency "is responsible for managing the nation's wild horses and burros on National Forest System lands."

In contrast, several NGOs framed WHB status through ecological and historical narratives. The CF described wild horses as "returned native species" that are "beneficial to their habitats," and they "keeps a close eye on" WHB as part of their "Constitutional rights, [to] document abuse and hold BLM accountable." The AWHC stated that "wild horses play a significant role in shaping the ecosystems they inhabit" because "America is the birthplace of the world's first horses." This organization asserts they are "keeping America's promise to wild horses" by also exercising voluntary civic engagement in government oversight and policy

reform for the betterment of WHB. Other organizations grounded their legitimacy through stewardship and partnership roles. The SWAT framed its mission around "keeping Sand Wash Basin wild," emphasizing its role in fertility control efforts to help maintain horses on the range, while the MHF highlighted the cultural heritage of mustangs as "descendants of horses who first came to the Americas." Finally, the CWHR acknowledged the ongoing debate surrounding WHB origins while emphasizing their cultural importance. They noted that mustangs (wild horses) are widely viewed as a "culturally significant part of the American West."

Table 2. Comparison of organizational perspectives on WHB status and role, and sources of authority to act in management.

Org	WHB Status & Role	Organizational Authority to Act
BLM	Legally defined "wild free-roaming" equids regardless of feral biological status; cultural heritage symbols	Statutory & jurisdictional authority on BLM lands under the 1971 Act (Public Law 92-195, 1971).
USFS	Legally defined wild horses with historic American significance	Statutory & jurisdictional authority on USFS lands under the 1971 Act (Public Law 92-195, 1971).
SWAT	Wild horses deserve protection on the range	Partnership with BLM for fertility control
MHF	Heritage mustangs descended from historic horses; legally defined "wild"	Former partnership with BLM to support adoption of WHB
CF	Returned native species beneficial to ecosystems	Advocacy and public oversight
CWHR	Feral descendants with cultural significance deserving freedom protection	Ethical stewardship through sanctuary
AWHC	Native species and ecological participants	Policy advocacy, coalition building, and litigation

Competing Definitions of Management

Organizations differed in how they defined the central management issues surrounding WHB on public lands. Two closely related subthemes emerged: "Problem" Definition and "Balanced Range" Management. Organizations differed in what they identified as the underlying driver of conflict, or the "Problem" Definition. Some organizations, including BLM, framed the problem primarily as unchecked population growth and ecological pressure on rangelands, emphasizing the need for management intervention to maintain healthy herds and multi-use landscapes. Other organizations framed policy and management itself as the problem, arguing that policy is biased towards other interest groups while management practices such as roundups (gathers), removals, and subsequent captivity create systemic welfare harms, while sometimes overlooking broader ecological or land-use dynamics. The meta-theme, "Balanced Range" Management, was interpreted from the "Problem" to emphasize desired ecological & management outcomes through stewardship of WHB and land. The meta-theme's meaning is shaped by how WHB and the land are managed, which varies with WHB's place on the range, management trade-offs, and priorities such as habitat capacity, multiple land uses, and WHB population regulation. These differing problem definitions ultimately shape how organizations interpret ecological "balance" on rangelands and determine which management actions they view as necessary or harmful to WHB.

Variation across organizations reflected these contrasting interpretations of both the problem and what constitutes balance on public lands. Federal agencies emphasized population growth and rangeland capacity as the primary drivers of management intervention. For example, the BLM stated that because WHB lack sufficient natural predators, "if left unmanaged herds can double in size in just four to five years and quickly outgrow the ability of the land to support

them," which can "overwhelm the food and water available to them" and damage rangelands. In contrast, NGOs often framed the problem as stemming from management practices themselves. The CF argued that horses are being "managed into extinction" through removals that separate family bands, and that rangeland degradation is primarily caused by livestock grazing rather than horses. Similarly, AWHC described federal management as resulting in WHB's "unfair resource allocation…cruel and costly helicopter roundups, and overburdened holding facilities." The AWHC viewed balanced management as maintaining healthy landscapes by protecting predators, habitat restoration, mitigating livestock grazing, and allowing WHB to be natural components of their ecosystems. Other organizations emphasized more specific management concerns. The SWAT framed fertility control as a way to address population growth while preventing gathers, stating that "by lowering the birth rate, we are preventing the gather and removal of horses." Meanwhile, the MHF highlighted the growing number of horses already removed from the range, noting that "more than 64,000 wild horses and burros are in off-range holding facilities." Finally, the CWHR focused on the welfare consequences of captivity, questioning whether horses confined to holding facilities remain the same animals when their freedom and family structures are removed. Across these perspectives, organizations differed not only in how they described the management problem but also in how they interpreted what a balanced and responsibly stewarded rangeland should look like.

Table 3. Comparison on organizational perspectives that emerged from Competing Definitions of Management and its subthemes: "Problem" Definition and "Balanced Range" Management.

Org	"Problem" Definition	"Balanced Range" Management
BLM	Unchecked population growth due to lack of natural predators causing resource scarcity, land degradation, and animal welfare risks	Balance best achieved through maintaining AML, active management, and sustaining "healthy horses on healthy rangelands" within multiple-use landscapes

USFS	No emphasis	Balance best achieved through minimal intervention while maintaining ecological conditions across multiple uses
SWAT	Population growth acknowledged but emphasize avoiding gathers	Balance best achieved by fertility control and habitat stewardship to keep horses on the range
MHF	Growing number of horses in off-range holding facilities	Balance best achieved through AML monitoring and adoption programs that move horses off-range
CF	Mismanagement and livestock-driven land conflicts; removals harm horse family structures	Balance best achieved through natural regulation (e.g., predation and weather conditions), habitat protection, and reduced livestock pressure
CWHR	Roundups and captivity harm horses and remove their freedom	No emphasis
AWHC	Federal management failures, livestock grazing permit conflicts, and inhumane gathers & holding infrastructure	Balance best achieved through habitat restoration, WHB regulation via predators, and equitable land allocation for WHB

Management Pathways

Many of the organizations converged and diverged in the management pathways they proposed for addressing WHB populations on-range and off-range. Four related subthemes emerged: on-range management tools, gather and removal practices, off-range futures, and animal welfare positions. While most organizations acknowledged that some form of management is needed, they diverged in which tools were considered ethical, effective, or legitimate. Federal agencies described management as a pragmatic "toolbox" involving population inventories, fertility control, gathers, removals, and adoption programs to maintain herd sizes consistent with the land's WHB carrying capacity, considered together with other co-occurring land uses. In contrast, several NGOs promoted alternative approaches that prioritize keeping horses on the range through fertility control, habitat stewardship, and predator protection, while reducing livestock grazing. Disagreement over management tools was

especially evident in viewpoints surrounding gathers and removals, which some organizations framed as necessary to maintain ecological balance, while others described them as harmful interventions that trigger welfare concerns and perpetuate cycles of physical and psychological harm. These differing perspectives also shaped how organizations envisioned the future of horses removed from the range, including adoption programs, sanctuary models, or the return of horses to restored habitats. Regardless of the management pathway taken, animal welfare is deeply embedded and strongly considered by all organizations to ensure the safety and well-being of WHB.

Federal agencies primarily describe their management as using a set of practical tools to regulate herd size and protect rangelands. For example, BLM described management as conducting population surveys and maintaining herd sizes through fertility control vaccines, and "periodically gathering and removing excess animals" when populations exceed appropriate management levels. Similarly, the USFS referenced maintaining WHB inventories on national forest lands and removing excess animals when necessary. The NGOs do not have a federal mandate to manage WHB, yet still emphasized what management strategies BLM should use, particularly alternative strategies designed to reduce removals. The NGOs that contract with BLM or otherwise manage WHB favor the use of certain management tools. The Sand Wash Advocate Team, which works with BLM to administer fertility control, highlighted the importance of fertility control and extensive herd documentation, noting that volunteers "document births, deaths, and injuries" and administer fertility treatments to reduce population growth. For instance, AWHC promoted "in-the-wild management" strategies, including habitat restoration and fertility control programs. In contrast, some organizations focused on the ethical consequences of management practices themselves. The CF criticized helicopter roundups,

stating that horses are “rounded up by the thousand, losing in an instant what they value most—freedom and family.” Similarly, the CWHR framed captivity as fundamentally incompatible with the nature of wild horses. These perspectives extended to off-range management, where federal agencies described adoption programs as responsible placement pathways, while NGOs criticized holding facilities as costly and harmful forms of captivity.

Table 4. Comparison of organizational perspectives that emerged from Management Pathways and its subthemes: On Range Tools, Gather & Removal Position, Off-Range Futures, and Animal Welfare Position.

Org	On-Range Tools	Gather & Removal Position	Off-Range Futures	Animal Welfare Position
BLM	Surveys, fertility control, helicopter gathers, bait trapping	Necessary & humane to prevent rangeland degradation	Corrals, pastures, adoption and sale programs	Welfare ensured through CAWP, veterinary oversight
USFS	Population inventories & monitoring	Use when populations exceed AML	Adoption and title transfer	Protection from harm during adoption period
SWAT	Active: Fertility control, herd documentation, & habitat stewardship	Prefer reducing gathers by using fertility control & small bait-traps	Not applicable	Welfare tied to keeping horses free on the range
MHF	Not applicable	Acceptable if populations exceed capacity; removals lead to large-scale holding pressures	Adoption mission via training programs & events	Welfare linked to placement in homes
CF	Fertility control, predator protection, & habitat restoration preference	Oppose helicopter roundups	Critical of captivity and holding	Welfare tied to family preservation and freedom
CWHR	Limited reference	Critical of large-scale roundups; removals lead to harmful captivity	Sanctuary model restoring autonomy	Welfare linked to freedom and wild identity
AWHC	Active: fertility control, habitat restoration, & predator protection	Condemn roundups as harmful cycle that leads to compensatory WHB population growth	Critical of holding facilities	Humane management = on-range population control without roundups & removals

Role of Science & Public Understanding

Nearly all organizations describe science, knowledge, and public understanding as central components of WHB management discourse. Two closely related subthemes that emerged are the role of scientific knowledge as a tool for informing or contesting management decisions and the role of public education and mobilization in shaping how audiences interpret WHB issues. While many organizations referenced science as a source of credibility, they differed in how scientific knowledge was interpreted and applied. Federal agencies emphasized scientific monitoring, research partnerships, and data collection as tools for informing management decisions and improving management practices. In contrast, several NGOs used scientific studies and institutional reports to challenge agency narratives or highlight perceived inconsistencies in federal management. At the same time, nearly all organizations attempted to shape public understanding of WHB management through educational materials, outreach initiatives, or calls for civic participation. These efforts positioned knowledge not only as a source of authority but also as a mechanism for engaging the public in the ongoing governance of WHB.

Variation across organizations reflected different approaches to producing and sharing knowledge about WHB management and mobilizing the public. Federal agencies primarily framed science as a foundation for evidence-based management. For example, the BLM emphasized that it "uses science to monitor rangeland vegetation, soils, water, wildlife habitat and the effects of wildfire" and relies on research partnerships with institutions such as the U.S. Geological Survey and universities to inform management decisions and advance tools. The agency also addressed contested interpretations of scientific findings, stating that claims that the National Academies of Sciences recommended ending gathers are "completely erroneous." Some organizations emphasized participatory forms of knowledge production. The SWAT

explained that "a large part of our work centers around herd documentation," encouraging visitors to share photographs and observations to track herd social dynamics. Non-governmental organizations often used scientific evidence to challenge federal management narratives. The CF argued that "when the actual data is examined…BLM data tell a vastly different story," while also citing studies suggesting that wild horses are "positively contributing returned natives in North America." The AWHC emphasized "science-based management" through research on herd genetics, population trends, and movement patterns, and referenced scientific reports such as the National Academies report (NAS, 2013) to critique federal management practices. In addition to scientific evidence, many organizations sought to shape public understanding of WHB issues through outreach and engagement. For example, BLM provides educational resources and "common myths and facts" fact sheets about WHB management, while non-governmental organizations encourage public participation through documentation, policy engagement, or educational campaigns. The approaches demonstrate how organizations use science and public education both to inform management and to influence how audiences interpret WHB governance debates.

Table 5. Comparison of organizations' perspectives that emerged from Role of Science & Public Understanding and its subthemes: Use of Science & Knowledge and Public Education & Mobilization

Org	Use of Science & Knowledge	Public Education & Mobilization
BLM	Scientific monitoring, population genetics research, fertility control research, partnerships with USGS & universities	Myth-busting, educational resources, program explanations, & adoption outreach
USFS	Inventory of WHB; minimal emphasis	Cultural education on the heritage & genetic influence of wild horses
SWAT	Herd documentation, demographic databases,	Encourages visitors to participate in monitoring by submitting photos &

		engaging in range experiences
MHF	Minimal emphasis on scientific research	Educational resources, glossaries, & adoption education
CF	Uses scientific studies and institutional reports to challenge BLM narratives	Encourages civic engagement, observation of roundups, & advocacy participation
CWHR	Philosophical debates around contested issues like WHB nativity & off-range holding	Public visits to refuge & experiential education
AWHC	Extensive use of scientific studies, genetics research, & monitoring data	Educational campaigns & outreach to policymakers and the public

The thematic analysis identified four meta-themes: *WHB Status & Organizational Authority in Management*; (2) *Competing Definitions of Management*; (3) *Management Pathways*; (4) *Role of Science & Public Understanding*. These four meta-themes illustrate how organizations communicate distinct narratives about WHB through interconnected interpretations of legal status and organizational authority, problem definition, management pathways, science and knowledge production, and the public's involvement and understanding. The organizations varied on how they define WHB's place on public lands and how they have the authority to act on their management principles. Conflicting perspectives shaped how organizations interpret the central management problem on public lands, whether framed as ecological imbalance, policy failure, or land-use conflict. In turn, the problem definitions inform the management pathways organizations advocate for, including differing views on population control tools, removals, off-range futures, and welfare considerations. Lastly, organizations rely on scientific knowledge and public education to support their interpretations of WHB management and encourage public engagement. Together, these themes demonstrate that WHB management debates extend beyond ecological concerns to include competing interpretations of governance, stewardship, and the

role of knowledge in shaping public understanding of this complex socio-ecological issue and wicked problem.

DISCUSSION

Although the four meta-themes are presented as analytically distinct categories, they are closely interwoven within and across the organizational narratives. The organizations rarely discussed WHB status, problem definitions, management pathways, or scientific knowledge in isolation; instead, they described how they operate as interconnected narrative components that shape how the issue is interpreted. Various topic patterns that emerged from this analysis have been identified previously by others who have examined challenges in WHB management. These include persistent disagreements among stakeholders regarding WHB's ecological impacts, the legitimacy of land manager's management of WHB, and the appropriate stewardship of public lands (Hennig et al., 2021; Norris, 2018; Scasta et al., 2018; Rikoon, 2016).

Our study reinforces the characterization of wild horse and burro management as a wicked socio-ecological issue, where disagreement persists not only because of competing values but also because stakeholders define the issue itself in fundamentally different ways (Carcasson, 2016; Ostrom, 2009). The meta-themes and sub-themes that emerged illuminate how narratives about WHB management diverged and at times converged in how organizations defined the ecological role of horses specifically, drivers of rangeland degradation, and legitimacy of management interventions. In areas of divergent interpretations, disagreements mirror broader scholarship on wildlife management conflicts, demonstrating that environmental disputes often arise from conflicting understandings of ecological processes, governance responsibilities, and differences in ethical interpretations (Manfredo et al, 2021; NRC, 2013; Rikoon, 2016; Scasta et al., 2018). The meta-theme of the role of science in WHB management

underscores an important pattern across organizations and their websites. While ecological research documents the impacts of these equids on semi-arid ecosystems when populations exceed carrying capacity (Beever & Aldridge, 2011; Davies et al., 2014), the websites analyzed reveal that the organizations interpret these ecological realities through distinct narrative frameworks that prioritize different aspects of the issue. For example, CF and AWHC view WHB as native species that contribute positively to their environment and highlight scientific evidence for this claim, while simultaneously using evidence to counter BLM's management decisions.

These findings highlight how organizational websites function as informal informational environments where ecological knowledge is curated, interpreted, and communicated to the public. Prior research suggests that socially recognized issues that require responses are rarely presented as neutral collections of facts, but rather communicated through narrative structures that define the problem, identify responsible actors, and justify solutions (Jones & McBeth, 2010; Stone, 1989). The organizational website content analyzed in this study found similar patterns; coherent narratives were communicated that linked WHB status, management problems, and proposed solutions into internally consistent storylines. Federal agencies emphasized legal mandates and scientific monitoring to justify management interventions, while NGOs frequently highlighted welfare concerns, land-use conflicts, or alternative ecological interpretations to challenge the BLM's approaches. These findings support previous research demonstrating that environmental communication plays an important role in shaping public understanding of wildlife governance and institutional legitimacy, and informing positionality (Fu et al., 2024; Wæraas, 2020).

The results also underscore the importance of ecological and species literacy in enabling the public to interpret competing claims and make better-informed decisions about wildlife management (Balgopal et al., 2012; Hooykaas et al., 2019). Given that public understanding of WHB ecology and management is limited (Frey et al., 2024), individuals encountering competing interpretations of ecological processes may have difficulty evaluating them. In this context, organizational websites may play a consequential role in shaping the public's environmental understanding, particularly organizations that present ecological information through narrative structures that emphasize specific values, beliefs, priorities, or management interpretations (DeConcini & Rice, 2021; Nost et al., 2021).

Educational Value and Applications

Our findings support the continued need for rigorous, science-based management of WHB and ecological understanding of these equids (NRC, 2013; Schoenecker et al., 2021). Continued research on these topics may have important implications for environmental education and public engagement with wildlife management issues. The debates surrounding WHB involve complex ecological processes and contested policy decisions, so science-informed educational approaches may help learners evaluate competing claims more effectively. Science, paired with the findings of this study, can provide opportunities for translating WHB management into educational contexts.

The study's findings on ecological processes, management practices and tools, and ethical responsibilities around animal welfare can provide useful case studies for helping learners evaluate environmental issues. In classroom settings, these materials can support activities that ask students to evaluate competing claims about wildlife management using scientific evidence and reasoning. For example, instructional approaches such as Claim–Evidence–Reasoning

(CER) combined with evaluating ecological trade-offs can help students analyze and understand stakeholder perspectives, interpret ecological data, and reflect on the complexities of decision-making in socio-ecological systems. Such activities can strengthen ecological and species literacy by encouraging learners to critically assess environmental information and understand how scientific knowledge, values, and policy interact and sometimes clash in real-world conservation issues (Balgopal et al., 2012; Bennet et al., 2017; Hooykaas et al., 2019).

CONCLUSION

This study examined narratives communicated on the websites of seven federal agencies and nonprofit organizations related to WHB. Through a thematic analysis of website content, patterns in WHB-related topics emerged, reinforcing pre-existing findings, and the themes could be used to construct lessons in both formal and informal educational settings. This study underscores a distinct concern that thematic analysis alone may not uncover: how narratives around WHB are constructed through rhetoric to influence the public. Organizations communicated the "what" about WHB, going so far as to provide educational materials (e.g., glossary terms, "read more" selected evidence on WHB ecology, and citing scientific institutions), so "how" these interpretations were constructed was also consequential to persuade their audience. This study's findings highlighted how organizational websites that take a WHB advocacy stance often interpret topics of WHB through a niche and identity-and-value-laden lens, so their rhetorical strategies differed from those of federal agencies or partnered organizations that were less identity- and value-laden

CHAPTER 3: A RHETORICAL DISCOURSE ANALYSIS OF ORGANIZATIONS' WEBSITES ON WILD HORSES & BURROS

INTRODUCTION

Environmental management issues often involve competing values, policy priorities, and contested interpretations of scientific information, particularly when decisions affect multiple stakeholders (Manfredo et al., 2021; Scasta et al., 2018). In these contexts, communication plays a central role in shaping how issues are understood and how responses are evaluated (Brosch, 2021; Dahlstrom, 2014). Rhetorical communication is understood as the strategic use of language and discourse to construct meaning, establish credibility, and position actors within specific social and cultural contexts (Andrus, 2012); it further influences how audiences interpret environmental information and assess competing claims (Diaz Ruiz & Nilsson, 2023; Sanford et al., 2023; van Leeuwen, 2007).

Organizations play an important role in this process through their websites, which function not only as informational resources but also as informal learning spaces where environmental issues are interpreted and understood (Ardoin & Heimlich, 2021; Falk, 2005; Nost et al., 2021). These platforms allow organizations to selectively present evidence, construct narratives, and assert authority, shaping how audiences perceive ecological risks and management strategies (Brosch, 2021; Dahlstrom, 2014; Ardoin & Heimlich, 2021; Falk, 2005). Individuals frequently rely on these sources when seeking environmental information (Wilkins et al., 2018; Frey et al., 2024), and in the context of wild horse and burro (WHB) management, public knowledge is often limited, increasing the influence of how information is communicated (Frey et al., 2024).

The management of WHB in the western United States is a contested socio-ecological issue shaped by ecological conditions, legal mandates, and differing stakeholder values (NRC, 2013; Scasta et al., 2018). Disagreements extend beyond ecological evidence to include interpretations of animal welfare, cultural significance, and management approaches (DeConcini & Rice, 2021; Norris, 2018). Wild horses are also embedded in cultural narratives of freedom and heritage, further shaping how they are perceived and valued (DeConcini & Rice, 2021; Rikoon, 2006). In this context, rhetorical framing, emotional appeals, and selective use of information may influence how the public interprets WHB management.

This chapter builds on the thematic analysis presented in Chapter Two by examining how organizational narratives about WHB are rhetorically constructed and communicated. Using rhetorical discourse analysis (Andrus, 2012), this study examines how federal and non-governmental organizational websites use Aristotelian appeals of ethos, pathos, and logos (Varpio, 20178) to establish credibility, evoke emotional and moral responses, and justify claims about WHB management. These findings also inform the development of a K–12 curriculum by supporting students' ability to critically evaluate information, recognize persuasive strategies, and engage with complex socio-ecological issues.

RESEARCH QUESTIONS

I. How do U.S. federal agencies managing wild horses and burros and non-governmental organizations dedicated to these species use the rhetorical strategies of ethos, pathos, and logos to influence wild horse and burro public discourse?

II. What (a) similarities and (b) differences in the rhetorical strategies can be identified across organizations and agencies?

III. How can rhetorical assessment be incorporated into a K-12 wild horse and burro curriculum to build knowledge of WHB while also building (a) media literacy, (b) argumentation, and (c) reasoning skills?

METHODS

We performed rhetorical discourse analysis for the same organizations we studied for the thematic analysis described in Chapter Two (Table 1). Our focus on organizational websites and the textual data contained within, and the use of the ATLAS.ti coding software platform, also carries over from Chapter Two. Here, we continue our assessment of organizational communication with the public via websites by conducting rhetorical discourse analysis to examine the use of the Aristotelian appeals: ethos, pathos, and logos.

