2002 Third Place Research Paper

Solution to the Grazing vs. Ecosystem Conservation Conflict

One of the major issues confronting western America is that of environmental conservation and protection versus agricultural essentials and needs. This issue includes the environmentalists' fight against herbicides and pesticides, reservoirs for irrigation water, and livestock grazing on public land. The controversy that this essay confronts will be that of the desire to use public land for livestock grazing versus the importance of preserving the rangeland ecosystem. Importance is found on each side of this controversy by various groups of people. What will there be for tomorrow's generation if the ecosystems of public lands are not preserved? Where will the meat come from for today's generation if the nation's cattle ranches do not have enough food to raise their livestock? I believe that the answer to both these questions lies in the solution of both economical and ecological sustainability. Although overgrazing in past history has greatly damaged rangeland ecosystems of today, sustained economy and ecology can coexist in harmony, not through environmentalist's visions of cattleless rangelands or through cattlemen's aspirations of unchecked rangeland grazing, but rather through managed grazing techniques and practices.

This controversy has emerged mainly because of overgrazing in the nineteenth and early twentieth centuries (CAST "Livestock"). Due to their lack of knowledge and experience, ranchers, the public, and the government all supported year-round grazing of rangelands. It helped to boost the economy by allowing ranchers to produce more cattle. However, all three of these groups soon found that the boost in the economy resulting from year-round heavy grazing was to be short-lived and did not come without a price. Ranchers lost vast amounts of rangelands because of the permanent depletion of vegetation caused by the overgrazing. Ecosystems were damaged by erosion, once again due to the lack of vegetation resulting from overgrazing. These damages turned the general public against grazing on rangelands, mainly out of fear that all of the public lands could turn out like this. In order to prevent this from happening again, rangeland management plans were introduced at the first of the twentieth century; however, these weren't well developed until the 1930's, and so overgrazing continued up to this time. By then, the knowledge and research was sufficient that the government was educated enough to instill numerous conservation strategies, including managed grazing plans. These plans, enforced by the government, stopped year-round grazing, limited the numbers of cattle permitted on the rangelands, and consequently, halted overgrazing. However, by that time many rangeland ecosystems were past the point of no return (Vavra 2341).

Today many conservationists believe that a resting period, a time where all cattle are removed from damaged areas, will allow them to return to their optimum state. However, experience and research shows that a decrease or halt of the grazing in a region alone will not bring back what was destroyed in the nineteenth century, and this can be seen by the miniscule amount of improvement seen in areas that have had no grazing since 1930. (CAST "Grazing" 1). In fact, according to research conducted by Dan Daggett, a current authority who claims to spearhead the environmentalist movement, on ten Western ranches that have successfully regained damaged rangeland ecosystems, an increase in grazing intensity helps to heal the damaged ecosystems as long as the intensity is not already extreme and as long as a well-researched and proven managing plan is followed (9). He states that many of those damaged ecosystems "that have been left for nature to heal are getting worse instead of better." This happens because the vegetation that has been taken out is replaced by aggressive, unwanted vegetation, and these continue to partially take over the ecosystem, decreasing biodiversity and native plant
populations. Grazing, on the other hands, can help keep these exotic plant populations to a low while native plants are allowed to grow back(1).

I have lived my whole-life on a cattle farm where we have raised 50 cows on average. Every summer we put them on permit-regulated rangeland in the Uintah National Forest. This range is managed by a permit limit and by regulated rotation of the cows throughout the time of occupation. I have noticed that the main factor in maintaining fair range condition is not the number of cows in an area, but the season and amount of time allotted to grazing on the different types of terrain. This is evidence that there are many more strategies that are often more effective than just lowering the number of livestock affecting an ecosystem.

Unfortunately, many of these strategies are ignored by environmentalists, biological conservationalists, and range scientists. Dan Daggett is an open environmentalist who has seen the bias of his people put a damper on cooperation between cattlemen and environmentalists and thus hinder ecological and economical progression. He first acknowledges that "much of the western range is in worse shape than even some of the most alarming assessments would have us believe." He continues by stating that many of the "West's mountains, valleys, prairies, and deserts are denuded and eroding." He continues on in graphic description of how streams have become sewers, wildlife has become a government dependent, and, worst of all, many of "these magnificent and irreplaceable lands have deteriorated to the point where they are no longer able to rebound" (1). However, Daggett later points out a common misconception of many environmentalists: "If cows are bad," if they have already done so much irreparable damage to the environment, then "it stands to reason that less cows must be better, … and no cows must be best." (9). He points out that environmentalists think that because cows caused all this devastation years ago, then taking away that which damaged the ecosystem should prevent further devastation and speed up the healing process. However, as previously pointed out, this is a misconception. If the cows are used to help undo that which they did, then they should be left to on to help restore those damaged rangelands. A managed range plan can do just this: use grazing to help restore vegetation and biodiversity in a damaged ecosystem, but that will be explained and elaborated later on in the essay. Daggett tells another experience to help us see the bias in environmentalists' minds:

…I asked a leader of a regional environmental group what I should be looking for in deciding whether or not a rancher was a good steward. She responded without hesitation: Do they support ecosystem management? What about exotic plants: are they trying to get rid of them in favor of native plants? Have they cut livestock numbers? …How do they stand on wolf reintroduction? …She kept on rattling off a long list of issues… But she never said even once what the land should look like.

