

WEA BRIEFING P A P E R S



WILD FARM ALLIANCE

This Wild Farm Alliance Briefing Paper is part of a series that explores many of the issues that define and distinguish the concept of farming with the wild.

Each paper focuses on a particular issue set in the context of reconnecting food systems with ecosystems. We are striving to bridge the gap between stewardship farming and wildlands conservation. To obtain other papers in this series, or to learn more about our programs, contact the Wild Farm Alliance.

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Grazing for Biodiversity: The Co-Existence of Farm Animals & Native Species

Grazing lands comprise more than 40% of the U.S. continental land base. When optimally managed, farms and ranches support healthy grasslands and wildlife forage plants, efficient watersheds, significant areas of habitat, wildlife connectivity, and buffering for wildlands. Near urban areas, ranches can furnish important biodiversity protection and supply open spaces. While truly sustainable grazing practices address all three components of sustainability—ecology, economics, and community—this paper focuses on those elements that most directly influence biodiversity.

Ranch lands, predominately in the arid west, can take years to recuperate from improper grazing, and in some cases will never recover. When more livestock are present than the land can support, soil erosion, watershed destruction, forage grass and forb loss, and severe impacts to fish and wildlife can occur. Livestock grazing in the United States is responsible for the listing of 33% of the federal endangered plant species and 14% of the endangered animal species.

Innovative farmers have started to optimize Nature's services, such as nutrient assimilation, water supply, and erosion control by using sustainable management practices. While the prices of meat and wool products have gone down over the last fifty years, production costs have not. Farmers can lower their production costs by using the resources of their land more efficiently. For example, by restoring some of the drought-tolerant native grasses and managing pastures better, livestock can graze longer and be finished on grain for a shorter period of time, or perhaps be entirely grass-finished (-fed), thus lowering feed costs.

Sustainable Grazing Management

Management-intensive grazing implements a high-density, short-duration managed strategy, as opposed to the standard continuous grazing, where the animals have access to the whole ranch. The herd usually feeds on a particular pasture for several days, intensely grazing the vegetation, then is moved off and does not return to the same location until the forage has had enough time to rest and recover. In a sense, this strategy mimics the activity of wild migratory grazers that evolved in the grasslands and prairies.

Management-intensive grazing requires an investment in fencing and watering systems, which traditional continuous grazing does not. The rancher must also invest more time in managing the grazing herd. However, returns on the investment are numerous. Ranchers report more pounds of meat production



*According to Dana Jackson in *The Farm as Natural Habitat*, “People who worry about species extinction in the Amazon due to deforestation and the loss of biodiversity in the ocean due to global warming may be unaware of how food production closer to home disrupts the natural world. They may know about the decline of songbird habitat in Latin America but not know about the decline of habitat for those same birds [such as the above bobolink] when they migrate back to the Midwest.”*



Bison require less water and can survive harsher winters than cattle but demand heavier fencing and the development of non-traditional markets.

per acre because of the higher stocking rate and higher quality and quantity of diverse forage. The animals stay healthier, causing veterinarian costs to go down. The landscape benefits from improved nutrient cycling, fewer undesirable weed species, better water absorption, and increased biological diversity. If more cattle were grass-finished for longer periods of time, fewer acres of corn and soybeans would be needed for feed. Returning this cropland to grassland for cattle grazing would encourage the recovery of riparian areas that have been intensely farmed to the edge, would improve water quality, and would help to re-establish declining grassland bird species.

Over time, native grass species and many legumes spontaneously appear in pastures after the adoption of management intensive grazing. Consequently, pastures should be monitored for recovery before the implementation of reseeded and restoration procedures. For weedy pastures, prescribed burning and grazing certain livestock, such as goats and sheep, can reduce and often eliminate non-native invasive species. With prescribed burning, ranchers stop grazing activity in the late winter to allow the weed fuel load to build, then burn fields in the late spring or early summer before exotic plants have set seed but after the end of grassland birds’ breeding season. Extreme care and experienced help ensures control of burns.