Table 1. Overview of federal and non-governmental organizations included in analyses.

Org	Organization Type	Description
BLM	Federal Agency	Manages WHB on multiple-use public rangelands
USFS	Federal Agency	Manages WHB on National Forest System lands, including national forests and grasslands
SWAT	501(c)(3) nonprofit	Grassroots advocacy group focused on fertility control management of wild horses in Sand Wash Basin, CO; Formal partnership with BLM
MHF	501(c)(3) nonprofit	Training program & adoption facilitation; Previous partnership with BLM
CF	501(c)(3) nonprofit	National nonprofit advocating for WHB
CWHR	501(c)(3) nonprofit	Off-range sanctuary/refuge for wild horses in CO
AWHC	501(c)(3) nonprofit	National nonprofit advocating for WHB

Rhetorical Discourse Analysis

To examine how organizations communicate about WHB, we conducted a rhetorical discourse analysis of text from selected organizational websites representing a diverse set of characteristics (see Chapter Two). Rhetorical discourse analysis examines how communicators

deploy rhetorical strategies within discourse to persuade and accomplish objectives and organize activities, allowing researchers to understand how and why language is persuasive (Andrus, 2012). Because organizational websites serve as public-facing platforms that communicate positions on WHB management (Frey et al., 2024; Norris, 2018), rhetorical discourse analysis provides an appropriate approach for examining how persuasive language is used to shape readers' understanding of management issues.

Rhetorical Discourse Analysis in Practice

Our team examined how organizations used rhetorical devices (ethos, pathos, logos) to communicate and justify claims about WHB issues. Specifically, we identified Aristotelian rhetorical appeals (ethos, pathos, and logos) employed by each organization on their websites (Rubinelli, 2018; Varpio, 2018). *Ethos* was expressed through strategies that established credibility and authority, including claims of expertise, institutional affiliations, scientific credentials, and references to expert sources. *Pathos* emerged through emotive language, including descriptive imagery, anthropomorphism, moral appeals, and romantic narratives about wild horses. *Logos* was communicated through logical argumentation and evidentiary claims, including statistical data, ecological reasoning, scientific citations, and policy references.

To systematically identify rhetorical appeals across all organizations, we employed a hybrid deductive and inductive coding approach (Figure 1). Deductive coding uses predetermined codes expected to appear in the data, whereas inductive coding allows codes to emerge from the data itself (Saldaña, 2021). We used a deductive approach to identify the rhetorical appeals we expected to find on the organizational websites: ethos, pathos, and logos (Prelli, 1989). We then used Inductive coding to identify the cues for appeals that we did not necessarily anticipate. For example, ethos-related codes included: claims of expertise,

institutional legitimacy, moral or ethical character, and borrowed authority through references to credible sources. Pathos-related codes included imagery, metaphors, moral appeals, emotive language, romanticism, and anthropomorphism. Logos-related codes captured forms of logical argumentation, such as causal claims, ecological reasoning, quantified data, and scientific citation.

Each coded excerpt was assigned to a rhetorical device label and accompanied by a brief description explaining how the rhetorical cue functioned within the text. We conducted this coding within each website individually to construct a rhetorical codebook describing the persuasive strategies used by each organization. After coding was completed for all websites individually, we conducted a cross case analysis (Miles et al., 2020) to identify patterns of rhetorical strategy across organizations. This comparison allowed us to examine similarities and differences in how organizations relied on ethos, pathos, and logos to frame WHB management issues, communicate their positions, and appeal to their audiences.

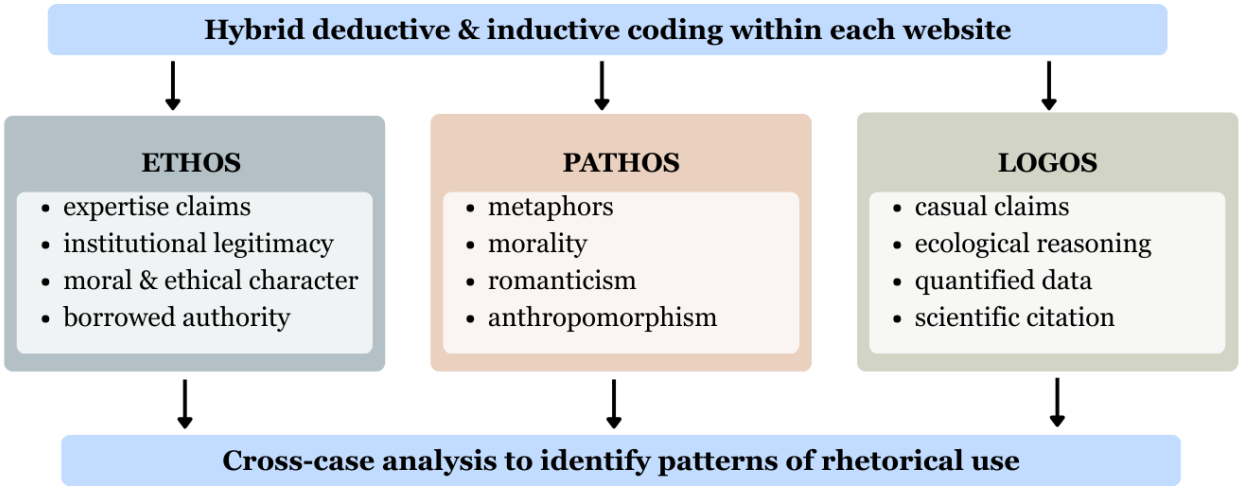


Figure 1. Each website's textual data was coded using a hybrid deductive and inductive approach. Deductive coding identified the rhetorical appeal (ethos, pathos, logos) while inductive coding identified each appeal's respective cues. Following the intra-organization analysis, a cross-case analysis was conducted.

Ethical Considerations

The data analyzed for this study were collected from publicly accessible web pages. This study did not involve human subjects, no private information was accessed, and no personally identifying information was collected that was not already publicly available via the websites.

FINDINGS

A within-case rhetorical analysis report was developed for each organization (Appendix C). Ethos, pathos, and logos are discussed separately, although they frequently appear together and reinforce one another to support the organization's messaging. The following findings emerged from the cross case analysis of the selected organizations' websites.

Ethos – Establishing Trust, Credibility, & Authority

I. Ethos in Federal Agency Discourse

Federal agencies establish trust, credibility, and authority primarily by emphasizing their legal authority, institutional responsibilities, and management expertise. Both the BLM and the USFS explicitly ground their roles in federal law, emphasizing that their management responsibilities are defined by congressional mandate. For example, the USFS states that "The Wild Free-Roaming Horses and Burros Act of 1971… provides for the protection, management, and control of wild horses and burros," and explains that the agency manages these animals "by authority of the Secretary of Agriculture." These references position the agency within the federal governance structure, ensuring that management actions are carried out within legally defined responsibilities.

The BLM similarly grounds its authority in institutional responsibility and the scale (also a logos appeal) of its management duties. For instance, the agency explains that it "manages and protects wild horses and burros on 25.5 million acres of public lands," highlighting both its

jurisdiction of public lands and the quantified scope of its oversight. The BLM also emphasizes that the Wild Horse and Burro Program was created specifically to implement the 1971 Act, reinforcing that its management activities are tied directly to congressional direction. In addition, the BLM frequently uses a "MYTH" and "FACT" format to present opposing claims alongside evidence-based responses (logos), positioning itself as an authority capable of addressing and correcting misinformation. This structure reinforces the agency's credibility by framing its communication as both corrective and evidence-based, using appeals to logos.

By repeatedly referencing law, agency mission, and program mandates, the agencies position themselves as legitimate managers acting within established governance structures. Credibility is further reinforced through references to monitoring systems and administrative oversight. The USFS notes that it must "maintain an inventory of wild horses and burros on National Forest System lands," emphasizing systematic monitoring and accountability. Similarly, BLM materials describe population surveys, program statistics, and management data that demonstrate ongoing oversight of herd numbers and range conditions on BLM-managed Herd Management Areas (HMAs). The references to monitoring, inventories, and data collection highlight professional expertise and signal that management decisions are informed by technical assessments rather than arbitrary choices.

Together, these communication strategies construct an image of federal agencies as responsible stewards of public lands whose actions are guided by law, administrative responsibility, and ecological management goals that are grounded in scientific research. Through references to legal mandates, monitoring systems, and agency mission statements, the BLM and USFS present themselves as credible authorities tasked with balancing the protection of wild horses and burros with broader public land responsibilities.

II. Ethos in NGO Discourse

Compared with federal agencies, the non-governmental organizations (NGOs) do not have formal legal authority granted by Congress. The NGOs establish credibility, trust, and authority in their involvement in WHB management through partnerships, stewardship roles, civic engagement, moral and ethical responsibility, and the preservation of cultural identity. Across organizations, ethos was built by explaining their involvement in WHB management and the basis for their authority to act. For example, AWHC presents itself as "the nation's champion for humane, in-the-wild protection," emphasizes that it "leads efforts to implement humane management solutions," and works with policymakers to influence outcomes. Similarly, the CF highlights its role in advocacy and public engagement, encouraging audiences to "help us communicate with lawmakers" and framing its work as part of broader efforts to protect wild horses through civic participation. In these cases, credibility is constructed through leadership, advocacy, and active involvement in policy shaping, rather than through formal authority, as in BLM and USFS.

Many organizations also build credibility through stewardship and direct, hands-on involvement with WHB. This reflects the thematic finding that nonprofits justify their role through stewardship and ethical responsibility to WHB. For example, the Wild Horse Refuge describes itself as "a safe haven for wild horses" and emphasizes that it provides "exceptional care," including veterinary support, positioning the organization as both capable and responsible. The SWAT highlights its direct involvement on the range, stating that it has "certified volunteers who administer the birth control using approved methods" and that volunteers "visit the range and photograph the herd and track changes." These examples show that credibility is constructed

through visible, ongoing work with horses, which reinforces their authority as knowledgeable and engaged actors in management.

These organizations further strengthen their credibility through partnerships, experience, and demonstrated impact, which also aligns with the thematic emphasis on collaboration and civic engagement as sources of legitimacy. For instance, SWAT emphasizes their "memorandum of understanding with the Bureau of Land Management." The AWHC emphasizes their collaboration with "leading scientists, universities, and research institutions" to build credibility and legitimacy behind their role of advocacy. The MHF highlights its track record, stating it has facilitated "more than 24,000 successful placements and adoptions," demonstrating measurable outcomes and long-term involvement. This organization also described its former partnership with BLM to facilitate WHB adoptions. These references to partnerships, expertise, and results present some of the organizations as capable, experienced, collaborative, and effective in their roles.

Finally, most NGOs ground their credibility in moral responsibility and shared values, particularly regarding protection, cultural heritage, and care. The MHF states that "as Americans, we have the responsibility to preserve and steward the mustang," connecting its mission to national identity and collective duty. The MHF states, "Safeguarding the Legacy of America's Iconic Mustangs," to highlight the American cultural significance of wild horses and the need to protect them. The CWHR encourages readers to "empathize and understand what these wild and free spirits would choose," framing ethical decision-making as central to their management. Across organizations, this type of language positions advocacy not only as informed and active, but also as morally grounded, reinforcing their legitimacy to act in wild horse and burro management.

Pathos – Evoking Emotional Language

I. Pathos in Federal Agency Discourse

Federal agencies used emotional language in a restrained and controlled manner, emphasizing concern, care, and responsibility in how WHB management is presented. The BLM and USFS use controlled and scientifically technical wording to highlight risks to animals, the land, and public safety. For example, BLM explains that allowing wild horse populations to exceed available resources can lead to "more severe overgrazing and longer lasting impacts to the land." They explain that their management decisions are based on concerns about environmental damage, recognition of potential risks, and the urgency of precaution, while appealing to logos through ecological reasoning. BLM goes on to explain that large herd sizes and increasing pressure on resources underscore the scale of the issue, which can create concern about what may happen if conditions are not managed.

The BLM also incorporates emotional cues by describing harm and care, often framing management as necessary to prevent suffering. The agency explains how unmanaged populations can lead to declines in animal body condition or limited access to food and water, raising concerns about animal well-being without resorting to overly dramatic language. At the same time, the agency balances this concern with reassurance. Statements such as maintaining "healthy horses on healthy rangelands" present the agency as a caretaker working to support both the animals and landscapes. This combination of concern and reassurance positions the agency as both aware of risks and actively working to address them.

The USFS uses subtle emotional appeals centered on protection and cultural value. For example, the USFS states that it works to "protect wild horses and burros from capture, branding, harassment, or death," using terms that highlight potential harm and evoke concern for animal

welfare. The USFS also connects wild horses to American heritage, noting wild horse influence on well-known horse breeds and their place in the nation's history. These references introduce a sense of pride and cultural importance. These affective cues, concern for harm, reassurance of care, and connection to cultural identity, support the agencies' broader message that management is both necessary, responsible, and precautionary.

II. Pathos in NGO Discourse

The NGOs use emotional language more directly compared to the federal agencies. Across the websites, emotional language is used to emphasize various moods, feelings, and attitudes like concern, suffering, pride, and responsibility for WHB. To explain gathers and removals, some NGO's describe it as suffering and cruelty to WHB. The AWHC states, "Roundups are a brutal and inhumane method used to manage wild horse populations." Elsewhere, they use vivid imagery, stating, "Imagine the terror of being relentlessly pursued, the deafening noise of helicopters overhead," to describe their view of the animals' "gather" experiences. The CF also describes BLM's management practices as harmful, warning that wild horses are in danger of being "managed into extinction." This organization also frames livestock grazing on shared public lands as the cause-and-effect (logos) of the displacement of wild horses, using a metaphor to state, "This is the very heart of the war on America's wild horses." These examples show that these organizations frame BLM's current management as an emotionally, morally, and ethically concerning issue.

Another pattern we identified was the frequent use of the word "freedom," the mention of captivity, and physical and psychological feelings of loss. Several organizations describe freedom as central to wild horses' identity and well-being, presenting off-range holding of WHB as a serious emotional wrongdoing. The CWHR is especially strong in this language, telling

readers, “Never Surrender Their Freedom Instead - Give Them Refuge.” They go on to describe captured horses as those who may “never again feel the wind in their face.” The Refuge also uses vivid imagery, describing horses as being “shackle[d]” and locked into a “relatively small space,” to contrast freedom and restriction. The SWAT uses a softer approach, with an emotional appeal, by emphasizing that fertility control management helps horses remain “wild and free” and continue living in “the only home they know.” Across these examples, emotional language favored by most of the nonprofit organizations constructed freedom as a defining condition for WHB and its loss as significant.

Another pattern that emerged was appealing to American heritage, symbolic identity, and personal attachment to construct wild horses as culturally meaningful. The MHF states, “As Americans, we have the responsibility to preserve and steward the mustang, an icon of our American heritage,” appealing to shared cultural and national identity to get involved in how WHB are managed. The CF similarly drew on national symbolism by quoting congressional language stating that WHB are “living symbols of the historic and pioneer spirit of the West.” This organization also builds attachment to an individual horse named Cloud and his family by anthropomorphizing and romanticizing the herds’ experiences stating, “They live in deeply bonded family bands within a complex society of intricate re[la]tionships.” These organizations view wild horses as culturally significant symbols and beings, elevating their perceived importance beyond ecological management considerations.

All the organizations often pair emotional language with hope and calls for public action and responsibility, as the organizations themselves are involved. The AWHC not only emphasizes what they perceive as cruelty and injustice that WHB face. They highlight “Grassroots Mobilization” as “a powerful tool for driving change,” to encourage public

engagement in policy and advocacy efforts. The CWHR shifts from deep concern for WHB to hope, describing their efforts to provide sanctuary for wild horses removed from their HMAs and stating that their horses are "…now protected and have regained the freedom and independence..." Likewise, MHF's language about "loving forever homes" presented adoption as a hopeful and compassionate response to WHB in long-term off-range holding. The use of these emotional appeals constructs WHB's perceived management concerns, and it positions advocacy as both participatory and necessary.

Logos – Using Logic & Rationality

I. Logos in Federal Agency Discourse

The federal agencies used clear, structured reasoning to explain how and why WHB are managed. Across both agencies, logos were presented through cause-and-effect explanations, legal policy requirements, use of data and scientific information, and practical constraints on management. A central pattern in both agencies' communication is the use of cause-and-effect explanations to connect WHB populations with rangeland conditions. For example, the USFS explained that it must "remove excess animals from the range so as to achieve appropriate management levels" to illustrate how population size affects the ecological balance of the range. Similarly, BLM describes how increasing horse populations can put pressure on vegetation, soil, and water resources, necessitating intervention to prevent further land degradation. These explanations frame management actions as necessary responses to observable and environmental outcomes.

Both agencies also rely heavily on the measurement and scale of their responsibilities to justify their management approaches. The USFS referenced the number of territories it manages and the geographic scope of its responsibility. BLM highlights the millions of acres under its

management and uses population estimates and thresholds to guide decisions. By using numbers, defined limits, and measurable targets, BLM presents management as consistently being assessed, tracked, and adjusted for improvement over time. The use of monitoring systems and methodological explanations to show how decisions are made is another pattern we identified. The BLM states that they conduct aerial surveys and population estimates, while acknowledging the limitations of measurement and explaining how these estimates were produced. These systematic methods and data were then used by the BLM to inform or improve management decisions.

Legal and policy reasoning also play a key role in how agencies justify their actions. Both the BLM and the USFS refer to the federal law, the Wild Free-Roaming Horse and Burro Act of 1971, to explain not only their authority (ethos) but also the parameters under which they operate, including what actions are permitted, required, or limited. For example, BLM states, "Section 1339 of the [WFRHB Act] is clear about prohibiting the BLM from placing wild horses on areas of public lands where they were not found when the Act was passed in 1971." BLM cites federal law to explain why placing wild horses in Wilderness Areas is not permitted, showing that its decision-making is based on legal policy, not arbitrary choices. BLM frequently uses a "MYTH" and "FACT" format to present a claim, then responds with evidence-based corrections (highlighting ethos as well). This structure serves as a form of refutation, in which competing claims are addressed and reinterpreted using agency-supported information. The BLM also incorporates practical reasoning by explaining what is feasible under real-world conditions. For example, they reference limitations such as terrain, available resources, and whether certain actions are "practical and effective," while also discussing the financial costs

associated with managing animals both on and off the range. These explanations frame management as a balance between ecological goals and operational constraints.

Finally, both agencies use ecological reasoning grounded in scientific research to explain how wild horses interact with other parts of the system. The BLM explained that the health of the range and balancing various uses demonstrate how management decisions consider the interconnectedness of different ecosystem parts. The patterns indicate that federal agencies rely on multiple forms of reasoning to explain their management decisions: cause-and-effect explanations, WHB measurement and monitoring methods, legal rules, and practical constraints. Through these approaches, the BLM and USFS present WHB management as an evidence-informed process that is shaped by ecological conditions, legal requirements, and operational realities.

II. Logos in NGO Discourse

The NGO's uses multiple forms of reasoning to explain their positions on WHB management: presenting arguments, questioning existing explanations, and offering alternative approaches to management. A couple of organizations, CF and AWHC, use data, scientific claims, or policy reasoning that often challenge agency claims, present alternative explanations, propose different management approaches, and support their positions. The CF counters BLM's narrative that wild horses degrade the land by stating, "BLM's own database, records and reports show that commercial livestock and not wild horses are the cause of rangeland damage," using the agency's own data to counter claim and offer a different explanation of the management problem. The AWHC emphasizes research and monitoring, describing how "science-based management" and policy reform could improve WHB management outcomes. In these cases, reasoning from available scientific information and legal policy on WHB was used to question

existing explanations and to offer alternative interpretations of the WHB management issue and its outcomes.

Many organizations also use cause-and-effect explanations and ecological reasoning to support their arguments. For example, the SWAT describes fertility control as a practical alternative, explaining that "by lowering the birth rate we are preventing the gather and removal of horses." Their argument is that fertility treatment directly reduces the need for gathers and removals, ensuring wild horses are kept on the range. The CF uses this form of causal reasoning to describe the relationship between livestock grazing and land degradation, presenting livestock as the primary driver of competition and ecological pressure on the range. The CWHR uses causal reasoning differently, suggesting that increased space and freedom lead to improved animal well-being and linking environmental conditions to horse behavior and health. In these examples, NGOs explain WHB outcomes by connecting actions, conditions, and consequences.

NGOs also use structured explanations, measurable outcomes, and procedural descriptions to demonstrate that their approaches were practical and achievable. The MHF explains the expense of the "more than 64,000" WHB in off-range holding, and that their adoption program has facilitated "more than 24,000 successful placements and adoptions." This explanation demonstrates the organization's achievements by reducing holding and financial pressures, and it also explains the step-by-step process by which these animals are gathered from their HMA and placed for adoption. The CWHR also provides quantified descriptions of its sanctuary's acreage and habitat to show that its refuge provides sufficient space and resources for horses, supporting its approach as a viable alternative to off-range holding. The SWAT explains their management procedures through data collection and monitoring systems to maintain records of wild horses and track herd changes over time. This presents their work as organized,

comprehensive, and systematic. These explanations construct these organizations' management approaches as structured, observable, and grounded in measurable conditions.

Several organizations used problem–solution reasoning and cost considerations to frame their approaches as realistic options. For example, the groups mention issues such as the large scale of WHB in off-range holding and gather operations, then propose alternatives such as fertility control, adoption programs, or expanded habitat use. The CF also used economic arguments, referencing taxpayer costs and subsidies to question existing management practices and suggest that different approaches may be more efficient. Similarly, AWHC emphasized policy reform and coalition-building as ways to address management challenges through coordinated action. In these cases, reasoning focused on identifying problems and presenting specific, actionable solutions, which helped frame advocacy positions as both informed and practical.

III. Rhetorical Simplification Patterns

Within NGO discourse, a few organizations simplify or selectively interpret scientific information and reasoning to support their claims. In several cases, organizations emphasize certain findings or examples while giving less attention to the broader range of ecological and social conditions and outcomes described in the scientific literature. This pattern did not always reflect incorrect information; rather, it narrowed complex social-ecological dynamics into straightforward claims. For example, wild horses are described as having only ecological benefits, with no costs, and contributing to ecosystems or supporting habitat rewilding. The CF and AWHC cite studies and literature on equids in other regions, such as Europe, to suggest that wild horses can have beneficial ecological roles; however, these interpretations sometimes drew on context-specific studies or findings that have been debated in the broader scientific literature.

