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Review Article

How Kachana Improved Soil Health and Rehydration by Using Donkeys Thus Reducing Wildfire Devastation of the Ranchlands

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Abstract

This article explores a unique case for Permaculture and Regenerative Agriculture practices in Australia where desertification and fires have decimated landscapes. Through the utility and stewardship of domestic animals, parts of the land and soil in Kachana were able to rehydrate and retain water, establishing healthy soils. This made the land resistant to wildfires and erosion, thus ensuring the long-term success of this remote desert ranch. Similar strategies could be employed in other arid regions of the world to rehydrate landscapes so that during times of drought there are stable water and food sources. Rehydration is a direct result of policy entrepreneurs responding to urgent environmental crises, and spearheading local sustainable interventions, in this case, free roaming donkeys in Kachana for land rehydration, and wildfire management through community-led innovation helping address systemic policy challenges in the region. This potential policy innovation will be accomplished through purposeful cooperative collaboration with government at all levels, non profit companies, for profit companies, citizens, and the public policy entrepreneur if those involved have the foresight to act during this window of opportunity.

Keywords: Agriculture; Australia; Donkey Management; Permaculture; Public Policy Innovation; Rangelands; Regenerative; Rehydration

Executive Summary

Chris Henggeler [1] a pioneer in regenerative agriculture is at odds with the Australian Government for using escaped domestic donkeys [2] classified as invasive pest species over the past 30 years to transform the arid dry homestead where he lives into a lush green oasis. Kachana station has successfully changed a part of their environment of the Kimberly into green paddocks and fresh running water. His healthy soil retains water and repels erosion discouraging fire. The irony is groups like the Rangeland Rehydration Alliance are confirming the work this policy entrepreneur is doing on the homestead is working. The Australian government should consult experts in permaculture and regenerative agriculture science to further demonstrate how the practices Chris employs benefit agriculture and wildlife in the Kimberly. New research suggests past augments made against escaped domestic donkeys are influenced as much by social, cultural, and political factors as they are by ecological ones [3].

Introduction

Chris Henggeler, a grazier at Kachana Station in the East Kimberley region of Western Australia, has been at the center of a significant environmental and legal debate due to his unconventional use of feral donkeys for land regeneration [4]. Chris, a policy entrepreneur and grassroots innovator, actively manages a population of 100 to 250 feral donkeys that readily graze on areas inaccessible to cattle. The donkeys climb steep terrain that cattle have no interest in climbing and eat vegetation that cattle will not eat.

The Heggeler family has been managing the land at Kachana Station since the late 1980's. Because of his life experiences he realized the land was slowly desertifying. What he learned over time is that donkeys can be used to help mimic natural herd movements, promoting soil health, growth of new vegetation, and rehydration [5] of the land. While some may argue that desertification and fires are the natural state of the East Kimberly, Chris has come to know the importance of stewarding the land so both wild and domestic life can thrive. These ecological arguments against donkeys are influenced heavily by social factors, cultural norms, and traditions passed down through generations who have a desire to protect the environment, as well as, political factors that want to control the open rangeland.

Some conservation skeptics emphasize that donkeys cause erosion, spread weeds, and compete with native species. The broader scientific community has not reached a consensus on ecological benefits versus the risks associated with feral donkeys in Australia. Chris has found that by managing the feral population and strategically and humanely removing the jacks, he has been able to influence the behavior of the animals, and get groups of them to graze where he wants them to graze. He believes that because these animals have not had predators it is important for humans to become the predator in a humane ethical fashion in order to manage them. It is important the group does not learn to fear man, but when animals see a member die they tend to act differently, and the unwanted behaviors some attribute to donkeys change. Stealthy selective humane population management is the key.

In Australia the policy stream, politics stream and problem streams have converged with social, economic, political, and demographic determinants to form a window of opportunity for public policy entrepreneurs to influence policy adoption. If the government and policy entrepreneur through purposeful cooperative collaboration [6] work together with non profits organizations, for profit companies, and citizens they can take advantage of an opportunity to adopt new innovative policies allowing rehydration of desertified soil. This rehydration will enable plant growth, improve soil structure, support soil biology, prevent erosion and soil loss, increase water infiltration, and improve water availability to restore the soil's ability to support life.

Groups in Australia interested in habitat restoration

NSW Government Department of Primary Industries, NSW Government Local Land Services, Far West Rangeland Rehydration Alliance, Western Landcare NSW, E.M.U Ecosystem Management Understanding, Australian Government, Future Drought Fund. These government organizations should work with the policy entrepreneur to innovate. Their innovation success could lead others in the world like the Wildlife and Habitat Improvement of Nevada to replicate their strategies. It is widely accepted that the climate is getting hotter and dryer and there is a need in arid landscapes to find solutions for water retention. Using donkeys to assist in the rehydration of desertified soils is an innovative approach that if found to work could be replicated globally.