While the majority of birds should be encouraged on grazing lands, those that prey on or parasitize other birds’ nests should be discouraged. Crows and ravens, which prey on nestlings, can be dispelled from the farm by limiting access to grain feeding and storage areas. Cowbirds, which severely reduce the nesting success of many riparian birds by laying eggs in their nests, can be discouraged by restoring the understory riparian grasses and shrubs cowbirds generally avoid.

Cattle, bison, and lambs typically spend most of their lives on pasture, then go to feedlots to be quickly fattened up. There they eat large quantities of grain they have not evolved to assimilate, which requires them to be treated with antibiotics to keep them “healthy” while in confinement. Meat from pasture-raised animals is very similar to meat from wild game and both have the kinds and amounts of fats that promote optimal health.

Organically managed livestock eat feed free of synthetic herbicides, pesticides, and fertilizers; do not receive hormones or drugs in the absence of illness; and are not kept in overcrowded conditions that undermine health. Ruminants must have access to organic pasture, and all livestock access to the outdoors, but specific requirements are still being worked out in the new federal organic standards. Overall organic sales have steadily increased 20% annually in the last decade. Consumers pay more for organic and grass-finished foods. They appreciate that organic production ensures the food does not contain pesticide residues, synthetic hormones, and genetically modified organisms. Consumers also value that grass-finished meat is low in total fat and “bad” fat (including saturated fat), high in “good” fats (omega-3 fatty acids and conjugated linoleic acid), and high in beta-carotene and vitamin E.

Riparian Areas

Riparian areas, narrow bands of vegetation along the banks of rivers and streams and around springs, bogs, lakes, and ponds, occur on only about 1% of the federally owned range land, yet they have ecological importance far beyond their relatively small area. Riparian zones provide den sites for four-footed creatures, roosting and nesting places for birds, shade for fish populations, and food and water for all types of wildlife. In fact, rivers and streams serve as corridors for wide-ranging species, linking habitat and wildlife populations throughout the watershed and lessening the impact of genetic bottlenecks (inbreeding) of species.

Livestock tend to gather in riparian areas, eating and trampling most of the vegetation. When banks become crushed and denuded, erosion often follows. Equally damaging is the reduction of the bank's water-holding capacity, which then lowers surrounding water tables and can change perennial flowing streams to intermittent waterways that become parched in the dry season. Streams in this state cannot support fish and wildlife species, and are less likely to contain flood waters. When fenced off from livestock, or when livestock are carefully monitored, riparian trees and shrubs can flourish and serve as a filtering system for sediments and nutrients that would otherwise pollute the river. Border vegetation acts like a sponge to hold water in stream banks, which increases the water table and stabilizes the stream flow, including dissipating the energy of flood waters.

Predators

In 1999, the USDA Wildlife Services division (formerly called Animal Damage Control) killed roughly 100,000 coyotes, foxes, bobcats, badgers, bears, and mountain lions in the name of agriculture. While sheep losses from predation have been estimated to be about 5%, coyotes and dogs are thought to be responsible for three-quarters of the destruction in the U. S. Since cattle losses due to predation average only about 2%, predation is often more of a problem for sheep ranchers.

Despite an aggressive program of killing coyotes for decades, more coyotes live in more places today than ever before. According to Bob Crabtree, a Yellowstone Ecosystem Studies biologist, coyote populations can withstand up to 70% removal annually and still maintain the same number of individuals every year. When all the coyotes in a territory are killed, coyotes from nearby areas will move in to occupy the vacant territory and intensify pup rearing.

Even if it were possible to remove all coyotes, doing so would allow the rodent population to explode, causing more damage in the form of lost grain and forage and dug up fields than the current cost of coyote damage. Predator friendly ranching does not try to eliminate the predators. Instead domestic stock is protected with animals such as llamas, donkeys, and dogs. Human shepherds also make good deterrents, as does herding cattle with smaller animals and using electric fencing. Integrating multiple protection strategies can significantly add to the overall success of safeguarding livestock.



Management-intensive grazing can result in a higher quality and quantity of diverse forage and more pounds of meat production per acre.



“Predators enrich the whole process of ranching and help keep the ecosystem functioning. Coyotes living in a healthy landscape typically prefer natural prey species to a mouthful of wool, unless they have learned that killing sheep is profitable,” states Becky Weed, Predator Friendly and certified organic lamb and wool producer.