Research on WHB in the western U.S. shows that positive ecological impacts vary depending on population size, resource availability, and environmental conditions, and that overpopulation can lead to resource degradation (Beever & Aldridge, 2011; Davies et al., 2014; NRC, 2013). By focusing on positive ecological roles without consistently addressing these context-dependent outcomes, these narratives simplified how wild horses interact with rangeland ecosystems. Furthermore, the CF emphasized livestock grazing as a major source of rangeland degradation. Yet, the broader scientific literature suggests that degradation on western rangelands is typically shaped by multiple interacting factors, including grazing pressure, wild horse and burro densities, drought, invasive plants, and other land uses, with impacts varying by context (NRC, 2013). This discourse appears to simplify a complex, multi-use rangeland issue by foregrounding livestock impacts while giving less attention to the roles of WHB and other ecological stressors.

Another claim was natural population regulation, particularly predation, is a viable option to reduce human intervention. The CF and AWHC suggest that natural predators could regulate wild horse populations, presenting this as an alternative to, or a reduction in, human intervention. While studies have shown that mountain lion predation can influence feral horse populations in certain localized contexts, these effects are highly variable and depend on factors such as predator density, habitat, individual predator behavior, and prey availability (Andreasen et al. 2021; Turner & Morrison, 2001; Knapp et al., 2019). Predation alone has not been shown to regulate population growth at the scale required for appropriate management levels (NRC, 2013; Stoner et al., 2026). As a result, these predator regulation claims can present a narrow view of population regulation by generalizing findings from specific contexts. Lastly, it was argued that (commonly known as roundups) and removals contribute to population growth through compensatory reproduction. While some research has explored post-removal reproductive

responses in wild horse populations (Kirkpatrick and Turner 1991), evidence for widespread compensatory growth following removals remains limited and context-dependent (NRC, 2013; Garrott & Oli, 2013). Presenting this relationship as a consistent outcome, again, streamlines a complex ecological process.

Across these examples from nonprofit organizations, discourse tends to emphasize selective evidence or specific cases to support broader claims, which may shape how management options and ecological relationships are presented. Other areas of potential simplification could be how genetic diversity is being bottlenecked by BLM's gathers and that gathers negatively impact herd dynamics by separating "families," causing psychological trauma. These areas of potential oversimplification are of interest as they present topics for debate and the potential for readers to misunderstand ecological and biological processes. Nonetheless, this analysis did not evaluate the scientific validity of the claims each organization has made; it examined how scientific information is selected and presented in organizational discourse.

DISCUSSION

Constructing Meaning in WHB Discourse

Organizations construct meaning about WHB through rhetorical approaches that shape how management issues are interpreted. While both federal agencies and NGs address similar ecological and management challenges, they frame these issues in fundamentally different ways. Federal agencies' communications emphasize mandates, monitoring systems, and defined management thresholds, presenting management as a regulated and necessary response to ecological conditions and policy requirements. In this framing, management actions are positioned as outcomes of established procedures, legal obligations, and available data. As well as prioritizing the well-being of wild horses and burros throughout their management. In

contrast, nonprofit organizations' communications highlighted their direct involvement with WHB, partnerships, and advocacy efforts, positioning themselves as active participants in shaping management outcomes. In this way, management was presented as an ethical and social concern. The differences suggest that organizations not only presented competing claims but were drawing on different ways of making sense of the same issue. For instance, the BLM mainly emphasized structure, regulation, and constraint, focusing on avoiding landscape degradation and the associated risk to animal welfare, while nonprofit organizations emphasized care, responsibility, and a value-based interpretation of these equids.

Although both perspectives addressed similar management challenges, they differed in how those challenges were defined and what aspects were prioritized. For example, BLM viewed gathers as a necessary and relatively safe way to regulate overpopulations and prevent range degradation, yet the WHR, CF, and AWHC viewed them as physically and psychologically harmful to WHB. This example illustrates how similar information can be interpreted differently depending on how it is framed and which elements are emphasized. Ultimately, these distinctions may impact how management actions are understood and evaluated.

More Science is Necessary but Not Sufficient

Although scientific information was referenced, the use of science did not always lead to shared conclusions about WHB management across all organizations. Federal agencies and nonprofit organizations both referenced data, research, and monitoring, but nonprofit organizations differed in how evidence was selected, interpreted, and connected to their specific claims. The BLM emphasized population estimates, population thresholds, land health indicators, and activities to inform and support decisions. The CF and AWHC used scientific studies, data, and reports to question the agency's practices, propose alternative approaches, or

reinterpret ecological conditions. The MHF and SWAT used scientific or technical information more selectively, often focusing on their program outcomes, management practices, or care for WHB to relieve management pressures. The WHR took a reflective, at times philosophical approach to BLM's management, particularly regarding gathers and removals, and discussed the significance of WHB in supporting their sanctuary efforts. These differences suggest that the interpretation of scientific information was shaped by each organization's priorities and perspective.

The findings from this study further illustrate how science can be communicated and used in different ways across organizations. In some cases, BLM presents scientific information as part of its structured decision-making processes. The CF and AWHC, on the other hand, more actively used scientific studies to challenge, reinterpret, or simplify aspects of WHB management ecology. This included emphasizing certain findings, applying research across different ecological contexts, or focusing on specific outcomes that support WHB while giving less attention to other contexts that may not. These patterns reflect how complex ecological information can be selectively emphasized or simplified to support interpretations.

Overall, broader scholarship shows that scientific information is important for informed decision-making, but, by itself, it is often insufficient to resolve environmental conflicts. Given that public knowledge of WHB ecology and management is limited, it is important to better inform the public about these animals and their ecological, land use, and political contexts (Frey et al., 2024). Ongoing rigorous research on WHB is essential for understanding their ecological roles and enhancing management success (NRC, 2013; Schoenecker et al., 2021). However, increasing the volume of scientific research alone is unlikely to resolve stakeholder disagreement due to the under-researched human dimension aspect of WHB issues (Scasta et al., 2018).

Wildlife and natural resource management issues frequently involve competing values, beliefs, and priorities that influence how decisions are understood and accepted (Manfredo et al., 2021; Scasta et al., 2018). Research in science communication indicates that audiences do not evaluate evidence in isolation. Instead, they assess it through frames that signal values, trustworthiness, and alignment with identity (Nisbet & Scheufele, 2009). When stakeholders hold divergent values, scientific information may expand technical knowledge without narrowing the disagreement (Pielke, 2007). Across the nonprofit organizations, it was clear how they attached identity and values to wild horses, emphasizing freedom, cultural and national heritage, aesthetic enjoyment, romanticizing their likeness, and anthropomorphizing their behavior. Specific nonprofit organizations (CF and AWHC) selectively used scientific data to improve WHB's ecological roles and support the organization's claims. Management actions that are perceived to change the status of WHB may therefore be interpreted as symbolic threats to shared identity and moral commitments to these animals as witnessed in other cases across the U.S (Rikoon, 2006).

Educational Applications for a K-12 Curriculum

The rhetorical differences identified in this study suggest that understanding WHB management requires more than acquiring scientific knowledge alone. It involves parsing how information is interpreted through competing authority, emotional language use, and reasoning. This reflects a broader educational challenge, as students must be prepared not only to learn ecological concepts but also to navigate complex and contested social-ecological issues where multiple interpretations coexist and are shaped by differing values and priorities (Manfredo et al., 2021; Bennett et al., 2017). Such approaches in education build critical thinking and evaluative skills that will serve students beyond the current WHB topic, thereby building their scientific literacy. To better educate the public, increasing scientific information alone may not lead to

consensus, particularly when underlying values and interpretations differ (NRC, 2013). Learners may benefit from not only understanding ecological processes but also evaluating claims, weighing trade-offs, and engaging with socio-political values. Three complementary teaching pathways emerged based on the thematic and discourse analysis findings (Box 1, Box 2, and Box 3). Full lesson plans are available in Appendix A and will also be made available to the public on the Wild Horse and Burro Curriculum platform.

I. Media Literacy & Persuasive Strategies

Box 1. Lesson Plan 1
Title: Media Literacy & Persuasive Strategies
Educational Level: High School (Grades 9–12)
Description:
Students will investigate how organizations communicate about wild horses and burros by analyzing rhetorical strategies (ethos, pathos, logos) in real-world texts. Through guided exploration and discussion, students will evaluate how credibility, emotional appeals, and evidence shape public understanding of a contested environmental issue.
Learning Objectives:

- Identify rhetorical appeals (ethos, pathos, logos) in media content
- Analyze how credibility, emotion, and evidence influence interpretation
- Compare how different organizations present the same information about wild horses and burros
- Evaluate how communication influences the interpretation of environmental topics

Activity Description:
Students will review selected website excerpts from federal agencies and non-governmental organizations. Student will identify rhetorical strategies and discuss how these strategies shape their understanding of WHB management. Students then compare findings across sources to evaluate differences in messaging and perspective.

This lesson (Appendix A) will engage students in media literacy to identify rhetorical appeals (ethos, pathos, logos) within select websites from BLM, AWHC, and CF. Students will be able to annotate authority cues, emotional language, and evidence claims, then compare how different rhetorical strategies shape perceptions of the claims being made about WHB.
The objectives of this lesson plan directly address the chapter's findings that legitimacy is constructed alongside reasoning and that rhetorical simplification influences interpretation.

Teaching students to recognize persuasive strategies aligns with broader calls for media literacy and critical evaluation skills in environmental education (National Association for Media Literacy Education, n.d; PBS Learning Media, n.d).

II. Socratic Seminar on What Does "Wild" Mean

Box 2. Lesson Plan 2
Title: What Does "Wild" Mean?
Educational Level: High School (Grades 9–12)
Description:
In this lesson, students will examine different definitions of "wild" in the context of wild horses and burros. Through a Socratic seminar, students will explore biological, legal, and cultural perspectives and analyze how these definitions impact management decisions and public perception. This lesson highlights critical thinking, argumentation, and dialogue, helping students understand how language, evidence, values, identity, culture, and framing influence environmental issues.
Learning Objectives:

- Evaluate different definitions of "wild" (biological, legal, cultural)
- Analyze how language influences environmental perspectives
- Engage in evidence-based discussion, while contemplating human dimensions

Activity Description:
Students prepare for a Socratic seminar by reviewing materials on WHB status and management. During the seminar, they respond to guiding questions about how WHB's place on rangelands is understood and impacts their management. The discussion emphasizes respectful dialogue, multiple perspectives, and the role of language in shaping interpretation.

Using a Socratic seminar format (Appendix A), which is a teacher-facilitated seminar that engages student-led conversations focusing on open-ended questions, to explore the competing roles of WHB and their "wild" status. Students will examine biological definitions of nativity, ecological roles, legal designation under the 1971 Act, and cultural symbolism to discuss how each meaning influences management perspectives. This lesson addresses how language shapes ecological understanding and the consequences of each role, and echoes previous research on the disputes, ambiguity, and status of WHB (Hennig et al., 2023). By foregrounding the distinctions among biological, political, and cultural meanings of "wild," students can better

demonstrate why disagreements persist even when participants use similar ecological terminology.

III. Claim-Evidence-Reasoning & Tradeoff Evaluation

Box 3. Lesson Plan 3
Lesson Plan Title: Claim–Evidence–Reasoning & Tradeoff Evaluation in Wild Horse & Burro Management
Educational Level: High School (Grades 9–12)
Description:
Students will evaluate competing claims about wild horse and burro management using the Claim–Evidence–Reasoning (CER) framework. Students will analyze how different organizations present arguments, assess the quality of the evidence and reasoning, and examine trade-offs among ecological, ethical, and policy considerations.
Learning Objectives:

- Construct and evaluate claims using evidence and reasoning
- Analyze tradeoffs in WHB management decisions
- Integrate ecological, ethical, and policy considerations

Activity Description:
Students will examine claims from different organizations regarding WHB population management. Using CER, they will evaluate the evidence and reasoning behind each claim and develop their own balanced argument that considers ecological impacts, animal welfare, and land-use constraints.

The third lesson (Appendix A) will employ the Claim-Evidence-Reasoning (CER) (McNeill & Krajcik, 2008) framework to evaluate competing assertions about whether WHB populations exceed ecological carrying capacity. Students will compare how different organizations present claims, the forms of evidence they cite, and the causal reasoning they construct. They then develop balanced CER arguments that acknowledge both ecological impacts, animal welfare considerations, and a multi-use landscape. This activity helps explore tradeoffs, a central component of ecological literacy in a multi-use rangeland system.

CONCLUSION

This study demonstrates that organizations construct and communicate information about WHB through distinct rhetorical strategies that shape how management issues are interpreted. Federal agencies and NGOs draw on distinct combinations of ethos, pathos, and logos to present

their positions, resulting in contrasting portrayals of the same issues that are rooted in different priorities. Federal agencies primarily emphasize legal authority, scientific monitoring, and procedural responsibility. The agencies frame management as a necessary and regulated response to WHB-impacted rangeland conditions to ensure ecological and sustainable balance of this multiple-use landscape. In contrast, NGOs rely more heavily on moral framing, emotional appeals, and advocacy-based credibility. The NGOs position WHB management as an ethical and social concern, seeing WHB as sentient beings and cultural symbols that must be protected from perceived harm. These differences highlight that the organization's communication is not neutral; rather, it actively constructs meaning and may influence how the audience understands and interprets WHB management.

The findings of the study reinforce broader research in environmental communication, which shows that public interpretation of scientific information is shaped not only by evidence, but also by framing, values, and trust in information sources as exemplified in NGO's rhetoric (Brosch, 2021; Dahlstrom, 2014; Nisbet & Scheufele, 2009). In the case of WHB management, differing rhetorical strategies contribute to divergent understandings of both the problems associated with WHB management and its potential solutions. As a result, increasing scientific information alone is unlikely to resolve disagreement, particularly when stakeholders interpret evidence through different value systems and communicative frames (Pielke, 2007). Understanding how rhetoric shapes WHB interpretations is essential for improving public engagement with and education on complex environmental issues.

Importantly, these findings also demonstrate the value of integrating rhetorical analysis into environmental education. The lesson plans developed in this chapter provide a pathway for translating these insights into classroom practice by supporting students' ability to analyze

information, evaluate competing claims, and engage with socio-ecological complexity. By combining ecological content with media literacy, argumentation, and reasoning skills, these instructional approaches help prepare students to navigate environmental issues where multiple perspectives, values, emotions, beliefs, and interpretations coexist. Together, this work highlights the importance of not only what information is communicated about WHB but also how it is communicated and how these processes may shape public understanding and decision-making.

SYNTHESIS

Wild horse and burro management in the western United States represents a complex socio-ecological issue shaped by ecological conditions, legal mandates, and competing human values (NRC, 2013; Scasta et al., 2018). This thesis examined how these complexities are communicated through organizational discourse and how such communication influences public understanding. Across three chapters, this research moved from establishing the broader ecological and historical context of WHB (Chapter 1), to identifying dominant thematic patterns in organizational messaging (Chapter 2), and finally to analyzing how those messages are rhetorically constructed (Chapter 3). Together, these findings suggest that organizational discourse constructs particular ways of framing and communicating WHB management, which may influence how these issues are interpreted by audiences.

Chapter 2 identified four cross-case meta-themes—*WHB Status & Organizational Authority in Management; Competing Definitions of Management; Management Pathways; and Role of Science and Public Understanding*—that structured how organizations present WHB issues. While organizations addressed similar topics, they differed in how they defined and prioritized these themes. For example, organizations varied in how they positioned WHB status (e.g., ecological role, legal designation, or cultural significance) and in how they constructed legitimacy to act, whether through statutory authority, partnerships, or moral responsibility. Similarly, organizations differed in how they defined the central management problem and what constituted appropriate solutions, particularly in relation to gathers, fertility control, and off-range management. These findings indicate that WHB discourse reflects differing interpretations

of the issue rather than a shared understanding of a single problem (DeConcini & Rice, 2021; Scasta et al., 2018).

Chapter 3 extended these findings by demonstrating that these thematic differences are reinforced through distinct rhetorical strategies. Federal agencies primarily construct ethos through legal authority and institutional responsibility, employ logos through data, monitoring, and policy-based reasoning, and use pathos in a restrained manner to emphasize risk and care. In contrast, NGOs construct ethos through advocacy, partnerships, and stewardship, use more explicit pathos to emphasize suffering, freedom, and cultural identity, and employ logos to challenge, reinterpret, or selectively present scientific and policy information. These patterns illustrate how organizations use rhetorical appeals—ethos, pathos, and logos—to construct and communicate differing interpretations (Andrus, 2012; Varpio, 2018) of WHB management. Taken together, the findings of this thesis illustrate that disagreement in WHB management persists not solely because of insufficient scientific information, but because information is communicated through different interpretive frameworks. This aligns with broader research in environmental communication and science communication, which shows that public interpretation of environmental issues is shaped by framing, values, and trust in information sources, rather than evidence alone (Brosch, 2021; Dahlstrom, 2014; Nisbet & Scheufele, 2009). As a result, efforts to improve public understanding of WHB management must account for how information is communicated, not just what information is provided.

A key contribution of this research is demonstrating how discourse and rhetoric function as mechanisms that influence environmental understanding. By integrating thematic analysis with rhetorical discourse analysis, this study shows that communication operates on multiple levels: what is said (themes) and how it is said (rhetoric). This combined approach provides a

more comprehensive understanding of how environmental issues are constructed and interpreted in public-facing communication.

Importantly, this work also bridges research and practice by applying these insights to environmental education. The lesson plans developed in Chapter 3 (Media Literacy & Persuasive Strategies, Socratic Seminar on What Does "Wild" Mean, Claim-Evidence-Reasoning & Tradeoff Evaluation) translate findings on rhetoric and discourse into instructional approaches. The lesson plans support students' ability to foster knowledge of WHB while also building (a) media literacy, (b) argumentation, and (c) reasoning skills, preparing students to navigate environmental issues where multiple perspectives coexist.

This educational application responds to a broader need for environmental literacy to move beyond content knowledge and toward the development of critical thinking skills. As shown in this study, understanding WHB management requires not only knowledge of ecological processes but also the ability to critically assess how information is framed and communicated. By incorporating rhetorical analysis into K–12 instruction, educators can better prepare students to engage with complex environmental challenges in informed and thoughtful ways.

Overall, this thesis highlights the importance of viewing environmental communication as an active process that shapes knowledge, values, and decision-making. In the case of WHB management, organizations construct competing narratives that may influence how the public understands the social-ecological complexity within WHB management. Recognizing these dynamics provides a pathway for improving both public discourse and environmental literacy.

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APPENDIX A: LESSON PLANS

Lesson Plan 1: Media Literacy & Persuasive Strategies in Wild Horse and Burro Discourse
Grade Level: High school (9-12)
Duration: 50-90 minutes

Description: Students will investigate how organizations communicate about wild horses and burros by analyzing rhetorical strategies (ethos, pathos, logos) in real-world texts. Through guided exploration and discussion, students will evaluate how credibility, emotional appeals, and evidence shape public understanding of a contested environmental issue.

Essential Question: How do rhetorical strategies influence how we understand environmental issues like wild horse and burro management?

Learning Objectives
Students will be able to:

- Identify rhetorical appeals (ethos, pathos, logos) in media content
- Analyze how credibility, emotion, and evidence influence interpretation
- Compare how different organizations present the same information about wild horses and burros
- Evaluate how communication influences the interpretation of environmental topics

Instructions:
Engagement
The lesson begins by activating students' prior knowledge and curiosity about environmental information sources. The teacher asks students, "Where do you typically get information about environmental issues?" and records responses that may include social media, news, or websites. Students are then shown two short contrasting excerpts about wild horses—one from a federal agency and one from a nonprofit organization—without identifying the sources. Students are asked to briefly reflect on which source they find more convincing and why.

This activity creates cognitive dissonance by revealing that the same issue can be presented in different ways, prompting students to question how information is constructed. It also surfaces prior assumptions about credibility and bias, aligning with the engagement phase's goal of connecting prior knowledge and identifying preconceptions

Exploration
Students work in small groups to analyze excerpts from organizational websites (e.g., the Bureau of Land Management, American Wild Horse Conservation, Cloud Foundation). Without prior formal instruction on rhetorical terms (ethos, pathos, logos), they are asked to identify patterns in how information is presented, including how authority is established, what types of evidence are used, and is emotional language being used. Students annotate texts and record observations about what stands out and how each source communicates its message.

During this phase, students actively investigate and generate ideas based on their observations rather than being given definitions upfront. This aligns with the exploration phase, where students build understanding through inquiry and shared experiences

Explanation
After exploration, the teacher introduces the formal concepts of Aristotelian appeals (ethos, pathos, and logos) and connects them directly to the patterns students identified. Students revisit their annotations and categorize examples by rhetorical appeal. The teacher facilitates discussion, asking students to explain how specific phrases or strategies function rhetorically and how they influence interpretation.

This phase allows students to articulate their understanding while receiving structured guidance. The teacher helps refine their thinking by linking their observations to rhetorical appeals, supporting deeper conceptual understanding.

Elaboration
Students extend their understanding by comparing how different organizations frame the same issue. They analyze how rhetorical strategies influence their perceptions of credibility, trust, logic, and emotions. Students then apply their knowledge by evaluating which source they find most convincing and explaining their reasoning using evidence from the texts.

Optionally, students can create their own short persuasive message using ethos, pathos, and logos. This phase encourages students to transfer and apply their knowledge to new contexts, deepening their understanding.

Evaluation
Student understanding is assessed through both formative and summative approaches. Formatively, the teacher observes group discussions, annotations, and participation to gauge comprehension. For a summative assessment, students may complete a written response comparing two organizations' use of rhetorical strategies and explaining how these strategies influence the interpretation of wild horse and burro management.

Students are also encouraged to reflect on how their understanding has changed throughout the lesson, promoting metacognition and self-assessment. This emphasizes both teacher assessment and student reflection.

Lesson Plan 2: What Does "Wild" Mean?
Grade Level: High school (9-12)
Duration: 50- 90 min

Description: In this lesson, students will examine different definitions of "wild" in the context of wild horses and burros. Through a Socratic seminar, students will explore biological, legal, and cultural perspectives and analyze how these definitions impact management decisions and public perception. This lesson highlights critical thinking, argumentation, and dialogue, helping students understand how language, evidence, values, identity, culture, and framing influence environmental issues.

Essential Question: What does it mean for an animal to be "wild," and how do different definitions shape how we manage and value wild horses and burros?

Learning Objectives
Students will be able to:

- Evaluate different definitions of "wild" (biological, legal, cultural)
- Analyze how language influences environmental perspectives
- Engage in evidence-based discussion, while contemplating human dimensions

Engagement
The lesson begins by activating students' prior understanding of the term "wild." The teacher presents a prompt on the board: "What makes an animal wild?" Students individually write a short response and then share their ideas in a brief class discussion. As students respond, the teacher records ideas such as "living without human control," "native species," or "living in the wild."