Policy Analysis: Rethinking the Management of Free-Roaming Donkeys in a Changing Ecological Landscape

Background

Free-roaming donkeys (Equus Asinus) are present on nearly every continent and are typically classified as non-native or invasive in ecosystems where they were introduced. Historically used for transportation, agriculture, and labor particularly in colonial contexts donkeys have since established independent populations. Their classification as pests or feral species has led to widespread management efforts, often without species-specific scientific justification.

Recent scholarship, particularly Clancy., *et al.* (2021) calls for a reassessment of how these animals are studied, categorized, and managed. The findings underscore the need for a shift from compositionalist, origin-focused conservation models to more functionally driven and context-sensitive approaches.

Problem statement

Conservation and wildlife management policies globally continue to treat free-roaming donkeys as ecologically harmful based on limited, outdated, or generalized evidence. This often results in reactive, inhumane, and ecologically questionable management practices, including culling. The lack of species-specific data and reliance on binary classifications (native vs. invasive) undermined effective and ethical decision-making.

Policy options and analysis

Policy Option	Description	Benefits	Challenges
Maintain status quo (binary invasive species model)	Continue treating donkeys as non-native/invasive under existing laws.	Simple; aligns with traditional conservation frameworks.	Ignores emerging science; may promote inhumane practices and ecological misjudgments.
Adopt Species-specific ecological assessments requirements	Mandate that environmental impact assessments distinguish donkeys from other equids or herbivores.	Improves ecological accuracy; supports targeted policy.	Requires capacity-building and funding for field research.
Support functional conservation approaches	Manage rehydration predator prey relationship to manage positive donkey behavior based on ecological roles (e.g., seed dispersal, disturbance regimes) rather than origin.	Encourages dynamic ecosystem thinking; supports landscape resilience.	May challenge entrenched conservation norms.
Expand conservation grazing and rewilding programs	Introduce or maintain small donkey populations in controlled settings to manage vegetation.	Builds on successful European models; offers public engagement potential.	Must be carefully managed to avoid unintended impacts.
Integrate local, Indigenous, and historical knowledge	Incorporate place-based knowledge and colonial histories into policy frameworks.	Increases legitimacy, equity, and context-specific insights.	Requires cross-sector collaboration and paradigm shifts in governance.

Table a

Recommended policy direction

Based on the findings of Clancy., *et al.* (2021) and broader interdisciplinary literature, we recommend a hybrid policy strategy that includes the following components.

Mandate species-specific impact assessments

- Require ecological studies to differentiate donkeys from other equids and herbivores. (All equids and herbivores should be studied for their utility just because they cooperate with man does not mean their utility is lost, similar studies should be done for other equids and herbivores.)
- Support long-term, site-specific ecological research.

Transition toward functional conservation frameworks

- Acknowledge the ecological functions donkeys may serve (e.g., in fire-prone or arid ecosystems)
- Prioritize ecosystem services over static compositional goals.

Promote ethical, humane management standards

- Apply animal welfare best practices to all population control efforts.
- Avoid eradication campaigns unless supported by site-specific data

Facilitate interdisciplinary and cross-cultural collaboration

- Engage social scientists, Indigenous leaders, and local communities
- Include donkey history and cultural significance in conservation narratives

Improve global data coordination and representation

- Create accessible databases for donkey-specific ecological research.
- Create accessible databases or other equids and herbivores.

Implementation considerations

- **Legislative Review:** Evaluate national wildlife and invasive species laws for flexibility.
- **Funding:** Allocate resources for research, humane control methods, and education.
- **Public Engagement:** Develop metrics to assess ecological outcomes, animal welfare, and community satisfaction

Conclusion

Free-roaming donkeys occupy a complex ecological and cultural position in many regions. Policy must move beyond simplistic labels and outdated management tactics. By adopting a science-informed, ethically grounded, and context-specific approach, policy makers can better balance ecological goals, community interests, and animal welfare in the management of free-roaming donkeys.

The Kachana rehydration project challenges entrenched paradigms and illustrates that local, decentralized responses when led by committed policy entrepreneurs can produce effective scalable solutions to complex social and ecological problems. Innovation flourishes when policy windows are exploited, community values are honored, and functional outcomes are prioritized over rigid classifications or political orthodoxy. This case calls for a framework that embraces local knowledge and self governance for the benefit of all life.

Conflict of Interest

I am the youth director at the Wildlife and Habitat Improvement of Nevada. I am a volunteer and have no financial interest in the organization. I am not paid a salary, and I often utilize my own money to participate in conservation projects they perform.

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