Take Care of the Land and It Will Take Care of You: Yolo Land & Cattle Co.



Judy Boshoven (Audubon) and Scott Stone walk the ranch to determine restoration sites.



Native perennial bunchgrass planting.

In the oak woodland foothills of the Willow Slough Watershed of northern California, Scott Stone and his family run a unique cattle operation that combines natural grass-finished beef production with tourism and wildlife habitat restoration. Working in partnership with many conservation organizations, the Stones have overseen planting of native shrubs, grasses, and trees around their ponds and oak woodlands, which has created valuable wildlife habitat. They also use rotational grazing and prescribed burning to control weeds and brush, and solar pumps convey water for cattle away from ponds, which also helps to increase cattle growth.

With the California Rangeland Trust, the Stones are putting together a conservation easement to guarantee the ranch will never be subdivided, will remain in ranch land, and the restoration already practiced will be protected. Scott says it is a tricky balance between earning a living and conserving the land. Part of the answer is selling grass-finished, hormone- and antibiotic-free beef to informed consumers. To complete the picture and educate the public about beef and conservation, the Stones encourage visitors. Conservation does not come cheaply. Scott explains, “Conservation has taken a lot of time and money away from other projects, but we’re trying to leave this place better than we found it, and over the long run, stewardship increases the value of the ranch and makes it a better place for cattle, wildlife, and people.”

For more information see Yolo Land & Cattle, <http://yololandcattle.com>, or contact Audubon-California’s Vance Russell at: russell@yolo.com. (Edited from original article by K. Laddish, *Conservation Qtrly* 7: 1; <http://www.yolo.rcd.org>.)

Predator Friendly Thirteen Mile Lamb & Wool Co.



Up against the Bridger Mountains in Montana, sheep and cattle ranchers Becky Weed and Dave Tyler raise tender and tasty meat. They attribute the meat’s exceptional quality to the grass-finishing technique that allows the animals to live on pasture their entire lives. By adopting organic practices, such as encouraging nitrogen-fixing clover in the pastures, periodically rotating grazing with a hay crop, and carefully culling and selecting replacement animals, Weed and Tyler have no need for chemical fertilizers, herbicides, or parasitides on the farm.

The health of Thirteen Mile Farm’s rangelands are reflected not only in its livestock and forage, but also in the existing wildlife populations of predators—coyotes, bears, mountain lions, eagles, and their natural prey: mice, rabbits, gophers, and deer. Understanding the predator/prey relationships and the protective instincts animals possess has made predator-friendly ranching possible. Since Weed and Tyler ensured that their guard llama bonded to the sheep at an early age, it has furnished protection from almost every coyote, the predator that causes shepherds the most problems. Guard animals are not a cure-all, but by using common sense practices, Tyler and Weed coexist and thrive with the biological diversity of their ranch.

For information on Thirteen Mile Lamb & Wool Co, visit www.lambandwool.com or write to TML&W, 13000 Springhill Rd., Belgrade, MT 59714.

Grazing Practices that Support Biodiversity

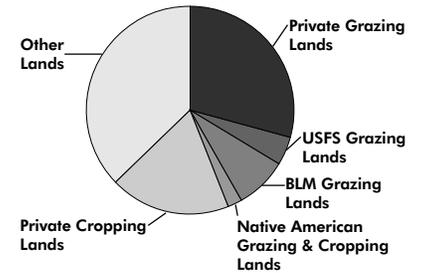
The practices described below work well for many grasslands but will not serve as a blueprint for all. The complexities of landscape conditions, climatic factors, and animal breeds must also be taken into consideration.