Next, the teacher introduces a contrasting set of statements about wild horses (e.g., "wild horses are native wildlife," "wild horses are feral livestock," "wild horses are cultural symbols of the American West"). Students are asked to consider whether all of these statements can be true at the same time. This creates cognitive tension and highlights that the meaning of "wild" is not fixed, preparing students to explore multiple interpretations as described in the engagement phase.

Exploration
Students are divided into small groups and provided with short readings or excerpts representing different perspectives on WHB, such as biological definitions (feral vs. native), legal definitions (Wild Free-Roaming Horses and Burros Act), and cultural or symbolic perspectives (heritage, freedom, identity).

Without direct instruction, students examine these materials and analyze how each source defines "wild" and what assumptions or values are embedded in those definitions. They may annotate texts, discuss patterns, and record observations about how different perspectives frame WHB.

This phase allows students to explore competing ideas and generate their own interpretations.

Explanation
Following exploration, the teacher facilitates a structured discussion to help students articulate and refine their understanding. Key concepts—such as biological classification (feral vs. native), legal designation, and cultural meaning—are introduced and clarified.

Students are then guided to connect these concepts to their earlier observations, explaining how each definition of "wild" reflects different priorities, such as ecological function, policy frameworks, or cultural values. The teacher introduces the idea that language and framing influence how environmental issues are understood and debated.

Students are encouraged to explain their reasoning using evidence from the texts, reinforcing both conceptual understanding and communication skills. This phase aligns with the explanation stage by linking student discoveries to formal concepts and disciplinary language.

Elaboration
Students participate in a Socratic seminar to deepen and extend their understanding. During the seminar, students respond to open-ended questions that they generate or teacher may provide questions such as:

- Should wild horses be considered wildlife, livestock, or something else?
- How do different definitions of "wild" influence management decisions?
- Can multiple definitions of "wild" coexist, or do they conflict?

Students are expected to support their ideas with evidence, respond to peers, and consider multiple perspectives. The teacher acts as a facilitator, encouraging dialogue rather than directing it.

This phase challenges students to apply their understanding in a new context—discussion and argumentation—allowing them to synthesize ideas and engage with the complexity of socio-ecological issues.

Evaluation
Student understanding is assessed through both participation and reflection. During the seminar, the teacher evaluates students' ability to use evidence, engage respectfully, and consider multiple perspectives.

Following the seminar, students may complete a written reflection responding to the prompt: "How has your understanding of what it means for an animal to be 'wild' changed, and how does this influence how wild horses and burros should be managed?"

This reflection allows students to demonstrate conceptual understanding, reasoning skills, and the ability to synthesize multiple viewpoints. It also allows students to reflect on how their thinking evolved throughout the lesson, consistent with the evaluation phase.

Lesson Plan 3: Claim–Evidence–Reasoning & Tradeoff Evaluation in Wild Horse & Burro Management
Grade Level: High school (9-12)
Duration: 50- 90 min

Description:
Students will evaluate competing claims about wild horse and burro management using the Claim–Evidence–Reasoning (CER) framework. Students will analyze how different organizations present arguments, assess the quality of the evidence and reasoning, and examine trade-offs among ecological, ethical, and policy considerations.

Essential Question: How can we evaluate competing claims and tradeoffs in environmental decision-making?

Learning Objectives
Students will be able to:

- Construct and evaluate claims using evidence and reasoning
- Analyze tradeoffs in WHB management decisions
- Integrate ecological, ethical, and policy considerations

Instruction:
Engagement
The lesson begins by presenting students with two contrasting claims about WHB management, such as: “Wild horse populations must be reduced to protect rangeland health” and “Wild horses should remain free on the range without human intervention.” Students are asked to choose which claim they initially agree with and briefly explain their reasoning.

As students share responses, the teacher highlights differences in opinions and asks what information would be needed to support or challenge each claim. This activity surfaces students’ prior beliefs and introduces the idea that environmental decisions involve competing perspectives and tradeoffs. It also creates curiosity about how to evaluate which claims are more credible, aligning with the engagement phase’s focus on activating prior knowledge and identifying preconceptions.

Exploration
Students work in small groups to analyze excerpts from organizational sources (e.g., BLM, AWHC, Cloud Foundation). Each group identifies claims being made about WHB management and examines the types of evidence and reasoning used to support those claims.

Students are not yet introduced to the CER framework explicitly; instead, they are asked to explore patterns in how arguments are constructed, including what counts as evidence and how conclusions are justified. They annotate texts, discuss observations, and begin to recognize differences in how organizations support their positions.

This exploratory process allows students to investigate real-world arguments and develop initial ideas about how claims are structured, consistent with the exploration phase's emphasis on inquiry and meaning-making.

Explanation
The teacher introduces the Claim–Evidence–Reasoning (CER) framework and defines each component. Students revisit their earlier analysis and categorize examples from the texts into claims, evidence, and reasoning.

The teacher guides discussion by asking questions such as: What makes evidence strong or weak? How does reasoning connect evidence to a claim? Are some claims better supported than others? Students explain their thinking using specific examples, and the teacher helps refine their understanding by clarifying misconceptions and reinforcing key concepts.

This phase connects students' exploratory observations to a formal academic learning structure, supporting a deeper understanding of argumentation.

Elaboration
Students apply the CER framework to evaluate tradeoffs in WHB management. They are presented with a scenario that includes ecological, economic, and ethical considerations (e.g., overpopulation, land health, animal welfare, cost of management).

Students construct their own CER-based argument addressing a guiding question, such as: "What is an appropriate approach to managing wild horse (or burro) populations?" In doing so, they must consider multiple perspectives and acknowledge tradeoffs between competing priorities.

Students may work individually or in groups to develop their arguments and then share their conclusions with the class. This phase extends learning by requiring students to apply reasoning skills in a new context and grapple with the complexity of real-world decision-making

Evaluation
Student understanding is assessed through both their CER argument and their ability to evaluate competing claims. The teacher uses a rubric to assess how effectively students identify claims, use relevant evidence, and construct logical reasoning.

Students also complete a reflection responding to a prompt such as: "How did considering multiple perspectives and tradeoffs influence your argument?" This reflection allows students to demonstrate metacognitive awareness and deeper understanding of how environmental decisions are shaped by evidence, values, and reasoning.

This phase aligns with the evaluation stage by providing opportunities for both teacher assessment and student self-reflection

APPENDIX B: THEMATIC ANALYSIS FINDINGS

INTRA-WEBSITE FINDINGS

The following are the findings of the within-website analysis. Each organization has their respective themes listed with a description and representative codes from the analysis.

The Bureau of Land Management (BLM)

Governance Foundation & Legal Mandate to Manage

BLM positions WHB Program as fundamentally law-driven, so their actions are because of statues that assign them the responsibility. The agency explains how they implement the 1971 Act rather than as a discretionary actor. This theme also includes how definitions ("wild" in law vs "feral" biological) and jurisdictional boundaries (where WHB were found in 1971) are used to justify management scope, practices, tools, and enforcement posture.

Example Codes:

- legal foundation of BLM program; legal mandate to manage WHB
- jurisdictional responsibility; Geographic limitation to 1971 range
- congressional definition; legal definition of WHB; scientific vs legal terminology
- explicit authorization for helicopters & motorized vehicles; statutory mandate for gathers as rebuttal to myth

"Healthy Herds on Healthy Rangelands"

This theme highlights how the agency program's mission is a dual sustainability goal, which is to manage animal health and land health. AML is the mechanism for preventing rangeland degradation while sustaining herds long-term. The theme emphasizes AML's function as an ethical, ecological, and scientifically-backed threshold, to the point where intervention becomes necessary to prevent land and resource degradation and animal suffering.

Example Codes:

- BLM's dual sustainable health goals
- AML for balance goal; AML not a fixed number (min–max range logic)
- capacity-based justification; carrying capacity justification

Overpopulation is Fundamental Driver of Intervention

This theme highlights how BLM identifies overpopulation as the structuring problem that forces management. The agency justifies intervention due to biological inevitability (resource and land degradation) in the absence of predation/hunting, and consequently, overpopulation is described as a welfare issue (starvation/dehydration), making intervention required.

Example Codes:

- absence of predators / absence of hunting & predation
- high reproduction rate / "doubling" logic
- boom-and-bust dynamics; ecological consequences of overpopulation

Management "Toolbox": Gathers + Fertility Control as Paired Strategy

BLM's management is described as a combined, pragmatic toolkit, rather than a single preferred solution. Fertility control is described as a humane and preferred approach "where practical," but is constrained by terrain (HMA locations are difficult to traverse), animal accessibility, dosage duration, and feasibility. Therefore, removals become the operational fallback or prerequisite for treatment for remote herds. The theme is produced by codes that highlight how management is bounded by realistic constraints, so BLM is described as adapting tools to context, not applying a one-size-fits-all approach.
Example Codes:

- BLM's management goals (combination of removals + fertility treatments)
- gathers as prerequisite / geographic limitations limits practicality (access constraints) broader application goal; long-term support for fertility control
- acknowledgement of failures in fertility treatment; short-term effectiveness of PZP

Humane Handling for Animal Welfare

The agency's welfare program is described as both a [WHB] program component and a legitimacy device. BLM outlines standardized procedures, operational thresholds (e.g., temperature limits during gathers), holistic welfare requirements (e.g., ensuring foals are of age to keep pace with gathers, speed of gathers are limited to the weakest, holistic care of animals during holding) to show that management is carefully regulated. Welfare is tied to every stage of gathers (e.g., gather timing, technique, and handling/holding protocols).
Example Codes:

- CAWP information; BLM's CAWP standard elements
- holistic & science-based welfare (body/behavior/mind framing)
- species-specific temperature standards for gathers; cautionary measures during foaling season
- short-term holding conditions (clean/humane)
- long-term pasture provides free-roaming environment (pasture logic)

Helicopter Gather Justification via Outcomes & Authority

Helicopter use is treated as a focal controversy, and BLM defends its use on the basis of legal considerations, comparative humaneness (injury/mortality outcomes relative to other large-mammal helicopter use), and feasibility. This theme focuses on a specific and recurring defense mechanism: helicopters are lawful, efficient in rugged terrain, and arguably more humane than alternatives, based on controllability and outcomes. Nonetheless, this theme's codes illuminate the continued perceived ethical & moral legitimacy battleground that surrounds helicopter use via external discourse and BLM's defense for the continuation of its practice.
Example Codes:

- comparative justification of helicopter use; efficiency & scale of helicopter use
- helicopter gathers as inhumane myth & rebuttal; scientific validation from external authority
- family cohesion protection (mares/foals together)

Off-range Holding Justification

Holding is described as a necessary infrastructure as a result of overpopulation and subsequent removals that is defended through welfare conditions and fiscal pragmatism. BLM's holding narrative describes three things at once: (1) acknowledges capacity pressures, (2) asserts

humane care standards to counter critiques, and (3) presents long-term pastures as more naturalistic and some are publicly accessible compared to corrals. Nonetheless, the codes illuminate a theme of institutional burden management: holding becomes the outcome of policy and overpopulation, causing financial and feasibility strain, though it is still a necessity and responsibility.

Example Codes:

- capacity strain & new holding areas
- short-term holding conditions (clean/humane)
- long-term pasture provides free-roaming environment (pasture logic)

Adoption Pathway Preference

BLM portrays private placement (adoption) as the preferred outcome for removed animals, supported by programs, incentives, and partner networks. They present adoption and related placement mechanisms (e.g, private sales) as socially acceptable and humane alternatives to indefinite federal holding: removal → holding → adoption/sale → private responsibility, supported by incentives and oversight claims.

Example Codes:

- adoption information; ensuring good homes – info
- adoption incentive program purpose; broad accessibility of AIP
- adoption pathway for off-range WHB; adoption program success

Accountability, Enforcement, & Anti-Slaughter

BLM repeatedly addresses public suspicion (e.g., slaughter pipeline, adopter fraud via adoption) by emphasizing enforcement tools, oversight, and restrictions, while also acknowledging legal/policy tensions. The agency describes having mechanisms to prevent/penalize abuse (e.g., repossession, bans, investigations), but simultaneously admits structural limits after animal transfer into private ownership. The "anti-slaughter" position appears as both a moral and reputational defense, especially when juxtaposed with external oversight events and interpretations of policy.

Example Codes:

- BLM's oversight & enforcement measures; graduated consequences
- BLM's authority limitations (cannot track after title)
- buyer accountability; categorical denial of slaughter myth
- acknowledgement of Inspector General oversight (Tom Davis case

Science, Monitoring, & Partnerships as Evidence-Based Authority

This theme emphasizes how scientific methods, data collection, and external collaborations are used to legitimize estimates, decisions (AML enforcement), and emerging management innovations (e.g., fertility control). The agency describes how management credibility is dependent on scientific procedures (population surveys, genetics, demographic data) while also acknowledging constraints (resource limits & uncertainty). Partnerships with research institutions and other agencies strengthen the "best available science" posture and allow BLM to present its decisions as evidence-based (aside from legal-based) rather than political or personal.

Example Codes:

- scientific legitimacy of annual population reporting; statistical error magnification

- BLM's genetic monitoring; evidence-based genetic recommendations
- academic partnerships; agency & research institution collaboration

Myth-Busting& Public-Facing Education as Program Defense

The agency dedicates substantial content to "Myth/Fact" and educational content to define controversies and position BLM as correcting misinformation. The "myth-busting" content is used to identify critiques and misconceptions (e.g., inhumane gathers, slaughter pipeline, overestimation, illegal authority, non-native clarification of WHB v.s legal mandates) and responds with legal citations, science claims, and welfare procedures. This theme illuminates how BLM positions itself as an authoritative explainer and corrector of popular contested narratives.

Example Codes:

- statutory mandate for gathers as rebuttal to myth
- scientific validation from external authority (used to rebut claims)
- holistic education approach / targeting students & teachers (public learning orientation)

Law over ancestry; scientific vs legal terminology

The U.S Forest Service (USFS)

Legal Frameworks

This theme captures how the USFS grounds WHB management in legal authority and congressional mandates. The agency repeatedly anchors its legitimacy of managing WHB in law, framing its management actions outcomes of congressional mandates, not discretionary

Example Codes:

- Federal legislative frameworks
- Wild Free-Roaming Horses and Burros Act of 1971
- Federal Land Policy and Management Act of 1976
- Public Rangeland Improvement Act of 1971

Jurisdiction

Management is spatially organized into designated territories, many jointly managed by BLM. The governance structure has well-defined responsibilities and agency coordination

Example Codes:

- USFS responsibility
- USFS territorial management
- interagency collaboration management

Ecological Balance within a Multiple-Use Framework

Management is a balancing act to achieve ecological sustainability while intervening only at the minimal feasible level and considering other public land uses. Intervention is justified to maintain ecological balance

Example Codes:

- USFS mandates ecological balance
- Minimum intervention management
- multiple-use land management

Management Practices

All actions are described as tools or procedures used to regulate wild horse and burro populations and their interaction with rangeland ecosystems, inventory and monitoring, removal, protection, and facilitate care and post-removal placement (adoption).
Example Codes:

- USFS mandates ecological balance
- minimum intervention management
- USFS monitors populations
- USFS controls population through removal
- USFS facilitates adoption & privatization
- USFS ensures humane treatment in adoption
- USFS protects from harm

Cultural Legacy & Genetic Heritage of WHB

This theme captures how USFS highlights the historical presence and genetic influence of WHB on established American horse breeds (quarter, paint, and appaloosas). It highlights the role of horses in shaping modern horse genetics and acknowledges their lasting influence on American equine heritage.
Example Codes:

- Genetic contributions of wild horses
- wild horse legacy in American breeds

Sand Wash Advocate Team (SWAT)

"Freedom through Fertility" to Keep Horses On-Range

This theme is SWAT's central patterned storyline and operating model: fertility control → reduced birth rate → horses stay wild and free on the range → roundups avoided. SWAT defines protection primarily as preventing removal in the first place through sustained, authorized PZP application. The theme emphasizes that fertility work is a formal responsibility under a BLM MOU, which has been implemented annually since 2014. The organization's meaning-making links humane intent (keeping horses wild) to a concrete intervention pathway (PZP darting by trained/certified volunteers), making population management the enabling condition for freedom rather than a compromise of it.
Example Codes:

- Freedom through Fertility Treatment
- KEEPING SAND WASH BASIN WILD
- PZP support for population control
- population control to keep horses wild & free
- long-term fertility program
- authorized fertility treatment role
- certified volunteers for fertility administration
- dedicated volunteer work for fertility control

Documentation for Management Infrastructure

SWAT frames documentation as a continuous management necessity. It is a living database that enables and defends fertility control. The report emphasizes that "documentation never stops" because herd dynamics change daily, indicating that monitoring is an ongoing,

field-based practice rather than periodic recordkeeping. Documentation is described as collecting IDs, ancestry, physical markings, births/deaths/injuries, band structure, and treatment histories, which functionally is a community-run demographic surveillance system. Importantly, this theme attributes meaning beyond "we take photos." Documentation becomes the operational backbone that links identification → mare-level treatment decisions → evidence of population outcomes. This is a patterned process SWAT uses to justify its credibility as an organization and the effectiveness of administering fertility treatment. Lastly, they welcome community support in documenting wild horses to aid overall documentation.
Example Codes:

- Herd Documentation: for fertility control
- Herd Documentation: comprehensive demographic database
- Herd Documentation: range visits & photography
- Herd Documentation: social structure
- Herd Documentation: changing herd dynamics
- Community Involvement

Cross-Sector Cooperation for On-Range Preservation

A defining SWAT pattern is its identity as an on-range partner working directly with BLM, emphasizing collaboration and relationship maintenance. The report describes meeting with BLM to discuss range conditions and habitat improvements and sustaining a "working relationship." This theme shows a governance approach where legitimacy is built through formal authorization (MOU), routine communication, and shared goals (keeping horses on-range). In patterned-coding terms, SWAT's approach operationalizes advocacy through co-management, a stable relationship-based model that positions the organization as a contributing management actor rather than an external critic.
Example Codes:

- agency & org collaboration
- range condition advocacy
- authorized fertility treatment role
- keep horses on range
- wild horse support & preservation

Roundup Prevention via Humane Alternatives

This theme captures that SWAT's priority is prevention of gathers, but if removal is deemed necessary, SWAT shifts to harm-reduction by advocating for humane bait-and-trap methods. The codes highlight the contrasts between historic helicopter removal (last large-scale event in 2008) with later limited bait-and-trap removal, explicitly attributing this shift to fertility control and working relationship with BLM. SWAT provides an explanation of their intervention and recommendations for management: (1) prevent roundups via fertility control; (2) if unavoidable, insist on humane, small-scale capture. This theme demonstrates a pragmatic mission, which is to minimize large-scale removals via humane alternatives to mitigate harm when removals occur.
Example Codes:

- prevent roundups, stay on range
- Fertility control reduces mass helicopter removals
- use small-scale traps

- advocacy for humane removal methods

Volunteer & Community Participation Drives Capacity

This theme reveals how SWAT sustains itself through structured volunteer roles and an immersive, place-based participation culture (e.g., camping, on-range rendezvous). Volunteers are portrayed as the workforce that enables monitoring, fertility darting, and stewardship projects. The theme emphasizes that volunteers work in difficult conditions, and that SWAT is unpaid and uncompensated, so capacity is built through commitment, training, and community recruitment. Overall, community involvement leads to operational capacity and on-range preservation outcomes.

Example Codes:

- Community Outreach
- Community Involvement
- Immersive volunteer experience
- dedicated volunteer work for fertility control
- certified volunteers for fertility administration
- range cleanup projects

"Keeping it Wild" via Habitat Stewardship

SWAT's advocacy is not limited to horses. It includes range support as a practical requirement for long-term on-range living. Cleanup days (removing barbed wire/trash, fence repairs) and discussions with BLM about habitat improvement place SWAT within a stewardship role. The theme connects ecological maintenance with social values. The horses remain on the range "for decades to come for all to enjoy," which frames stewardship as ensuring both herd wellbeing and public experience. This theme links habitat work to degradation prevention. Overall, better range conditions and stable fertility control reduce the perceived need for removals.

Example Codes:

- range cleanup projects
- range condition advocacy
- long-term range presence for public enjoyment
- keep horses on range
- KEEPING SAND WASH BASIN WILD

The Mustang Heritage Foundation (MHF)

Adoption Solution to Off-Range Holding Challenge

This theme consolidates MHF's central "solution pathway" to off-range holding issues: horses are gathered → short-term holding → evaluation → adoption/placement → "loving forever home." The organization views adoption as a remedy to resolve the scale problem of tens of thousands of animals in off-range holding. The organization repeatedly frames adoption as both an outcome of removals and an intervention that reduces the need for continued holding infrastructure, and it emphasizes procedural steps (evaluation, requirements, titling, sale vs. adoption distinctions) that turn a broad moral aim into an actionable pathway. The pattern

establishes a directional process: removal produces displacement, but adoption produces resolution.
Example Codes:

- loving homes for off-range horses
- adoption and placement focus
- adoption information
- advocacy for adoptions
- adoption program success
- adoption program success
- adoption as outcome of removals
- reduce off-range holding
- Ending off-range holding
- scale of horses in off-range holding
- long-term holding
- post-gather process
- welfare and evaluation
- rescue-to-adoption redemption

Stewardship Ethic & National Heritage Responsibility

MHF grounds its mission in a broad stewardship obligation: mustangs and burros are framed as "living symbols" and "icons" of American heritage, and the public is positioned as having responsibility to protect them. This theme emphasizes shared duty and positive identity: preservation is an American civic obligation to care for a culturally significant animal. Importantly, the theme ties stewardship to individual action (adoption, support, participation), linking moral responsibility to practical outcomes.
Example Codes:

- stewardship ethic
- civic duty to protect American mustangs
- preservation of WHB
- WHB are a part of American Heritage
- Emotional valorization of mustangs
- Positive traits of WHB
- Horses as multidimensional

Economic Rationale for Adoption & Program Design

This theme captures how MHF uses cost and efficiency as a recurring logic to legitimize its approach. Holding is explained as expensive and unsustainable, while adoption/placement is presented as a fiscally responsible alternative that benefits taxpayers. Performance metrics (numbers placed, dollars saved, payouts, etc.) operate as evidence that adoption-focused programs are not just compassionate but also economically rational. The pattern suggests a causal claim: the holding "crisis" persists partly because it is financially burdensome; therefore, scalable adoption reduces both social and economic costs.
Example Codes:

- critique of holding costs
- adoption cost savings for taxpayer
- Economic incentives

- Economic drivers as management
- program performance metrics

Program Innovation & Cross-Sector Collaboration

This theme explains how MHF claims to achieve adoption outcomes: through program creation (e.g., trainer pipelines, events, incentive structures) and partnerships with BLM and the broader equine community. MHF frames itself as an "epicenter" convening network of trainers, adopters, supporters, and agencies, so adoption becomes feasible at scale. The pattern is less about policy critique and more about implementation capacity: collaboration + program infrastructure → increased placements. This is an important cross-case comparison point because it differentiates MHF from organizations that focus primarily on litigation, protest, or agency accountability; rather, MHF focuses on collaboration and leadership to achieve outcomes.
Example Codes:

- agency & org collaboration
- interagency collaboration management
- program conception
- Gentling & training efforts
- Community leadership
- Community appreciation
- adoption program success
  program performance metrics

Mustang Gentling & Human Bond

This theme clusters the report's repeated portrayal of mustangs as capable relationship partners once trust is established (e.g., intelligent, versatile, resilient, forgiving). The emphasis on trust-building and lived testimonials functions as an adoption motivator: mustangs are represented not as dangerous "wild" animals, but as animals whose perceived wildness can transform into mutual partnership through humane training and care. This theme strengthens the adoption frame by addressing a practical barrier, public hesitancy, through affective and training evidence; thus, the mustang becomes adoptable because of gentling efforts.
Example Codes:

- Human-animal bond
- positive traits of WHB
- Gentling & training efforts
- Emotional valorization of mustangs
- Horses as multidimensional

Management Legibility through Education

MHF repeatedly acts as a translator of a complex management system by defining key terms (AML, gather, holding, adoption, titling) and legal categories. This theme is not simply "education" in general. It is the management legibility that helps non-experts understand how wild horse governance operates and where adoption fits within it. The pattern implies a causal pathway: misunderstanding limits engagement → education increases informed participation → adoption and support become more likely. This is a strong second-cycle theme because it integrates multiple definitional codes into a coherent function within the organization's strategy.
Example Codes:

- Educational content: glossary of terms
- public awareness gap
- public misunderstanding
- mustang definition
- burro definition
- legal distinction of Wild
- legal foundation for management & protection
- Gather definition
- AML purpose
- promoting AML

Gather Justification for Balanced Use

This theme groups MHF's explanation of why gathers occur and how BLM justifies removals. Population levels are linked to land capacity and multi-use mandates (livestock, recreation, wildlife, etc.). MHF's corpus tends to present AML and population control as a management necessity that must be navigated responsibly, rather than as inherently illegitimate. Adoption is then positioned as a downstream solution that helps agencies maintain balance. The theme's analytic pattern is: multi-use public land governance → AML monitoring → gathers/removals → holding-to-adoption pipeline.

Example Codes:

- carrying capacity justification
- justification for population control
- promoting AML
- AML purpose
- multiple-use land management
- BLM responsibility
- USFS responsibility
- Government responsibility
- adoption as outcome of removals
- non-lethal population management strategies

Civic Action History for Legacy Protection

This theme traces a legacy narrative. Protection emerged through citizen mobilization (letter-writing campaigns, public pressure), culminating in major legislation (as recounted in the report). The organization uses this history to normalize civic engagement as part of "how change happens" in the wild horse issue space. This theme links civic action/movement to political outcomes, and it implicitly encourages contemporary audiences to see themselves as the next generation of participants. It also supports MHF's identity as a bridge between public sentiment and institutional systems (adoption programs, agency processes).

Example Codes:

- "Wild Horse Annie" grassroots movement
- Grassroots mobilization
- legislative outcomes from grassroots movement
- Collective advocacy
- civic engagement encouraged
- call to action

- Community Outreach

The Cloud Foundation (CF)

Wild Horse Decline via Institutional Mismanagement

The organization frames institutional management, not ecological limitation, as the central mechanism behind wild horse decline. They construct a coherent explanatory narrative that BLM policies and practices (roundups, AML enforcement, captivity, and overall program) are actively producing harm to wild horses while simultaneously claiming to prevent it. Management is portrayed as performative and self-legitimizing, relying on flawed oversight and symbolic welfare policies that obscure systemic failure. The theme across the website attributes decline to governance processes rather than natural population dynamics, reframing management as an existential threat rather than a necessary and corrective process.

Example Codes:

- Management is a threat to survival
- Government captivity
- BLM's CAWP as faulty
- Mistrust for BLM
- Questioning agency justification
- BLM oversight
- BLM large-scale roundups
- Displacements of wild horses
- performative policy
- BLM accountability failure
- Mistrust for BLM

Structural Root of Conflict via Livestock Dominance

This theme was derived from various codes that highlighted the website's identification of structural power imbalances in public land governance. The website consistently positions livestock grazing as the underlying driver for rangeland degradation, displacement, and fiscal inequity. The organization claims that wild horses are symbolic "scapegoats" for impacts caused by permitted livestock use. The pattern of codes reveals that the org views and relates the livestock industry as systemically influencing economic interests, creates policy bias, and causes negative ecological outcomes, to explain how the industry impacts the broader political economy and public land usage.

Example Codes:

- Grazing program & livestock as root cause
- Livestock as primary impact
- Livestock as drivers of systemic issues
- Livestock privilege
- Livestock v.s. wild horses
- Displacements of wild horses
- Taxpayer economic injustice
- Uses agency data to counter narrative

Counter-Narratives through Science & Evidence

This theme highlights that knowledge is power and a strategic corrective to institutional storytelling. The organization sources peer-reviewed studies (NAS) to support their narrative, call out contradicting government data, and independent articles to "expose" [highlight] discrepancies between official [BLM] narratives and empirical evidence. CF portrays this knowledge asymmetry as intentional and politically consequential to the management of wild horses and burros by emphasizing BLM's own data to contradict its messaging. Overall, the org implicitly frames science as a democratizing force that can empower the public to resist management policies by becoming adequately informed and using it as a tool for policy reform.
Example Codes:

- Science as a tool for reform
- scientific perspective
- valuing scientific evidence
- data vs. narrative conflict
- contradictory evidence
- uses agency data to counter narrative
- using articles as evidence
- Information asymmetry
- Knowledge is power
- Challenging nativity myth

Wild Horses as Social, Cultural, & Ecological Beings

This theme portrays wild horses as multidimensional beings whose value is rooted in their social complexity, cultural iconography, and ecological benefits, thereby reinforcing their legitimacy as rightful inhabitants of public lands. The organization claims that wild horses and burros are "returned native" species that provide ecological benefits to their habitat, exhibit dynamic social behaviors, are symbols of American heritage, and offer the public enrichment. The org uses these characteristics to advocate for broadening the criteria by which management decisions are evaluated and made.
Example Codes:

- social complexity in wild horses
- wildness emphasized
- WHB are a part of American Heritage
- WHB provide public enrichment
- biodiversity contributions
- wild horses as beneficial ecosystem engineers
- returned natives
- Global perspective
- Fame vs. vulnerability

Moral Injury & Trauma Caused by Roundups

This theme was derived from codes that highlight how the process of removals and relocations is harmful by producing both physical and social trauma, jeopardizing morality and values. Family separation, injury, and captivity are described as negligent systemic outcomes rather than isolated incidents. Even high-profile horses (e.g., Cloud & lineage) are portrayed as vulnerable, reinforcing the universality of harm. The org also underscores the loss of values,

freedom, and family, due to social fragmentation from removals (e.g., horses lose freedom, family, by being removed from wild habitat to captivity & their family dynamic is fractured due to separation). Overall, it illuminates how animal welfare is a priority and to preserve and protect wild horses and burros' freedom & family, core values of the org.
Example Codes:

- roundups are physically harmful & inhumane
- roundups cause loss of freedom & family
- concern for animal welfare & negligence
- Care for off-range horses
- fertility control as humane alternative
- PZP support for population control
- Fame vs. vulnerability
- Rarity of wild horses

Natural Regulation Alternative to Human Control

This theme challenges the assumption that human intervention is necessary for population control. The organization presents predation and weather as natural regulators of wild horse and burro populations: "let nature call the shots".
Example Codes

- allow nature to take course
- natural regulators for WHB herd size
- predator habitat protection for survival
- Human intervention causes more harm

Civic Engagement for Advocacy & Accountability

This theme conceptualizes how advocacy can hold the government accountable. The org calls citizens to function as monitors, documentarians, and moral witnesses and advocates, framing participation as both a constitutional right and civic obligation. Documentation at roundups and adoption becomes a form of resistance that counters institutional opacity. This pattern highlights how social networks are mobilized to fill perceived accountability gaps within formal governance systems.
Example Codes:

- call to action
- civic engagement encouraged
- citizen documentation
- Documentation as resistance
- constitutional rights for oversight
- Community Outreach
- Fostering community involvement
- Encourage public involvement in adoptions

Preservation of Public Lands & Wild Horse Wildness

This theme illuminates how wild horses are spatially dependent on intact public lands, positioning land loss as synonymous with loss of wild equids. The organization calls for the reinstallation of "lost" wild horse rangelands. Public lands are seen as active platforms for sustaining wildness, reinforcing the inseparability of land stewardship and species preservation.

Example Codes:

- dependence on public land
- public land dependence for freedom
  preservation of wildlife & land
- environmental stewardship
- restoration intervention initiatives
- off-range to on-range return

The Colorado Wild Horse Refuge (CWHR)

"Wild-by-Proxy" Sanctuary

The refuge is framed as a material and moral intervention that returns horses to "the closest thing to the wild," achieved through expansive, contiguous land and the absence of restrictive infrastructure (no paddocks/stock pens). "Freedom" functions as both a physical condition (space to run, self-directed movement) and a psychological/spiritual state (restoring the "wild spirit" and sense of belonging). Proximity to the horses' original HMAs is emphasized to authenticate this restoration so horses can "feel as if they have returned home." The organization emphasizes that the sanctuary is not just a location, it is the mechanism by which wild identity is repaired after government removal.

Example Codes:

- sanctuary for sustained & protected freedom
- sanctuary as wild proxy
- Refuge as wild restoration
- Freedom through sanctuary
- Freedom restored
- Now They Are Free Again
- no restrictive spaces
- autonomy in movement
- Empowerment of wild horses is beautiful
- joyful reclamation of freedom
- reclaiming wild identity through habitat
- wild by proxy for sense of belonging
- proximity to original habitat
- land-based freedom
- mission-driven facility
- rescue-built sanctuary
- land acquisition for sanctuary purpose

Captivity as Moral & Spiritual Harm

This theme frames captivity as more than an animal welfare issue. It is constructed as existential deprivation. Captivity is described as "soul-crushing," producing uncertainty and stripping horses of what makes them who they are. Government holding (including crowded corrals and repeated transfers) becomes a symbol of ongoing loss. Once captured, most horses "will never again feel the wind in their face." This is a moral indictment that expands responsibility beyond the agency to "government & public accountability," implying societal complicity. Pattern-wise, the narrative moves from conditions (crowding/restriction) to

consequences (spiritual death, stolen life), which supports CWHR's justification for refuge as an ethical alternative.
Example Codes:

- captivity as spiritual death
- critique of permanent holding
- critique of government holding conditions
- critique of restrictive spaces
- captivity & uncertainty
- Government & public accountability
- theft of freedom
- Freedom equals well-being
- Freedom identity

Opposition to Escalating Roundups

This theme frames roundups as an escalating and patterned institutional practice, not isolated events. CWHR highlights increasing roundup situations and describes a systematic approach that targets even culturally important herds (notably Colorado HMAs). Roundups are linked to disturbance, displacement, and the onset of captivity trajectories. Importantly, this theme connects to Theme 1 (refuge as repair) and Theme 2 (captivity as harm). Roundups initiate the harmful process that refuge seeks to reverse.
Example Codes:

- BLM roundup increase
- patterned BLM roundup actions
- roundup & displacement critique
- BLM roundups iconic herds
- opposition to government management

"Best Possible" Ethical Dilemma of Management Constraints

CWHR occupies a distinctive position on the advocacy spectrum by explicitly foregrounding ethical tradeoffs rather than asserting a single "pure" solution. The organization repeatedly poses dilemma-questions: freedom vs family cohesion, non-intervention vs necessary action, what humans would choose vs what horses would choose. This creates a patterned moral logic. When "ideal preservation isn't feasible," compassion requires compromise, yet the organization insists decisions should be guided by empathy and humility, not human convenience. The theme functions as an ethics framework for contentious management debates. It acknowledges constraints ("so many horses, so little land") while seeking the least harmful pathway.
Example Codes:

- acceptance of unavoidable intervention
- acceptance of population control
- Ethical tradeoffs in management
- Freedom vs kinship values
- Freedom sacrifice for family integrity
- leave horses wild, moral conflict
- Empathy-centered management
- Ethical burden on humans

- Individual destiny and choice
- altruism vs selfishness
- altruistic sacrifice
- Human-horse moral distinction

Resource Scarcity & Land Limitation

This theme identifies the underlying structural condition driving conflict: land limitation relative to horse numbers, paired with prioritization battles over who belongs on public lands. The "so little land" framing positions scarcity as a fundamental constraint that forces hard decisions and complicates moral commitments. By pairing scarcity with accountability language, CWHR implies that land allocation is not inevitable, it is shaped by policy choices and public will. This theme sets up cross-case comparisons around how different organizations explain the "root cause" of the crisis (scarcity, livestock dominance, agency mismanagement, etc.).
Example Codes:

- So Many Horses... So Little Land
- Few remaining herds of mustangs
- resource prioritization based on nativity
- Government & public accountability

Naitivity Debate, Reintroduction & Cultural Value

CWHR dedicates substantial narrative space to questions like what mustangs are, and what does that status require ethically and legally? Rather than taking a single definitive stance, the organization highlights competing legitimacy logics: biological nativity (evolution, lineage continuity, niche reoccupation), political/legal classification ("wild" vs "feral"), and cultural symbolism (mustangs as culturally significant even if not native). The organization acknowledges scientific controversy (ecomorphotype, contested role) while still advancing arguments that support belonging and protection of WHB. This pattern functions as a justificatory structure: if mustangs are returned natives, they deserve native-like treatment; if culturally iconic, they deserve preservation regardless of nativity.
Example Codes:

- contested ecological role
- questions on nativity
- continuity of species lineage
- Ecological niche reoccupation
- Ecomorphotype adaptation
- returned natives
- Evolution-based nativeness
- native species comparison
- wild vs feral classification
- legal classification labeling dispute
- cultural significance argument
- Legal recognition of symbolic value
- Colonial origins of mustangs
- Genetic diversity of modern mustang
- Spanish origins in isolated population

Responsible Stewardship via Care & Community Labor

CWHR positions itself as an accountable alternative institution by emphasizing capacity to care (e.g., on-site veterinary clinic, exceptional well-being care) and collective effort (volunteers, public support, calls to action). Public viewing access and emotional connection to individual horses reinforce transparency and community investment, turning spectators into stakeholders. The organization links well-being to freedom, autonomy is treated as the primary welfare condition, while also emphasizing that freedom must be supported by infrastructure, land, and labor. Adoption appears as one pathway of support, but the distinct CWHR pattern is that stewardship is enacted through sanctuary operations and community backing rather than primarily through adoption facilitation.

Example Codes:

- care for animal well-being
- on-site care support infrastructure
- volunteer-driven care
- program-based protection
- organizational mission
- protection and preservation of wild horses
- call to action
- call for collective restoration of life
- org encouraging public involvement
- public viewing access
- public connection to individual horses
- public fascination with mustangs
- character & aesthetic appeal of mustangs
- wild spirit symbolism
- Human compassion for liberation
- advocacy for adoptions

American Wild Horse Conservation (AWHC)

"Keep Wild Horses Wild"

AWHC repeatedly emphasizes that wild horses and burros should remain free-roaming and protected in place, rather than being cycled through removal and confinement. This theme emphasizes protection in the wild, tied to the idea that freedom, movement, and social autonomy are intrinsic to what it means for horses to remain "wild." Management is framed as legitimate when it safeguards this wildness (e.g., protecting movement corridors, reducing forced removals, preventing disruption to herd social structures), and illegitimate when it compromises the core condition of free-living existence.

Example Codes:

- Humane & in-the-wild protection
- KEEP WILD HORSES WILD
- lifelong freedom
- Free-roaming access support
- behavioral integrity preservation

Roundups & Holding as Harmful, Counterproductive System

This theme consolidates AWHC's portrayal of gathers/roundups and long-term holding as a repeating institutional cycle that produces welfare harms, family band disruption, and psychological/physical trauma, while also failing to solve the underlying problem (i.e., the system "backfires" and perpetuates future interventions via reproductive compensation). Holding is presented not only as ethically troubling but also as structurally flawed. The organization claims that once removed, animals become warehoused with little return to the range, expanding a costly captive population that then becomes used to justify more removals. The emphasis is that roundups are depicted as an escalating mechanism that deepens both suffering and fiscal burden over time.

Example Codes:

- On-range management is less expensive
- cost & cruelty of helicopter roundups
- Helicopters cause harm & death
- Helicopter roundups cause social behavior disruption
- Family separation
- animal suffering
- Harsh captivity conditions; Indefinite captivity
- Financial critique of holding facilities
- cycle of mismanagement; counterproductive management

Fertility Control as Primary Humane Alternative & Preventive Strategy

AWHC positions fertility control (PZP) as a humane, evidence-backed, non-lethal intervention that protects wild horses by preventing the circumstances that trigger removals. Importantly, fertility control is framed as more than population management. It becomes a mechanism for preserving "wildness" (keeping horses on-range, sustaining social integrity, reducing traumatic removals). This theme also includes AWHC's self-positioning as an implementer/leader of fertility-control programming at scale, reinforcing the idea that humane management is actionable, operational, and scalable.

Example Codes:

- Fertility Control (PZP)
- Fertility control as humane & science-based
- fertility control as ethical preventative; Fertility control reduces roundups
- non-invasive alternative
- Fertility control keeps horses on-range
- leadership in fertility control programming

Fiscal Critique & Reallocation toward Humane Management

AWHC consistently frames current federal management as financially irrational. Public funds are portrayed as being absorbed by costly roundups and holding facilities rather than by prevention-oriented, humane approaches. Fiscal logic is used as a persuasive backbone for reform, arguing that ethical management and cost savings align. The theme connects welfare concerns (roundups/holding are harmful) to governance critique (budgets are misdirected) and to programmatic solutions (fund fertility control and habitat work instead).

Example Codes:

- budget misallocation
- misaligned spending

- Financial critique of holding facilities
- Fiscal responsibility
- cost-effective welfare strategy (fertility control saves taxpayer money)
- advocacy for alternatives (redirect funds to humane/effective solutions)

Policy Critique & Resource Inequity on Public Lands via Livestock/Commercial Influence

This theme captures AWHC's structural critique that wild horses are not simply facing "management challenges," but are disadvantaged by political-economic priorities on public lands. Livestock grazing and other commercial interests are described as shaping policy outcomes, influencing resource allocation, and weakening habitat protections, creating an uneven playing field where horses (even on designated lands) receive fewer resources and less political priority. The result is a governance problem in which horses are vulnerable because policy decisions are framed as misaligned with ecological realities, fairness, and public preferences.
Example Codes:

- livestock & commercial interest lobby policy
- livestock v.s. WH public land use competition
- Imbalance of resources on WH land
- Livestock policy influence inadequate habitat protections
- livestock overgrazing harms WH habitat
- livestock cause taxpayer burden

Legal Frameworks as Battleground for Protection

AWHC frames law as the primary mechanism through which protection becomes real. Legal participation is treated as an instrument to stop harm, compel compliance, and set new precedents. Litigation is described as both defensive (enforcing existing safeguards) and strategic (challenging harmful practices like helicopter roundups and sterilization). Legislative engagement and lobbying are positioned as complementary to strengthen or modernize protections, while litigation holds agencies accountable in the present. Overall, the theme reveals that protection and reform require active legal enforcement.
Example Codes:

- landmark law provides protection; Designated symbol & land protections
- legal foundation for management & protection
- litigation strategy as advocacy tool
- litigation as accountability mechanism
- Hold government legally accountable; organizational legal accountability enforcement
- accusation of legal violations by government; challenging harm through legal action
- legal wins as progress milestones
- legislative reform
- legislative engagement
- lobbying as legislative strategy

Transparency, Documentation, & Civic Oversight as Accountability Tools

This theme captures how AWHC treats visibility as power. When management isn't transparent, harmful practices persist and reform becomes difficult. Documentation (reports, media evidence, on-site observations) is presented as a corrective strategy that enables public oversight and strengthens political/legal advocacy. Transparency is thus coded not as a neutral

administrative value but as a mechanism for civic participation and institutional accountability, linked tightly to legal recourse and public pressure.
Example Codes:

- accountability blocked by lack of transparency
- BLM accountability through documentation; Documentation for public awareness
- civic oversight (citizens' right to observe government actions)
- media transparency (photos/videos/written accounts keep public informed)
- litigation restores transparency
- Evaluating intersection of industry & policy (on-site evaluation of commercial influence)

Habitat Stewardship & Restoration as Foundation for Survival

AWHC frames habitat as the enabling condition for continued wild living, so protection isn't only about stopping removals, it's about ensuring the range can support healthy herds. Stewardship and restoration are described as proactive strategies, including improving water sources, reseeding native vegetation, and rehabilitating degraded land. Habitat work is also positioned as long-term and future-oriented ("permanent" safeguards), suggesting that conservation success is measured in sustained ecological capacity.
Example Codes:

- Habitat stewardship as survival strategy
- Habitat enhancement for thriving WHB
- Habitat protection & expansion advocacy
- Habitat restoration; land restoration efforts
- native vegetation recovery; improving water sources
- long-term conservation; long-term habitat safeguards
- Habitat quality degradation affects; Health & habitat consequences

Climate Change Threat Requires Adaptive & Resilience Planning

Climate change is treated as a major threat. The theme magnifies scarcity, disrupts water reliability, and fragments habitat, creating survival pressures that can cascade into increased conflict and vulnerability. AWHC frames the response as adaptation-through-stewardship, applying climate research to enhance resilience via restoration, water projects, and connectivity strategies that maintain movement and access to resources under changing conditions.
Example Codes:

- Climate change threats to ecosystem; Climate Change Threatens Wild Horse Habitats
- Climate change causes extreme weather events; Climate-induced water insecurity
- Climate change & resource scarcity threats
- Habitat fragmentation & isolation (climate-linked)
- Climate resilience for WH survival
- Climate adaptation strategy
- Habitat restoration as climate adaptation (native vegetation, water enhancement, corridors)

Science-Driven Conservation & Adaptive Management

AWHC repeatedly legitimizes its approach through scientific grounding via monitoring, demography, movement analysis, and long-term studies that are framed as necessary for effective decisions. Science is not only informational, but it is also operational because it is used

to refine practices, evaluate outcomes, identify critical habitats/corridors, and anticipate conflict hotspots. This theme illuminates an adaptive management pattern: research → refine strategy → monitor outcomes → improve practice.
Example Codes:

- best available science standard
- adaptive management evolution via research
- continuous support for population monitoring; Comprehensive demographic data collection
- Evaluating management outcomes; Evaluating long-term management effects
- movement ecology analysis; Habitat study for resource mapping
- conflict prevention through tracking (reduce conflicts with grazing/recreation/development)

Genetic Viability Conservation

This theme captures AWHC's emphasis that "protection" must include maintaining viable gene pools. Genetic diversity is framed as the basis for resilience to climate, disease, and habitat change, while bottlenecks are presented as risks exacerbated by disruption (including disasters, disease, and human actions like roundups). AWHC's conservation planning therefore, includes genetic monitoring, tracking trends over time, and even interventions like genetic rescue, supported through collaborations with research institutions and policy advocacy for genetic conservation.
Example Codes:

- Ensuring Genetic Diversity in Wild Horses
- Genetic diversity for survival & resilience
- definition of genetic bottlenecks
- Environmental & disease-induced risk
- Genetic monitoring for management; long-term genetic tracking
- Genetic tracking guides conservation strategies; Genetic rescue for at-risk populations
- Collaborative genetic research; Expert scientific collaborations
- legislative advocacy for genetic conservation

Predator Protection for Ecological Regulation

AWHC extends conservation beyond horses to the ecological relationships that shape population regulation and ecosystem stability. Predators are framed as essential to biodiversity and resilience, while human actions (hunting, habitat destruction, predator control) are framed as drivers of trophic imbalance. Predator protection becomes part of a holistic approach. The theme underscores the organization's claim that sustaining predator-prey dynamics protects connected habitats and supports balanced ecosystems in which overpopulation pressures are not managed solely through removals.
Example Codes:

- apex predator advocacy
- Conservation of predators; anthropogenic threats to predators
- anthropogenic activities disrupt predator-prey dynamics
- Ecological equilibrium through predation; Ecological imbalance of predator-prey disruption
- Biodiversity & resilience through predator protection

- Habitat conservation for predator-prey support; Habitat connectivity improvements
- Disruption of natural population regulation

Public Mobilization, Education, & Media as Change Infrastructure

AWHC presents public engagement as a necessary engine for reform. Education campaigns, legal literacy, events, and media outreach are designed to expand awareness and convert concern into action. This theme includes both broad civic mobilization (grassroots campaigns) and targeted literacy building (e,.g., understanding legal frameworks, policy processes, and management impacts). Media evidence and storytelling function as a bridge between on-the-ground realities and public pressure, helping sustain advocacy momentum.
Example Codes:

- call to action
- Grassroots mobilization; Empowerment through grassroots action
- Educating to build support advocacy; Informing public on key issues
- Hosting engagement & education events; Educational resources for public consumption
- media strategy for mass communication; media transparency
- Legal literacy for reform & protection; Legal protections education

Coalition-Building & Cross-Sector Partnerships to Scale Influence & Implementation

AWHC frames alliances as a strategic necessity as coalitions amplify voice, build capacity, and enable complex goals (legal challenges, research, habitat work, humane management programs). Cross-sector partnerships are seen as influential, including scientists and universities for credibility and technical expertise; legal experts for litigation and enforcement; other organizations and stakeholders for unified advocacy; and even ranchers/land managers for land-use and coexistence approaches. Coalition-building is thus patterned as the infrastructure that turns ideals (humane, science-driven, on-range protection) into scalable, politically effective action.
Example Codes:

- alliances & partnerships alignment; alliances for protection
- Coalition building for reform; Coalition power amplification
- cross-sector collaboration (ranchers/land managers)
- capacity building through collaboration
- Expert-driven collaboration; Collaborative research efforts
- interorganizational legal collaboration; legal capacity building through partnerships
- Goal alignment across partners for reform

INTER-ORGANIZATION CROSS-CASE ANALYSIS FINDINGS

The following are the "meta-theme" findings from cross case pattern analysis, which synthesizes themes across all websites. Each meta-theme is presented through a nuanced account of the organizations and a table with representative quotes from the organizations' websites.

1. WHB Status & Organizational Authority to Act

WHB Status & Role

Nuances:

- BLM: agency defines the status and role of free-roaming equids as "wild" because Congress has defined them this way, regardless of their domesticated history and biological classification. Additionally, they also recognize the cultural significance of WHB
- USFS: also refers to free-roaming equids as legal classification "wild" and implies American cultural significance via WH legacy boodlines
- SWAT: org refers to free-roaming equids as legal classification "wild," but does not elaborate on distinction views of status and role
- MHF: org recognizes WHB history and legal definition of "wild"; also describe the cultural significance of WHB, being symbols of American heritage
- CF: org claims WHB are returned natives that are beneficial to their respective ecosystems
- CWHR: org contemplates what defines a free-roaming equids (returned native, native, indigenous, feral, or wild) and how it too impacts WHB role on public lands. They ultimately explain aWHB are descendants of domesticated horses and actually feral, but legally classified as "wild free-roaming"
- AWHC: org claims WHB are native species given that they originated in the U.S, so they are capable of being positive ecological participants to their ecosystems and wildlife. Additionally, refer to these equids as "wild"

Org	Excerpt Examples
BLM	"Wild horses and burros are defined by federal law as unbranded, unclaimed, free-roaming horses or burros found on public lands..." "Even though many biologists would call these…'feral horses' because they descend from domesticated ancestors…BLM always refers to them as wild horses because the Congress defined them that way." "...living symbols of the historic and pioneer spirit of the West…" "[WHB]... a part of America's heritage." "...have virtually no natural predators…"
USFS	"...managing the nation's wild horses and burros…" "...America's wild horses influenced the bloodlines of some of our most popular American breeds"
SWAT	"...keep the horses wild…" "KEEPING SAND WASH BASIN WILD"

MHF	"Living Symbols of the American Spirit" "...an icon of our American heritage…" "Defined by federal law, wild horses and burros are unbranded, unclaimed, free-roaming horses or burros found on public lands in the United States." "...mustangs hold rich heritage as descendants of horses who first came to the Americas…"
CF	"Wild Horses as a Returned Native Species" "...wild horses and burros are native to this continent…" "...beneficial to their habitats…"positively contributing" returned natives..to their respective ecosystems."
CWHR	"What defines a native wild horse or Colorado mustang?" "...they have evolved for hundreds of years like so many other species of animal... native or indigenous species." "...descended from horses brought to the Americas…actually feral horses." "Some supporters of mustangs on public lands assert that, while not native, mustangs are a "culturally significant" part of the American West…" "...Congress recognized that "wild free-roaming horses and burros are living symbols of the historic and pioneer spirit of the West, which continue to contribute to the diversity of life forms within the Nation and enrich the lives of the American people…" "...there is controversy as to the role mustangs have in the ecosystem as well as their rank in the prioritized use of public lands…"
AWHC	"America is the birthplace of the world's first horses...." "Wild horses play a significant role in shaping the ecosystems they inhabit." "They help maintain grassland ecosystems…" "Wild horses share their habitats with other wildlife species…can create habitats for other species…can be a critical component of rewilding...(re-establishing functionally diverse populations of large-bodied animals, including both native species and replacements for extinct species or forms)..."

Institutional Legitimacy to Act

Nuances:

- BLM & USFS describe their legitimacy as procedural and jurisdictional, as they are legally required to act and their authority is bounded by federal laws.
- SWAT: the org has responsibility for their involvement through a MOU/partnership with BLM [to administer fertility control]. Also describe moral and ethical duty to help WHB stay on range and prevent gathers
- MHF: previously had a partnership with BLM to help facilitate adoption & placement. Also describe moral and ethical duty to help WHB in holding and cultural duty to preserve a symbol of American heritage
- CF: Org details democratic/constitutional rights as American citizens to get involved in government operations as overseers of public lands

- CWHR: describe a moral and ethical responsibility to protect and preserve WH's freedom and autonomy [by providing them refuge]
- AWHC: uses multiple methods to show legitimacy as an organization via partnership building with diverse stakeholders; litigation and policy reform to enforce and enhance protections, compel accountability, and transparency from government; outreach and education; and habitat restoration projects.

Org	Excerpt Examples
BLM	"[WFRHB Act 1971…stipulates that the BLM and the U.S. Forest Service have the responsibility to manage and protect herds in their respective jurisdictions within areas where wild horses and burros were found roaming in 1971."
USFS	"...USDA Forest Service, by authority of the Secretary of Agriculture, is responsible for managing the nation's wild horses and burros on National Forest System lands." "The Forest Service administers 34 active wild horse or burro territories…jointly managed in coordination with the Bureau of Land Management."
SWAT	"... a memo of understanding with the Bureau of Land Management - the BLM. This MOU gives us the responsibility of administering fertility treatment."
MHF	"Beginning in 2006, we partnered with [BLM's WHB Program] to increase adoptions of mustangs and burros." "As Americans, we have the responsibility to preserve and steward the mustang, an icon of our American heritage."
CF	"...[CF] keeps a close eye on developments nationwide affecting our public lands and the wildlife who lives on them." "Accountability. Documentation. Solidarity. It is incredibly important … to exercise our Constitutional rights, document abuse and hold BLM accountable."
CWHR	"[CWHR] is dedicated to preserving the freedom of Colorado's wild mustangs and horses" "Our mission is to provide a safe and permanent home…continue to roam free and live out their lives in the wild… provide a range of programs to ensure their safety and preservation."
AWHC	"...nation's champion for humane, in-the-wild protection of wild horses and burros on our public lands." "Keeping America's Promise to Wild Horses" "Building a Coalition for Change" "Legal Advocacy and Enforcement" "Public Policy & Advocacy Campaigns" "AWHC educates the public, policymakers, and stakeholders"

2. Competing Definitions of Management Problem

"Problem" Definition

Nuances:

- BLM: unchecked overpopulation + lack of natural predation = resource scarcity & competition + land degradation + starvation and death, so management is justified
- USFS: textual analysis did not did not emphasize whether there was an issue
- SWAT: implicitly states that overpopulation is an issue and want to avoid gathers and removals of horses
- MHF: view off range holding as an issue for WHB because of the amount of WHB currently in holding
- CF: Org has deep mistrust for BLM because they claim that BLM or land managers' management is fundamentally flawed and biased. Org believes BLM is biased towards livestock interest and that livestock are the primary impacters of rangeland degradation, but use WHB as the escape goat instead. Additionally, the org claims that WH live in deeply bonded and intricate social groups, so management causes harm via family seperation
- CWHR: org claims BLM's increasing roundups are harmful to mustangs (WH) and subsequent captivity (holding infastuctures) strip them of family dynamics and individual freedom and autonomy, causing spiritual death.
- AWHC: org claims federal managent is fundamentally failing due to a variety of issues like inhumane treatment via helicopter gathers and overburdened holding facilities, and unfair distribution of resource and land allocation to livestock primarily and special interests.

Org	Excerpt Examples
BLM	"Because wild horses and burros are protected from hunting, and because of a lack of natural predators, if left unmanaged herds can double in size in just four to five years and quickly outgrow the ability of the land to support them."
USFS	No emphasis emerged within analyzed data
SWAT	"We believe by lowering the birth rate we are preventing the gather and removal of horses"
MHF	"Currently, more than 64,000 wild horses and burros are in off range holding facilities." "...decrease the number of wild horses and burros in off range holding facilities."
CF	"They live in deeply bonded family bands within a complex society of intricate realtionships. And they are in danger of being 'managed' into extinction." "They are rounded up by the thousand, losing in an instant what they value most– freedom and family." "BLM's anti-wild horse PR campaign would have you believe that wild horses and burros are overrunning our public lands." "BLM's livestock grazing program and millions of cattle/sheep are why 70% of the five Wyoming HMAs' wild horses are being rounded up. U.S. taxpayers subsidize

	the roundups and private livestock operations at great cost and without their knowledge." "...it is clear that it is livestock that are degrading public rangelands, a fact deliberately hidden by the managers of our public lands." "livestock have displaced wild horses from their own lands and sent them into government captivity" "Yet, over-management by humans is jeopardizing their future survival"
CWHR	"...wild horse populations experience increasing … (BLM) roundup situations.." "When you take one of these free spirits and shackle it by locking it into a relatively small space, are they really the same animal.." "Can any of us really stand behind the concept of keeping family units together over the ability to protect each horse's individual freedom?" "...spending nearly a year in crowded and severely restricted corrals at facilities such as the government holding facilities…"
AWHC	"America's wild horses and burros face inhumane treatment by our federal government, from unfair resource allocation in the wild, to cruel and costly helicopter roundups, and to overburdened holding facilities."

"Balanced Rangeland" Management

Nuances:

- BLM: to maintain balance, herds must be healthy and their size managed to be sustained on landscapes and vice versa; multiple-use landscapes require sustainable WHB population sizes
- USFS: Reasonable management is to ensure landscapes' ecological balance of wildlife and multiple uses through mindful minimal feasible intervention
- SWAT: org does not directly emphasize what balance on the range should look like, but may implicitly mention balance when describing maintaining herd sizes managed on the range via fertility control and habitat stewardship avoid gathers. They could be implying that if gathers are necessary, it suggests there is not a balance on the range.
- MHF: org recognizes that balance on rangelands is to monitor and ensure healthy population sizes of WHB among wildlife and other uses, but their focus is primarily on what happens to WHB off-range.
- CF: org suggests WHB are natural components of the land they roam, so natural regulation can maintain balance of herd size. The org suggest land and all wildlife is crucial for WHB existence. Implies that ecosystem is in balance naturally, though fertility control is still needed. (*implies: more centered on wild horses [and burros] rather than land centered, so land is important but secondary).
- CWHR: org does not emphasize what balance on a rangeland should looks like
- AWHC: org mentions "balance" and what that looks like on rangelands, but through several mechanisms: balance is achieved via effective management of [livestock] interest for resource and land competition with WHB; protecting predator-prey dynamics that promotes balance; WHB are already promoting balance in ecosystems via their ecological roles; habitat restoration mitigates negative impacts of WH and promotes ecological balance

Org	Excerpt Example
BLM	"The BLM aims to gather wild horses and burros from areas on public lands where the highest concerns exist when it comes to protecting animal health, saving critical wildlife habitat and protecting public safety by removing animals from highways and private property." "...healthy horses and burros on healthy rangelands." "...herds increase rapidly on public lands and can quickly overwhelm the food and water available to them, and cause damage to the land that can take centuries to recover." "...the BLM works to achieve…(AML) – the point at which wild horse and burro populations are consistent with the land's capacity to support them and other mandated uses of those lands, including protecting ecological processes and habitat for wildlife and livestock." "...manage the land for multiple uses while protecting the land's resources."
USFS	"Manage activities at the minimally feasible level, yet provide for natural ecological balance of all wildlife species while taking into consideration other uses"
SWAT	"...keep the horses wild on the range…" "...range conditions, make suggestions for habitat improvement"
MHF	"When managed at the appropriate management level (AML), wild horses can thrive on the range alongside other uses." "This requires careful monitoring of herd size to ensure the wild horse and burro population doesn't exceed habitat capacity." "To maintain this balance, the BLM and Forest Service orchestrate movement of animals and preparation of those mustangs and burros for adoption to qualified homes."
CF	"No land, no horses and burros" "In Cloud's remote mountain wilderness, we have a perfect opportunity to step back and watch nature call the shots. Predators and daunting weather are limiting the herd size naturally." "...we care about the preservation of all wildlife, and about the preservation of public lands as well. Without public lands, Cloud's story of wild freedom couldn't be reality"
CWHR	No emphasis
AWHC	"...balance livestock grazing and wild horse habitats on public lands…" "Protecting Natural Predators for Ecosystem Balance" "Wild horses play a significant role in shaping the ecosystems they inhabit…contribute to the health and balance of their environments. "...habitat restoration projects that aim to mitigate the negative impacts of wild horses and promote ecological balance."

3. Management Pathways

Management "Toolbox" on Range

Nuances:

- BLM: AML enforcement = inventory surveys + fertility control + helicopter/bait-traps gathers + removals
- USFS: the agency describes inventorying WHB on National Forest lands, removing excess animals, and facilitating adoption and title transfers.
- SWAT: fertility control + comprehensive documentation of individuals/herd dynamics + [encourage BLM to do] small bait traps + habitat stewardship
- MHF: no significant emphasis on what on-range management should be/what tools to use, but fertility control experimentation is mentioned. Org does not focus their participation or views on on-range management.
- CF: org does not mention whether they actively participate in the management of WHB, but rather voice what they believe management should be like and what tools to use.
- CWHR: does not actively participate in the management of wild horses but prefers that they stay on the range. Org also considers empathy-driven management that weighs ethical dilemmas and compromises involved in management decision outcomes for wild horses
- AWHC: use holistic on the range management strategies, including fertility control + predator protection + habitat resource restoration & protection + livestock grazing mitigation + climate change adaptation

Org	Excerpt Example
BLM	"...conducts routine population surveys to estimate the number of [WHB] roaming BLM-managed lands in the West." "Maintaining herd size at the appropriate management level…" "...periodically gathering and removing excess animals…conducted through the use of helicopters and where feasible and appropriate, bait-traps." "...primarily used fertility control vaccines to reduce mare fertility..."
USFS	"Maintain an inventory of wild horses and burros on National Forest System lands." "Remove excess animals from the range so as to achieve appropriate management levels of wild horses and burros."
SWAT	"...have been working ever since to document the herd, improve the range, and administer fertility treatment." "Herd documentation is a vital part of our fertility treatment program." "...visit the range and photograph the herd and track social dynamics." "...large database that includes all horses - their names, identification numbers, gender, color, physical description, ancestry, and fertility treatment history. We document births, deaths, and injuries." "We have volunteers who dart horses with fertility treatment, PZP."

	"…will do a range project such as removing old barb wire and trash, taking down old fence signs, or repairing fences. We camp out…"
MHF	No emphasis
CF	*do not mention with they actively participate in management of WHB, the following is what management should be/tools to use "Manage [WHB] on the range...Use the fertility vaccine PZP…Protect predators…Reduce livestock grazing…Restore the millions of acres of lost wild horse rangeland…Enlist volunteers to monitor, document and help administer fertility control…Stop helicopter roundups. Use bait trapping…"
CWHR	"When you take one of these free spirits and shackle it by locking it into a relatively small space, are they really the same animal, or is it truly the freedom to run free that breathes life into their soul?" "Can any of us really stand behind the concept of keeping family units together over the ability to protect each horse's individual freedom?" "For some, sacrificing their own desires for the benefit of those they truly cherish is the only way to go… while for others, sacrificing freedom in order to remain close is the only thing that counts. "There are no clear answers other than what each individual being would choose as their own destiny. The only thing we can do is try to empathize and understand what these wild and free spirits would choose for their own future – rather than what we might choose for our own."
AWHC	"In-the-Wild Management: Keeping horses in their natural habitat" "...supports the implementation of sustainable grazing practices…" "Monitoring and Assessment: Tracking the impacts of grazing on public lands" "Restoration Projects: Rehabilitating overgrazed and degraded lands" "AWHC operates the world's largest PZP fertility control program for wild horse…" "Protecting natural predators is part of a holistic conservation strategy that benefits entire ecosystems."

Gather & Removal Positions

Nuances:

- BLM: supports gathers + removals to prevent potential land degradation and argues that helicopter use is comparatively humane, effective, and the most feasible option. Gathers are still required regardless of low levels of compensatory population growth at lower densities
- USFS: no emphasis on the use of gathers and removals, other than mentioning it as a responsibility of theirs to do
- SWAT: implies that they do not like the use of gathers and removals because they prefer BLM to use small-bait traps and reducing the need for gathers via fertility control
- MHF: no emphasis, accept that gathers + removals are an expected outcome if herd sizes go beyond capacity. This theme is not their main focus/mission

- CF: org takes issue with the scale (number) of wild horses being rounded up and removed. Their claim: gathers are structurally harmful because BLM fails to follow safety procedures leasding to large-scale wild horse displacement into captivity.
- CWHR: org takes issue with increasing and large-scale roundup operations that also lead to the displacement of wild horses, far from their HMA, because this also signifies that they are losing their freedom and family bond [referring to herd behavior]
- AWHC: the org condemns the use of roundups and removals because it claims they create a harmful cycle. Roundups = physical + psychological harmful effects + triggers compensatory reproduction → more roundups needed. Moreover, the removal of WHB leads to a "financial drain" on taxpayers [referring to off-range holding]

Org	Excerpt Examples
BLM	"The BLM gathers and removes [WHB] from public lands to protect the health of the animals and health of our nation's public rangelands." "...before the range is overgrazed and damaged" "BLM gathers have proven to be more humane, effective, and efficient than other types of gather methods when large numbers of animals need to be removed over wide areas or rugged terrain, and they lead to lower rates of injury and mortality than comparable capture operations for native big game species"
USFS	No emphasis
SWAT	"If the BLM determines horses need to be removed from the range, we will be their voice and insist upon the use of humane bait and trap removal."
MHF	No emphasis
CF	"They are rounded up by the thousand, losing in an instant what they value most– freedom and family."" "When animal cruelty, abuse, and deaths occur during a BLM roundup it is usually because BLM has failed to follow these very BASIC safeguards for animal health and welfare." "Stop helicopter roundups…" …displaced wild horses from their own lands..."
CWHR	"Never Surrender Their Freedom…" "..wild horse populations experience increasing … (BLM) roundup situations…" "...[BLM] began rounding up hundreds of mustangs from two of Colorado's most iconic wild horse herds. Initially, they took hundreds… then moved south to repeat similar round up operations…Of course, no one wanted to see these amazing creatures being disturbed in any way, let alone rounded up and shipped off to far away locations…"
AWHC	"Each year, thousands of wild horses and burros are chased by helicopters, separated from their families…"

	"Helicopters chase wild horses over vast distances, causing extreme stress, injuries, and often death.The noise and relentless pursuit leave the horses terrified and exhausted. This cruel practice results in broken families and severe physical and psychological trauma for the animals." "Roundups trigger compensatory reproduction, where the removal of horses leads to higher birth rates among the remaining population…Instead of controlling populations, roundups exacerbate the problem, leading to more frequent and costly roundups." "Financial Drain on Taxpayers"

Off-Range Futures

Nuances:

- BLM: off-range corrals + off-range pastures + adoption & sale programs + partnerships to facilitate gentling/training and adoption. Acknowledge adoption to slaughter pipeline controversy
- USFS: implies that they facilitate the adoption of WHB
- SWAT: No emphasis, off-range futures are not within their scope of work
- MHF: the org's mission is to adopt out and place WHB in holding via their gentling/training programs and public event displays. They believe WHB deserve to be in homes rather than be in holding facilities
- CF: The org believes that the off-range future of WHB is loss of freedom and family, implies the scale of WHB of which they are sent into "government captivity" is not okay, implies off-range wild horses do not receive adequate shelter, and that off-range wild horses should be returned to their HMA and their land be restored [may be referring to BLM merging HMAs].
- CWHR: org provides sanctuary/refuge for wild horses that were removed from the range to restore their freedom and autonomy while providing a "wild-by-proxy" environment. They claim restrictive, unnatural, off-range holding is like a spiritual death because it takes away their free spirit and separates herd families. Although the org also recognizes that they are unable to keep families together as well [implies or possibly refers to how off-range WH are processed, impacting what individuals or families can be adopted together or separately]
- AWHC: org criticizes BLM's holding facilities for the significant financial burden it causes to taxpayers and the scale at which wild horses are held in captivity, jeopardizing their survival

Org	Excerpt Examples
BLM	"...works to place excess animals into private care through its Adoption and Sales Programs as well as successful partnerships with organizations across the nation." "Many of those animals have become excellent pleasure, show, or work horses." "Each off-range corral varies in its operating hours and how it conducts an adoption."