- ❖ **Careful Monitoring** of individual pastures can help protect water availability, control erosion and invasive species, and support abundant wildlife, thereby contributing to the health of the whole watershed.
- ❖ **Managing the Landscape** with all the needs of wildlife in mind can especially help threatened and endangered species.
- ❖ **Management-Intensive Grazing** concentrates numbers of animals (intensity), reduces length of time the herd feeds in one location (frequency), and varies the time of year animals return to the same ground (timing).
- ❖ **Fencing Paddocks** located according to the topography and water sources on the ranch makes management-intensive grazing practical.
- ❖ **Grass-Finishing Animals** allows them to graze as long as possible in pastures rather than confining them in feedlots to fatten up before harvest.
- ❖ **Organically Managing Animals** requires access to the outdoors, pastures and feed grown without synthetic chemicals or genetically engineered seed, and no use of hormones or drugs in the absence of illness.
- ❖ **Restoring Native Perennial Forage** can boost production and lengthen the growing season.
- ❖ **Allowing Goats and Sheep to Forage** in weedy pastures can help to control difficult invasive plant species without herbicides.
- ❖ **Prescribed Burning** is used in pastures with dense weeds to reduce and sometimes eliminate undesirable species.
- ❖ **Protecting Riparian Areas** from overgrazing, especially where fish spawn and birds nest, can be accomplished with inexpensive high-tensile electric fencing, or by carefully managing livestock to discourage spawning gravel disruption, high browse lines, and severe hedging of riparian shrubs.
- ❖ **Restoring Riparian Habitat** allows the river to function as a wildlife corridor that links habitat in the watershed.
- ❖ **Developing Off-Stream Water Sources** throughout the ranch, by using solar power wells if necessary, can disperse cows more evenly and reduce the impact on riparian areas that otherwise may become overgrazed.
- ❖ **Placing Mineral Blocks** at key locations can additionally disperse animals.

The web of relationships that we are stewarding is an integral whole, depending for its health upon all its members. Damaging the health of any member of the “whole” community, therefore, damages the rest.

—Joe and Julie Morris, T. O. Cattle Company,
San Juan Bautista, California

Percent of Grazing Lands in the Continental U. S.



Grazing lands amount to 44 % of all the land in the continental United States.



Riparian vegetation stabilizes banks, filters runoff, keeps the water cool, and serves as wildlife movement corridors.

Predator Friendly Practices

- ❖ **Acting as Predator Friendly Producers**, ranchers make a commitment to not allow any lethal control (shooting, trapping, poisoning) to protect their livestock from native predators.
- ❖ **Using Guard Animals**, such as llamas, donkeys, or dogs, can help to protect livestock.
- ❖ **Making Frequent and Unpredictable Appearances** in pastures and employing frightening devices can discourage predators.
- ❖ **Herdng Cattle** with sheep, goats, and calves can furnish the smaller animals protection.
- ❖ **Minimizing Predator Contact** by scheduling pastures for use when predation pressures are low, or only grazing large animals in pastures with known risks of predation, can eliminate some loss.
- ❖ **Fencing Out Predators** using traditional means, or with electricity, can also minimize loss; but leave corridors for wildlife to pass through. A USDA/APHIS report cautions that federal or state regulations may prohibit construction of fences in some areas.
- ❖ **Protecting Lambs and Other Vulnerable Animals** by birthing in sheds, in small secure fenced lots, or in protected pastures can increase yield. Monitor parasite levels, which can increase in confined areas.
- ❖ **Determining Whether Livestock Death** was caused by a predator, and recording which pastures had missing or dead animals helps in planning future strategies.
- ❖ **Carefully Timing Calving and Lambing** can avoid predator problems; the optimal season will vary depending on the local predator species, natural prey population, and particular geography.

Community Strategies that Support Biodiversity

- ❖ **Purchasing Food and Fiber** that is grass finished, Predator Friendly, or organically grown—either directly from the producer or by requesting such goods from your local grocery store—helps ensure farm viability (see WFA Briefing Paper titled “Local Control in the Global Arena” for more information).
- ❖ **By Spreading the Word** to your co-workers, neighbors, and community groups about supporting biodiversity farming with food dollars, you can send a message to rural America on the significant value of stewardship practices.
- ❖ **Supporting Land Trusts**, which work with farmers in creating conservation easements in exchange for tax incentives or other benefits, can help to preserve working farms, open space, and wildlife habitat. More than 1,200 land trusts in the United States have protected about 2,600,000 acres, almost half of which are farm and ranch lands.
- ❖ **Visiting Ranches** that offer overnight farm stays or wildlife viewing can bring in additional income to their bottom line and reconfirm the value of their natural resources.

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