	"Recognizing Americans' strong desire to connect with wild horses…contracted [off-range] pastures provide a natural free-roaming environment for hundreds of wild horses gathered from overpopulated public rangelands.
USFS	"Transfer title, after one year, to individuals who have adopted [WHB] removed from public rangelands..."
SWAT	No emphasis
MHF	"...we believe every wild horse and burro in off range holding deserves a loving forever home." "...Extreme Mustang Makeover continues today as part of our Mustang Heritage Spectacular." "The Trainer Incentive Program (TIP) was created in 2007 to engage talented horse trainers across the country to help gentle, train, and find homes for [WHB]." "...facilitating more than 24,000 successful placements and adoptions…"
CF	"...displaced wild horses…sent them into government captivity by the tens of thousands." "Provide adequate shelter for all horses in holding facilities" "Return wild horses in BLM Short Term Holding to repatriated Herd Management Areas and Herd Areas"
CWHR	"Unfortunately, for the vast majority of the captured horses, they will never again feel the wind in their face as they are destined to be moved from one corral to another - both at the hands of the government - and at the hands of limited space horse facilities or private citizens." "When you take one of these free spirits and shackle it by locking it into a relatively small space, are they really the same animal, or is it truly the freedom to run free that breathes life into their soul?" "There are no paddocks, stock pens, fenced pastures or other smaller and more restrictive spaces in use with the Mustangs that are rescued and released. Instead of being relegated to small pastures where they might have an occasional opportunity to run a few hundred yards - or possibly even a few thousand feet... the wild horses living at the Refuge are able to gallop and run until they choose to stop." "The Wild Horses living on this special property are now protected and have regained the freedom and independence they had prior to government interference." "...unique opportunity for them to return to rangeland with amazing natural landscapes, including rocks, trees, hills, buttes, bluffs, and water."
AWHC	"The cost of warehousing wild horses in holding facilities is a financial burden on taxpayers, amounting to tens of millions of dollars annually." "Over 60,000 wild horses are currently held in captivity with no prospects for release. BLM data shows a continuous increase in the number of horses in holding facilities, jeopardizing the long-term survival of wild horse populations…"

Anima Welfare Position

Nuances:

- BLM: The agency assures that their management ensures welfare via numerous practices of WHB on range and off-range until equids are no longer in their care. CAWP + vet assistance during gathers + ensuring safety and well-being of WHB during gathers + increasing use of humane tools (fertility control) to reduce gathers + providing several pastures to continue free-roaming behaviors for some off-range horses + ensuring welfare and safety during adoption procedures
- USFS: the agency protects WHB from harm and ensures its welfare during the adoption period.
- SWAT: The org does not explicitly state its views on animal welfare,but, the org could be tying welfare to reductions in gathers and removals, via population control, implying that the well-being of wild horses is to keep them free and on-range.
- MHF: The org does not explicitly state its views or procedures on animal welfare, but the org could be tying animal welfare to the adoption and placement of WHB by reducing the number of WHB in off-range holding.
- CF: criticizes BLM's CAWP, deeming it performative because of instances of animal harm, particularly during gathers.
- CWHR: org ties welfare to not just physical care via an on-site veterinarian, but also spiritual well-being through freedom and autonomy, and protecting wild-spirit identity.
- AWHC: welfare is tied to humane management= fertility control + habitat stewardship (space & resources) + keeping WHB on range. Equate roundups, removals, and holding as inhumane.

Org	Excerpt Examples
BLM	"...Comprehensive Animal Welfare Program is a proactive program for protecting the welfare of wild horses and burros under the agency's management and protection." "Veterinarians are present on-site at helicopter gathers to help BLM assess and monitor the health and well-being of the wild horses." "...BLM supports humane methods of sterilizing some wild horses and burros as a method of slowing population growth and reducing the need for gathers." "Adoption Period…BLM may conduct compliance checks to ensure the animal is in good condition and in a safe environment."
USFS	"Protect wild horses and burros from capture, branding, harassment, or death." "Transfer title...provided the animals have received proper and humane care and treatment during that year."
SWAT	"We believe by lowering the birth rate we are preventing the gather and removal of horses, we are helping horses stay wild and free on the range, the only home they have ever known."
MHF	"...we believe every wild horse and burro in off range holding deserves a loving forever home."

CF	"BLM's "Comprehensive Animal Welfare Program for Wild Horse and Burro (Roundups)...generally serves as window dressing meant to appease advocates who are outraged over inhumane conditions seen at wild horse and burro roundups."
CWHR	"It is truly a beautiful sight to see when these wild horses are able to regain control of where they go and what they do completely on their own!" "We also provide our resident wild horses with exceptional care - which includes an on-site veterinary clinic dedicated to caring for the animals. However, what really keeps these horses safe, happy, healthy and in good spirits is their individual freedom!"
AWHC	"Humane Solutions for Sustainable Wild Horse Populations" "Fertility control is a humane…" "Proper habitat stewardship is essential for the survival and well-being of wild horses and burros"

4. Role of Science & Public Understanding in WHB Management

Use of Science & Knowledge

Nuances:

- BLM: the agency emphasizes their reliance on scientific research to inform management decisions and improve tools and practices. Additionally, they partner with other federal agencies (USGS), universities, and partners to answer and advance scientific inquiries & expertise
- USFS: no emphasis
- SWAT: org uses science via comprehensive documentation methods to monitor individual and herds and encourage participatory science by encouraging public to submit photos or info that will help their documentation.
- MHF: no emphasis, this theme may be outside of their mission or is not explicitly stated enough in the website data
- CF: Org uses scientific evidence and intsitutions to counter claim and discredit BLM, while also using evidence (articles and studies) to assert their claims
- CWHR: no emphasis
- AWHC: heavily rely on scientific evidence and partnerships to advance and inform management. Use various scientific methods like monitoring and documentation on various aspects like herd genetics, population dynamics, population movement, and impacts of long-term management. Uses NAS report to discredit BLM's management

Org	Excerpt Examples
BLM	"... second-highest research priority is to study relationships between wild horses and burros and their environment to inform BLM's management." "...management is already informed by the results of population genetic monitoring…"

	"…complement other BLM-supported research related to wildfire, wildlife, biodiversity conservation, restoration, and climate change." "...we continue to support research to develop new and longer-lasting fertility control vaccines" "MYTH...(NAS) recommended that the BLM stop gathering wild horses and burros…These characterizations are completely erroneous…In fact, the report recommends more intensive management of the horses and burros...." "BLM uses science to monitor rangeland vegetation, soils, water, wildlife habitat and the effects of wildfire. The BLM also relies on sound science and monitoring data to determine appropriate management levels for wild horse and burro herds. Although BLM has deep experience with resource monitoring, it is not a research agency – instead, BLM relies on the US Geological Survey (USGS), other federal agencies with research expertise, universities, and other partners to answer questions that are vital to wild horse and burro management."
USFS	No emphasis
SWAT	"A large part of our work centers around herd documentation." "We observe and take notes. We share information, and welcome photographs from visitors to the range. This information helps us identify horses and track their social structure."
MHF	No emphasis
CF	"When the actual data is examined, however...BLM data tell a vastly different story…BLM's own database, records and reports show that…" "Download the PDF handout below for all the information you need to intelligently discuss how…" "Scientific studies have found them to be "positively contributing" returned natives in North America. There have been studies done internationally on the benefit of wild horses and burros to their respective ecosystems." "National Academies of Science released a comprehensive report…on ways to utilize science for the improvement of the national Wild Horse and Burro Program… has provided invaluable data and statistics regarding the care and keeping of our wild horses and burros." *use NAS to counter CAWP: "BLM's "Comprehensive Animal Welfare Program for Wild Horse and Burro (Roundups)...generally serves as window dressing…" "articles present evidence that wild horses and burros are native…"
CWHR	No emphasis
AWHC	"Science-Based Management: Implementing strategies informed by research…genetic studies…movement patterns…Population Trends…" "Long-term studies evaluate the impact of various management practices…" "The National Academy of Sciences report states, "Management boosts horse population growth." Instead of controlling populations, roundups exacerbate the problem, leading to more frequent and costly roundups."

"Collaborative Studies: Partnering with universities and research institutions"

Public Education & Mobilization

Nuances:

- BLM: use myth busting, educational information, and legal mandate clarification to correct contested discourse and inform audiences about WHB program, history, and management.
- USFS: provides education on cultural and genetic heritage history of WHB on domesticated American horse breeds.
- SWAT: the org encourages and mobilizes the public to get involved in their efforts, learn more about their org, and participate in immersive on-range experience.
- MHF: org shares educational information terms and definitions, WHB history and contemporary review, and encourages adoption and provides information for it.
- CF: the org celieves "knowledge is power" and it is a tool to be informed and get involved with WHB, especially as civic participants overseeing government. They call on the audience to participate in roundup and adoption events to document and go on immersive experiences to get better educated.
- CWHR: Our Wild Horse Refuge allows the public to come see the horses roaming freely within our 23,000-acre Refuge
- AWHC: the org provides education and outreach to multiple communities (stakeholders, public, policy-makers, etc) to spread awareness and elevate advocacy. Additionally they share information from studies

Org	Excerpt Examples
BLM	"BLM encourages students, teachers and anybody else interested in learning about wild horses and burros to explore these resources and discover why these living legends are so ingrained in the cultural heritage of the United States, and why management is so important to their wellbeing." "Below is a collection of some common myths on how BLM manages these animals, and the facts that should be considered when forming an opinion." "[BLM] receives many questions on a day-to-day basis from members of the public and stakeholders who are engaged in the management of wild horses and burros on public lands. Below are answers to common questions…" "BLM strongly encourages anyone who has the means and desire to adopt or purchase [WHB]…"
USFS	"Did you know that America's wild horses influenced the bloodlines of some of our most popular American breeds?"
SWAT	"...our yearly on range rendezvous cleanup day…a great opportunity to meet us and learn more about what we do…encourage anyone joining us…" "If you visit Sand Wash Basin and take photographs, we encourage you to share them on our Facebook page."

	"...a group of dedicated volunteers working to support and preserve the wild horses…"
MHF	"LEARN ABOUT AMERICAN MUSTANGS Discover the history, legacy, and versatility of American mustangs and burros." "HOW YOU CAN HELP WILD HORSES & BURROS" "GLOSSARY OF TERMS" "You Can Adopt Wild Horses & Burros…REQUIREMENTS TO ADOPT A WILD MUSTANG"
CF	"...dedicated to preventing the extinction of Cloud's herd through education, media events and programming, and public involvement." "Help us communicate with lawmakers, submit comments to the BLM, attend an adoption, or get to a roundup and help us document the experience." "The best way to understand the issue of wild horse and burro management is to get on the range and see them for yourself." "Knowledge is power. This page offers a wealth of resources and information to take your advocacy to the next level." "It is incredibly important for public observers to be present at BLM roundups of wild horses and burros to exercise our Constitutional rights"
CWHR	"...needs your kind and generous support. Working together, we can combine our compassion and caring spirits to help restore the life that was stolen from so many of these beautiful creatures!" "Our Wild Horse Refuge allows the public to come see the horses roaming freely within our 23,000-acre Refuge"
AWHC	"Educational Outreach: Informing the public about the realities of roundups" "Research and Education: Providing resources and training on sustainable practices" "...educates the public, policymakers, and stakeholders…" "Educational Campaigns: Raising awareness…" "...building a broad base of support for our advocacy efforts." "knowledge Sharing: Disseminating research findings to the public and policymakers"

APPENDIX C: RHETORICAL DISCOURSE ANALYSIS FINDINGS

Bureau of Land Management- Ethos

BLM establishes credibility primarily through legal authority, institutional responsibility, scientific expertise, and administrative oversight.

1. Legal Authority & Statutory Mandate
    - Establishes legitimacy through federal law and congressional authority
    - Example cues:
        - citing statutes and legal definitions
        - references to congressional mandate
        - jurisdictional authority
2. Administrative Competence & Governance
    - Demonstrates credibility through structured procedures and oversight
    - Example cues:
        - inspections and enforcement language
        - eligibility rules and procedures
        - bureaucratic precision
3. Scientific & Technical Expertise
    - Positions the agency as scientifically informed and methodologically rigorous
    - Example cues:
        - ecological terminology
        - monitoring systems and surveys
        - transparency about uncertainty
4. Stewardship & Welfare Responsibility
    - Emphasizes humane management and responsibility for animal care
    - Example cues:
        - welfare programs
        - “healthy horses on healthy rangelands”
        - humane assurances
5. Collaborative & Borrowed Authority
    - Builds credibility through partnerships and external expertise
    - Example cues:
        - USGS, NAS references
        - interagency collaboration
        - public participation
6. Reputation Management & Trust Signaling
    - Reinforces credibility through transparency and correction of misinformation
    - Example cues:
        - MYTH/FACT structure
        - refutation of misinformation
        - confidence in program integrity

Bureau of Land Management - Pathos

BLM employs emotional appeals in a measured and controlled manner, primarily emphasizing risk, concern, and responsibility while maintaining a professional and technical tone. These

appeals support management actions by framing them as necessary to prevent harm and ensure both ecological and animal well-being.

1. Risk, Concern, and Protective Urgency
    - Evokes concern by emphasizing threats to public safety, ecological conditions, and resource availability
    - Example cues:
        - public safety concerns
        - urgency through scale (e.g., large population numbers)
        - escalating ecological risk or degradation
2. Harm, Suffering, and Welfare Concern
    - References potential or anticipated harm to animals and ecosystems to generate moral concern
    - Example cues:
        - descriptions of declining body condition
        - limited access to food or water
        - implied suffering from unmanaged populations
3. Reassurance and Care-Oriented Framing
    - Balances concern with calming language that emphasizes responsibility and care
    - Example cues:
        - "healthy horses on healthy rangelands"
        - normalization of management actions
        - assurances of humane treatment
4. Stewardship Responsibility and Duty of Care
    - Frames management as a moral responsibility to protect both animals and ecosystems
    - Example cues:
        - stewardship responsibility
        - wellbeing and care language
        - emphasis on maintaining balance
5. Heritage and Cultural Symbolism
    - Invokes cultural and historical identity to reinforce emotional connection to WHB
    - Example cues:
        - references to pioneer heritage
        - symbolic importance of wild horses
        - American identity language
6. Moral Suspicion and Refutation
    - Introduces subtle emotional cues of distrust or concern toward misinformation or external claims
    - Example cues:
        - language suggesting falsification or evasion
        - corrective or defensive tone
        - implied wrongdoing

Bureau of Land Management – Logos

BLM constructs logical arguments through structured reasoning, quantification, legal justification, and ecological explanation, presenting management decisions as evidence-based, constrained by policy, and grounded in practical and scientific considerations.

1. Causal Reasoning and Consequence Chains
    - Uses cause-and-effect logic to explain ecological conditions and justify management actions
    - Example cues:
        - overpopulation → resource degradation
        - absence of predators → population growth
        - "as a result," "therefore," "leads to"
2. Quantification and Scale-Based Evidence
    - Uses numerical data and thresholds to demonstrate scope, impact, and management necessity
    - Example cues:
        - population statistics and ratios
        - Appropriate Management Levels (AMLs)
        - quantified limits and thresholds
3. Scientific and Methodological Reasoning
    - Explains how knowledge is generated through monitoring, data collection, and scientific methods
    - Example cues:
        - population surveys and monitoring systems
        - transparency about uncertainty
        - methodological explanations and limitations
4. Legal and Policy-Based Reasoning
    - Uses laws, regulations, and procedural requirements as a logical foundation for action
    - Example cues:
        - statutory definitions and authority
        - legal constraints and permissions
        - procedural requirements and compliance
5. Comparative and Refutation Logic
    - Uses structured comparisons and rebuttals to challenge alternative claims or correct misinformation
    - Example cues:
        - MYTH/FACT structure
        - comparative claims (e.g., more effective, more humane)
        - evidence-based refutation
6. Feasibility and Constraint-Based Reasoning
    - Emphasizes practical limitations and operational realities in management decisions
    - Example cues:
        - terrain accessibility
        - logistical constraints
        - "where practical and effective"
        - management feasibility considerations
7. Economic and Resource-Based Reasoning
    - Uses cost and efficiency arguments to justify management approaches
    - Example cues:
        - cost calculations and comparisons
        - taxpayer burden framing

    - resource allocation considerations

8. Ecological Systems and Tradeoff Reasoning
    - Explains management through ecosystem interactions, carrying capacity, and tradeoffs
    - Example cues:
        - carrying capacity logic
        - cascading ecological impacts
        - balancing rangeland and horse health
        - ecosystem interactions

U.S. Forest Service - Ethos

USFS establishes credibility through legal authority, stewardship responsibility, ethical governance, and technical oversight, positioning itself as a responsible federal agency tasked with managing WHB within regulated ecological and administrative frameworks.

1. Legal and Institutional Authority
    - Establishes legitimacy through statutory grounding and formal governance structures
    - Example cues:
        - references to federal law and jurisdiction
        - institutional hierarchy and authority
        - defined management responsibility
2. Stewardship Responsibility and Ecological Duty
    - Positions the agency as a responsible steward of ecological balance and land management
    - Example cues:
        - "thriving natural ecological balance"
        - ecological responsibility language
        - measured and restrained authority
3. Ethical Governance and Welfare Responsibility
    - Builds credibility through emphasis on humane treatment and ethical management practices
    - Example cues:
        - protection from harm (e.g., capture, harassment, death)
        - adoption standards and safeguards
        - ethical regulation of management actions
4. Interagency Collaboration and Professional Governance
    - Reinforces credibility through coordination with other federal agencies
    - Example cues:
        - collaboration with BLM
        - shared management responsibility
        - interagency cooperation
5. Legitimated Intervention and Responsible Decision-Making
    - Frames management actions, including removals, as necessary, justified, and regulated
    - Example cues:
        - removals as mandated actions
        - decisions framed as responsible rather than discretionary
        - emphasis on necessity and regulation
6. Technical Competence and Administrative Oversight
    - Demonstrates capacity through monitoring systems, inventories, and structured oversight

- Example cues:
    - inventory and tracking systems
    - monitoring and management oversight
    - structured administrative processes

U.S. Forest Service - Pathos

USFS employs emotional appeals sparingly and strategically, primarily emphasizing protection from harm and cultural significance. These appeals support its role as a responsible steward while maintaining a restrained and professional tone.

1. Protection from Harm and Moral Concern
    - Uses emotionally charged language related to harm to evoke concern and reinforce a protective role
    - Example cues:
        - references to “capture,” “branding,” “harassment,” or “death”
        - emphasis on protection from harm
        - moral framing of care and responsibility
2. Heritage, Pride, and Cultural Identity
    - Invokes cultural and historical significance to create emotional connection and value
    - Example cues:
        - references to American horse breeds
        - connections to cultural legacy
        - expressions of pride in heritage

U.S. Forest Service - Logos

USFS constructs logical arguments through legal justification, structured governance processes, quantification, and ecological reasoning, presenting management decisions as organized, evidence-based, and grounded in policy and environmental considerations.

1. Legal and Policy-Based Reasoning
    - Uses law and policy as the primary logical basis for management actions and responsibilities
    - Example cues:
        - statutory authority and legal mandates
        - assignment of management responsibility
        - rule-based justification for intervention
2. Quantification and Scope-Based Evidence
    - Uses numbers and spatial scope to demonstrate organized management and administrative reach
    - Example cues:
        - number of animals or populations
        - geographic distribution and locations
        - scale of land or management areas
3. Evidence-Based Monitoring and Data Systems
    - Emphasizes data collection and monitoring as the basis for informed decision-making
    - Example cues:
        - inventories and tracking systems
        - monitoring practices

    - record-keeping and data-driven management

4. Ecological and Scientific Reasoning
    - Uses ecological concepts and system-based logic to justify management actions
    - Example cues:
        - ecological balance and system stability
        - population control as ecological necessity
        - justification of minimal or appropriate intervention
5. Procedural and Rule-Based Management Logic
    - Presents management as structured processes governed by defined steps and conditions
    - Example cues:
        - conditional processes ("if X, then Y")
        - stepwise management procedures
        - planning and governance order
6. Causal and Historical Reasoning
    - Uses cause-and-effect relationships and historical context to support claims about WHB
    - Example cues:
        - lineage or breeding-related causality
        - historical timelines
        - cause–effect explanations of management context

Sand Wash Advocate Team- Ethos

SWAT establishes credibility through hands-on management involvement, technical expertise, partnership with federal agencies, and advocacy grounded in stewardship, positioning itself as a knowledgeable and actively engaged collaborator in WHB management.

1. Hands-On Management and Experiential Authority
    - Builds credibility through direct involvement in monitoring and managing horse populations
    - Example cues:
        - on-the-ground observation and fieldwork
        - direct interaction with herds
        - active participation in management practices
2. Technical Expertise and Applied Knowledge
    - Demonstrates authority through specialized skills and implementation of management techniques
    - Example cues:
        - certified volunteers administering fertility control (e.g., PZP)
        - use of approved methods and protocols
        - technical understanding of population management
3. Partnership-Based Legitimacy and Institutional Collaboration
    - Establishes credibility through collaboration with federal agencies and formal agreements
    - Example cues:
        - memorandum of understanding (MOU) with BLM
        - cooperative management efforts
        - alignment with agency-approved programs
4. Stewardship and Responsibility for WHB

- Frames authority through a commitment to care, monitoring, and responsible management
- Example cues:
    - ongoing monitoring of herds
    - responsibility for population health
    - stewardship language emphasizing care and oversight

5. Advocacy and Community-Based Engagement
    - Builds legitimacy through public involvement and advocacy efforts
    - Example cues:
        - community outreach and education
        - encouraging public participation
        - positioning as a voice for WHB

Sand Wash Advocate Team - Pathos

SWAT employs moderate and care-oriented emotional appeals, emphasizing responsibility, concern for horse well-being, and community connection. These appeals highlight both the importance of protecting WHB and the role of active stewardship in maintaining healthy populations.

1. Care, Responsibility, and Stewardship
    - Appeals to a sense of responsibility for monitoring and caring for WHB
    - Example cues:
        - concern for horse well-being
        - responsibility to manage populations
        - stewardship-oriented language
2. Concern, Risk, and Population Management Awareness
    - Evokes concern about population growth and its consequences
    - Example cues:
        - references to overpopulation concerns
        - risks to herd health or resources
        - need for active management
3. Human–Animal Connection and Familiarity
    - Builds emotional connection through close interaction with local herds
    - Example cues:
        - familiarity with individual horses
        - relational language based on observation
        - connection developed through fieldwork
4. Community Engagement and Shared Responsibility
    - Encourages involvement and collective responsibility for WHB
    - Example cues:
        - calls for public participation
        - community-based involvement
        - shared stewardship messaging
5. Hope, Care, and Positive Management Outcomes
    - Uses reassuring and hopeful language to emphasize successful management
    - Example cues:
        - positive framing of fertility control outcomes

    - reassurance of herd health
    - optimism about sustainable management

Sand Wash Advocate Team Logos

SWAT constructs logical arguments through applied management reasoning, fertility control implementation, monitoring practices, and feasibility-based decision-making, presenting its approach as practical, effective, and grounded in real-world experience.

1. Fertility Control and Population Management Reasonin
    - Uses cause-and-effect logic to explain how fertility control regulates population growth
    - Example cues:
        - PZP reduces reproduction rates
        - controlling birth rates stabilizes populations
        - links between fertility control and long-term management
2. Applied and Experience-Based Management Logic
    - Grounds reasoning in direct, on-the-ground implementation and observation
    - Example cues:
        - outcomes based on fieldwork and monitoring
        - practical knowledge from managing herds
        - real-world application of management techniques
3. Monitoring and Data-Informed Decision-Making
    - Emphasizes tracking and observation as the basis for evaluating management outcomes
    - Example cues:
        - ongoing monitoring of herd size and health
        - data collection from field observations
        - adjustments based on observed trends
4. Feasibility and Practical Implementation Reasoning
    - Highlights the practicality and effectiveness of fertility control as a management strategy
    - Example cues:
        - PZP as a feasible alternative to removals
        - accessibility and implementability of methods
        - efficiency in managing populations
5. Comparative and Alternative Management Reasoning
    - Positions fertility control as preferable to other management approaches
    - Example cues:
        - comparison to gathers or removals
        - fertility control framed as more humane or sustainable
        - alternative solution framing
6. Collaborative and Institutional Alignment Logic
    - Uses partnership with agencies as a logical justification for legitimacy and effectiveness
    - Example cues:
        - coordination with BLM
        - alignment with approved management practices
        - shared responsibility in implementation
7. Ecological and Population Balance Reasoning
    - Explains management through maintaining ecological balance and herd health
    - Example cues:

    - balancing population size with available resources
    - maintaining herd health
    - preventing overpopulation impacts

Mustang Heritage Foundation - Ethos

MHF establishes credibility through partnership with federal agencies, program-based expertise, demonstrated outcomes, and stewardship grounded in cultural values, positioning itself as a collaborative and results-oriented organization.

1. Partnership-Based Legitimacy and Institutional Alignment
    - Builds credibility through collaboration with federal agencies and alignment with established management programs
    - Example cues:
        - partnership with BLM
        - references to cooperative management efforts
        - alignment with federal adoption programs
2. Programmatic Expertise and Hands-On Involvement
    - Demonstrates authority through direct involvement in training, adoption, and management initiatives
    - Example cues:
        - training programs and initiatives
        - involvement in adoption processes
        - structured program implementation
3. Demonstrated Outcomes and Track Record of Success
    - Establishes credibility through measurable achievements and program results
    - Example cues:
        - number of successful adoptions or placements
        - long-term program success
        - evidence of effectiveness
4. Stewardship and Care-Oriented Responsibility
    - Frames credibility through responsibility for animal care and well-being
    - Example cues:
        - humane handling and training
        - commitment to horse welfare
        - responsible stewardship language
5. Cultural Heritage and Identity-Based Credibility
    - Connects authority to shared cultural values and national identity
    - Example cues:
        - references to American heritage
        - mustangs as cultural symbols
        - preservation of tradition

Mustang Heritage Foundation Pathos

MHF uses positive and inspirational emotional appeals to frame wild horses as culturally meaningful, worthy of care, and connected to human identity. These appeals emphasize heritage, pride, empathy, and hope, encouraging public engagement and support.

1. Heritage, Identity, and Cultural Pride

- Invokes national identity and cultural significance to create emotional connection
- Example cues:
    - references to American heritage and tradition
    - mustangs as symbols of the American West
    - pride in cultural legacy

2. Empathy, Care, and Human–Animal Connection
    - Encourages emotional attachment and compassion toward horses
    - Example cues:
        - language emphasizing care and connection
        - human–animal relationships
        - gentle or compassionate framing of horses
3. Hope, Inspiration, and Positive Transformation
    - Uses uplifting language to emphasize positive outcomes and meaningful engagement
    - Example cues:
        - success stories and transformation narratives
        - hopeful or inspirational tone
        - framing adoption as rewarding
4. Responsibility, Stewardship, and Shared Duty
    - Appeals to a sense of responsibility to care for and preserve WHB
    - Example cues:
        - stewardship language
        - shared responsibility for preservation
        - calls to care for mustangs
5. Encouragement, Participation, and Public Engagement
    - Uses motivating language to invite involvement and action
    - Example cues:
        - invitations to adopt or participate
        - empowering tone (“you can help”)
        - framing engagement as meaningful and accessible

Mustang Heritage Foundation Logos

MHF constructs logical arguments through program-based reasoning, outcome-driven evidence, feasibility considerations, and solution-oriented framing, presenting adoption and training as practical and effective approaches to WHB management.

1. Programmatic and Process-Based Reasoning
    - Uses structured programs and processes as the logical basis for management solutions
    - Example cues:
        - training and adoption programs
        - organized initiatives and procedures
        - step-by-step program implementation
2. Outcome-Based Evidence and Effectiveness Claims
    - Demonstrates effectiveness through measurable results and program success
    - Example cues:
        - number of successful adoptions or placements
        - evidence of program impact
        - long-term success metrics

3. Feasibility and Practical Solution Framing
    - Emphasizes the practicality and workability of adoption-based approaches
    - Example cues:
        - adoption as a viable management strategy
        - feasibility of training and placement
        - accessible and implementable solutions
4. Economic and Resource Efficiency Reasoning
    - Uses cost and resource considerations to support program-based approaches
    - Example cues:
        - reduced cost through adoption
        - resource efficiency
        - financial practicality of solutions
5. Human–Animal Relationship and Behavioral Reasoning
    - Explains outcomes through interactions between humans and horses
    - Example cues:
        - trainability of mustangs
        - human–horse bonding
        - behavioral transformation through training
6. Comparative and Alternative Solution Reasoning
    - Positions adoption and training as preferable alternatives to other management approaches
    - Example cues:
        - comparison to holding or removal strategies
        - adoption framed as more effective or humane
        - alternative pathway framing

The Cloud Foundation Ethos

TCF establishes credibility through scientific advocacy, ecological expertise, moral authority, and critical positioning, presenting itself as both a knowledgeable and ethically driven actor advocating for alternative interpretations of WHB management.

1. Scientific Advocacy and Evidence-Based Authority
    - Builds credibility by referencing scientific research and positioning itself as aligned with ecological knowledge
    - Example cues:
        - citing studies or scientific findings
        - references to ecological benefits of equids
        - use of scientific language to support claims
2. Expertise Signaling and Knowledge Authority
    - Demonstrates authority through claims of specialized knowledge and informed interpretation
    - Example cues:
        - explanatory tone and detailed ecological claims
        - authoritative statements about WHB impacts
        - positioning as knowledgeable about ecosystem dynamics
3. Advocacy-Based Credibility and Activist Identity
    - Establishes legitimacy through active involvement in advocacy and public engagement

- Example cues:
    - encouraging public action or participation
    - positioning as a defender of WHB
    - advocacy-oriented mission framing

4. Moral Authority and Ethical Framing
    - Constructs credibility through ethical positioning and value-based claims
    - Example cues:
        - justice-oriented language
        - framing actions as right or wrong
        - appeals to fairness and responsibility
5. Transparency and Information Framing
    - Builds trust through selective presentation and framing of information as corrective or revealing
    - Example cues:
        - highlighting overlooked or misrepresented information
        - framing content as exposing truth
        - emphasis on informing the public
6. Critique of Institutional Authority and Policy
    - Establishes credibility by challenging existing management practices and institutional decisions
    - Example cues:
        - criticism of BLM policies or practices
        - questioning scientific or policy assumptions
        - positioning as an alternative authority

The Cloud Foundation Pathos

The Cloud Foundation (TCF) employs explicit and emotionally expressive language to frame WHB management as an ethical, urgent, and morally significant issue. These appeals emphasize suffering, injustice, ecological importance, and cultural meaning, encouraging emotional engagement and advocacy.

1. Suffering, Harm, and Moral Outrage
    - Uses vivid language to evoke concern about cruelty and negative impacts on horses
    - Example cues:
        - references to “brutal,” “inhumane,” or “cruel” practices
        - descriptions of stress, fear, or suffering
        - framing management actions as harmful or unjust
2. Freedom, Wildness, and Identity Symbolism
    - Invokes symbolic meanings of wild horses to create emotional attachment and value
    - Example cues:
        - references to “wild and free”
        - horses as symbols of freedom or the American West
        - identity-based language tied to heritage and meaning
3. Urgency, Crisis, and Imminent Loss
    - Frames WHB management as an urgent issue requiring immediate attention
    - Example cues:

    - language indicating crisis or emergency
    - warnings about irreversible consequences
    - emphasis on time-sensitive action

4. Justice, Fairness, and Moral Responsibility
    - Appeals to ethical principles of fairness and responsibility to influence judgment
    - Example cues:
        - framing actions as unjust or unfair
        - responsibility to protect WHB
        - moral evaluation of policy or management practices

5. Empathy, Care, and Human–Animal Connection
    - Encourages emotional identification with horses to strengthen concern and engagement
    - Example cues:
        - language inviting empathy or compassion
        - anthropomorphic framing (e.g., "families," "spirits")
        - emotional connection between humans and animals

6. Hope, Empowerment, and Collective Action
    - Uses positive emotional framing to encourage involvement and advocacy
    - Example cues:
        - calls to action ("you can help")
        - hopeful or solution-oriented language
        - empowerment through participation

7. Ecological Reverence and Environmental Value
    - Frames WHB as beneficial and meaningful components of ecosystems
    - Example cues:
        - language emphasizing ecological harmony or balance
        - positive valuation of horses' environmental role
        - reverence for natural systems

The Cloud Foundation - Logos

TCF constructs logical arguments through ecological reasoning, scientific claims, policy critique, and alternative causal explanations, often challenging dominant management narratives and presenting competing interpretations of WHB impacts.

1. Ecological and Systems-Based Reasoning
    - Uses ecological concepts to argue that WHB contribute positively to ecosystems
    - Example cues:
        - horses as beneficial to biodiversity or ecosystem processes
        - references to natural system functions
        - ecological balance framed as inclusive of WHB

2. Scientific Evidence and Research-Based Claims
    - Draws on scientific studies or research to support alternative interpretations of WHB impacts
    - Example cues:
        - citation or reference to scientific findings
        - claims about ecological benefits of equids
        - use of scientific terminology to support arguments

3. Alternative Causal Reasoning and Problem Reframing

- Reinterprets cause-and-effect relationships to challenge dominant explanations of rangeland conditions
- Example cues:
    - livestock, not horses, as primary drivers of degradation
    - questioning overpopulation as the central issue
    - reframing causes of ecological impact

4. Policy Critique and Institutional Counter-Arguments
    - Uses logical critique to challenge federal management practices and assumptions
    - Example cues:
        - questioning BLM data or conclusions
        - identifying inconsistencies in policy or implementation
        - presenting counter-arguments to agency claims
5. Comparative and Analogical Reasoning
    - Uses comparisons or examples from other contexts to support claims
    - Example cues:
        - references to European or other global equid systems
        - analogies to other ecological systems
        - cross-context comparisons
6. Selective Evidence Framing and Interpretive Emphasis
    - Highlights specific evidence while downplaying or omitting alternative perspectives
    - Example cues:
        - emphasis on particular data points or studies
        - prioritization of supportive evidence
        - framing evidence to reinforce a specific interpretation
7. Feasibility and Management Alternative Reasoning
    - Proposes alternative solutions and evaluates their practicality
    - Example cues:
        - fertility control as a preferred management approach
        - arguments for non-removal strategies
        - feasibility of alternative interventions
8. Tradeoff and Value-Based Reasoning
    - Frames management decisions as involving tradeoffs between ecological, ethical, and policy considerations
    - Example cues:
        - balancing animal welfare with land management
        - highlighting competing priorities
        - evaluating consequences of different approaches

The [Colorado] Wild Horse Refuge - Ethos

CWHR establishes credibility through sanctuary-based stewardship, experiential expertise, ethical authority, and advocacy for alternative management approaches, positioning itself as a protector and caretaker of wild horses.

1. Sanctuary-Based Stewardship and Care Authority
    - Builds credibility through providing refuge and direct care for horses
    - Example cues:
        - “safe haven” or sanctuary language

    - emphasis on protection and long-term care
    - provision of veterinary and daily support

2. Experiential and Hands-On Expertise
    - Establishes authority through direct, lived experience with horses
    - Example cues:
        - daily management and observation of herds
        - hands-on knowledge of horse behavior
        - experiential understanding of care and needs

3. Ethical Authority and Moral Responsibility
    - Constructs legitimacy through value-based claims about care and protection
    - Example cues:
        - language emphasizing what is “right” or “responsible”
        - moral framing of management decisions
        - duty to protect and respect horses

4. Advocacy for Alternative Management Approaches
    - Builds credibility by promoting sanctuary-based or non-removal solutions
    - Example cues:
        - critique of traditional management practices
        - promotion of refuge or preservation models
        - positioning alternatives as more humane

5. Transparency and Educational Framing
    - Establishes trust through sharing information and educating the public
    - Example cues:
        - explaining management practices
        - public-facing educational content
        - openness about operations and philosophy

6. Cultural and Symbolic Framing of Horses
    - Connects credibility to broader cultural and symbolic meanings of WHB
    - Example cues:
        - horses as symbols of freedom or identity
        - references to cultural or societal significance
        - framing horses as more than livestock

The Wild Horse Refuge - Pathos

The Wild Horse Refuge (CWHR) uses deeply relational and empathy-driven emotional appeals to frame wild horses as sentient beings deserving care, protection, and respect. These appeals emphasize individual experience, suffering, freedom, and moral responsibility, fostering strong emotional connection and ethical concern.

1. Empathy, Connection, and Individualized Experience
    - Encourages emotional identification with horses as individuals
    - Example cues:
        - emphasis on individual horses and their experiences
        - language inviting understanding or connection
        - focus on personality, behavior, or lived experience

2. Suffering, Vulnerability, and Moral Concern

- Highlights harm or vulnerability to evoke compassion and ethical concern
- Example cues:
    - descriptions of fear, stress, or hardship
    - vulnerability of horses in management contexts
    - framing harm as morally significant

3. Freedom, Wildness, and Autonomy
    - Frames horses as inherently free beings whose autonomy should be respected
    - Example cues:
        - "wild and free" language
        - emphasis on autonomy and natural behavior
        - protection of freedom as a core value
4. Moral Responsibility and Ethical Obligation
    - Appeals to a sense of duty to protect and care for horses
    - Example cues:
        - responsibility to safeguard WHB
        - ethical framing of human decision-making
        - calls to act in the horses' best interest
5. Reverence, Respect, and Intrinsic Value
    - Positions horses as inherently valuable beyond utility or management considerations
    - Example cues:
        - language emphasizing respect and dignity
        - framing horses as meaningful or special beings
        - valuing existence beyond economic or ecological roles
6. Hope, Care, and Sanctuary-Based Security
    - Uses positive emotional framing to emphasize safety, care, and protection
    - Example cues:
        - sanctuary as a safe and stable environment
        - reassurance of care and protection
        - hopeful framing of refuge-based solutions

The [Colorado] Wild Horse Refuge - Logos

CWHR constructs logical arguments through sanctuary-based reasoning, ethical justification, experiential knowledge, and alternative management framing, presenting refuge and long-term care as viable and humane approaches to WHB management.

1. Sanctuary-Based and Care-Oriented Reasoning
    - Uses the refuge model as the primary logical solution for WHB management
    - Example cues:
    - sanctuary as a sustainable alternative
    - long-term care and protection as a management strategy
    - refuge-based solutions to population concerns
2. Ethical and Welfare-Based Reasoning
    - Grounds arguments in ethical principles and animal welfare considerations
    - Example cues:
    - prioritization of humane treatment
    - evaluation of management practices based on welfare outcomes

- ethical justification for non-removal approaches

3. Experiential and Observation-Based Knowledge
    - Uses direct experience with horses as a basis for reasoning and claims
    - Example cues:
    - observations of horse behavior and social structure
    - experiential insights into care and management
    - knowledge derived from hands-on interaction
4. Alternative Management and Non-Removal Logic
    - Promotes alternative approaches that differ from federal management strategies
    - Example cues:
    - critique of removal or holding practices
    - advocacy for preservation and sanctuary models
    - framing alternatives as more humane and effective
5. Comparative and Value-Based Reasoning
    - Evaluates management approaches by comparing ethical and practical outcomes
    - Example cues:
        - comparing sanctuary to holding or removal
        - weighing welfare outcomes across approaches
        - emphasizing value-based decision criteria
6. Feasibility and Sustainability Framing
    - Presents sanctuary-based approaches as practical and sustainable solutions
    - Example cues:
        - long-term viability of refuge models
        - sustainability of care-based management
        - practical implementation of alternatives

American Wild Horse Conservation - Ethos

AWHC establishes credibility through national-level advocacy, policy engagement, partnerships with scientific and institutional actors, and leadership in promoting humane management approaches, positioning itself as a prominent and influential voice in WHB policy and public discourse.

1. National Advocacy Leadership and Organizational Authority
    - Builds credibility by positioning itself as a leading organization in WHB advocacy
    - Example cues:
    - “nation’s leading” or “champion” framing
    - broad organizational scope and influence
    - leadership in advocacy efforts
2. Policy Engagement and Institutional Involvement
    - Establishes legitimacy through involvement in policy processes and governance discussions
    - Example cues:
        - engagement with lawmakers or policy initiatives
        - references to influencing legislation or decision-making
        - participation in policy discourse
3. Partnerships with Scientific and Institutional Actors

- Reinforces credibility through collaboration with researchers, universities, and experts
- Example cues:
    - partnerships with scientists or academic institutions
    - references to research collaboration
    - alignment with expert knowledge

4. Advocacy-Based Credibility and Public Representation
    - Builds authority through representing public interest and advocating for WHB
    - Example cues:
        - positioning as a voice for wild horses
        - advocacy-oriented mission language
        - emphasis on protecting WHB
5. Humane Management and Ethical Positioning
    - Establishes credibility through emphasis on humane and ethical approaches
    - Example cues:
        - promotion of humane treatment
        - ethical framing of management practices
        - positioning alternatives as more responsible
6. Public Engagement and Mobilization
    - Reinforces legitimacy through encouraging public involvement and collective action
    - Example cues:
        - calls to action
        - encouraging public participation
        - mobilizing support for WHB issues

American Wild Horse Conservation - Pathos

AWHC employs advocacy-driven emotional appeals that emphasize justice, urgency, and public responsibility. These appeals frame WHB management as an issue requiring protection, fairness, and collective action, encouraging public engagement and policy awareness.

1. Justice, Fairness, and Moral Concern
    - Appeals to ethical principles to frame management practices as fair or unjust
    - Example cues:
        - language emphasizing injustice or inequity
        - moral evaluation of management actions
        - framing WHB protection as a matter of fairness
2. Urgency, Threat, and Need for Action
    - Uses emotionally charged language to highlight the immediacy of the issue
    - Example cues:
        - warnings about ongoing or escalating threats
        - urgency in policy or management decisions
        - emphasis on the need for timely intervention
3. Protection, Advocacy, and Responsibility
    - Frames WHB as requiring protection and positions audiences as responsible actors
    - Example cues:
        - calls to protect wild horses and burros
        - advocacy language emphasizing responsibility
        - positioning action as necessary and meaningful

4. Public Empowerment and Collective Action
    - Encourages emotional engagement through participation and involvement
    - Example cues:
        - calls to contact lawmakers or support initiatives
        - "you can help" messaging
        - framing participation as impactful
5. Cultural Value and Symbolic Importance
    - Invokes cultural and symbolic meanings to reinforce emotional connection
    - Example cues:
        - references to WHB as icons of the American West
        - symbolic framing of wild horses
        - cultural significance language

American Wild Horse Conservation - Logos

AWHC constructs logical arguments through policy-based reasoning, scientific claims, critique of existing management practices, and advocacy for alternative solutions, presenting WHB management as an issue that can be addressed through reform, evidence, and public engagement.

1. Policy and Governance-Based Reasoning
    - Uses policy frameworks and legislative context to support arguments about WHB management
    - Example cues:
        - references to laws, regulations, or policy proposals
        - discussion of legislative actions or reforms
        - governance-based justification for change
2. Scientific Evidence and Research-Based Claims
    - Draws on scientific studies and data to support claims about WHB and rangeland conditions
    - Example cues:
        - references to research findings
        - use of ecological or scientific terminology
        - claims supported by studies or expert sources
3. Critique of Existing Management Practices
    - Uses logical critique to challenge federal management approaches
    - Example cues:
    - questioning effectiveness of current policies
    - identifying perceived flaws or inconsistencies
    - critique of gathers, removals, or holding practices
4. Alternative Solution and Reform-Oriented Reasoning
    - Proposes alternative approaches and policy changes
    - Example cues:
        - fertility control as a preferred strategy
        - advocacy for reform or new management approaches
        - emphasis on humane or improved solutions
5. Comparative and Effectiveness-Based Reasoning
    - Evaluates management strategies by comparing outcomes and effectiveness
    - Example cues:

    - comparing current practices to alternatives
    - claims about improved outcomes
    - effectiveness-based evaluation of approaches

6. Cost, Efficiency, and Resource-Based Reasoning
    - Uses economic and resource considerations to support arguments for change
    - Example cues:
        - taxpayer cost framing
        - financial burden of current management
        - efficiency of alternative approaches
7. Cause-and-Effect and Problem Reframing
    - Reinterprets causal relationships to shift understanding of WHB impacts
    - Example cues:
        - alternative explanations for rangeland conditions
        - questioning dominant problem definitions
        - reframing causes of ecological issues