Here he points out that the environmentalists have stopped using issues as "the means," and they "have come to be the end. She-we-are prepared to decide whether or not a person is a good manager without even looking at their land, and we're willing to decide whether or not the land is healthy without ever seeing it" (8). This, coming from the mouth of someone who knows environmentalists well, shows the bias of many of his kind and how they are too worried about if a rancher and his/her subsequent plan are following the right guidelines and regulations rather than if they are accomplish the objectives. This hinders the sustainability of both economy and ecology because it leads to unproductive negotiations because some environmentalists will not compromise the obedience of their issues for a desired result, thus resulting in the in ability for an area to create a managed grazing plan and a sustainable economy and ecology.

Many environmentalists are too worried about their own cause and most do not consider any kind of negotiation or compromise that may result in the neglect of one of their issues even though it is overall more beneficial to the ecosystem, economy, and society as a whole. This is shown again by the bias of another environmentalist who criticizes ranchers by accusing them of being "private investors who have a right to get themselves into a position where short-run expenditures of the range resource is the answer to their long run wealth creating venture" (qtd. in Donahue 284). However, this is both a false analogy and stereotypical fallacy. In this passage, the environmentalist quoted by Donahue makes a poor analogy relating ranchers to selfish investors. His logic is even more skewed as he crudely characterizes all cattlemen under a single label, accusing all ranchers of
being selfish investors while only a few may fall under that category. Daggett proves that environmentalist wrong with his research done on the ten ranches that have worked and successfully achieved a range management plan that conserves the range resources as well as profits their ranch. There are also these three reasons given by Barlett why ranchers should not be compared to selfish investors who sacrifice range resources for their long-run accumulation of wealth: First, monetary returns to ranchers are low by any standard measure of investment performance. Depending on the size of the ranch, return rates from livestock production have been reported to range from 3% as a high, 2% as a maximum average, and a minimum in the below zero range, a negative return. Second, land values are enormous compared to the returns brought in by livestock; western ranch land is overpriced relative to what the cows will buy and pay for, making expansion expensive and tough and thus decreasing the appeal to over use and desecrate rangeland for a short term profit. And the third indicator that profit is not the primary motive in western cattle ranches is that the ranchers themselves list quality-of-life as the number one reason for ranching (Bartlett et al. 427). Studies show that the desirable quality-of-life attributes associated with rural living and ranch life are far more important than profit maximization (428). On our own family farm, many years the returns from our cattle sales are negative or close to zero compared to how much we spend on the cattle. However, the money is not what motivated my dad to start our family farm, nor is it what motivates the kids to work on it. That which profits our family the most is the experiences we receive from working on the farm. It teaches us kids how to work hard and be responsible, how to think for ourselves and become leaders, and it allows us to spend more time together as a family as we work together to complete difficult farm projects; these are what motivate us to farm, not the profit that is comparatively small when the amount of labor put in is considered. Another example of bias is that often times, environmentalists call for a change in rangeland management by decreasing intensity of livestock grazing, but never once offer the possibility of lowering the priority of one of the other roles of public land, such as it use for recreation or timber, and its acting as a reservation for wildlife. They show no desire or allow even the slightest possibility for negotiation and cooperation (CAST "Review" 3). Martin Vavra also explains how animal scientists have the preconceived "notion that livestock grazing is inherently an evil thing." He points out that instead of saying "How can livestock grazing be reduced to conserve biodiversity and ecosystem integrity?" they should ask "How can livestock grazing be managed to have the fewest impacts on biodiversity and create sustainable economy and ecology?" This latter question is seldom ever even considered in environmental discussions concerning this issue. Vavra calls for "cooperation between agricultural and conservation biologists to ensure continued production of high quality food and fiber for all the earth's people and to protect biological diversity" (2342).

Another enormous point that is not being considered by most conservationists and environmentalists is the impact that removing cattle from rangelands would have on the local, state, and federal economies. According to the Council for Agricultural Science and Technology, in most of the eleven western states where agriculture is a major industry, "beef cattle are the highest or second highest income producer in agriculture" (CAST "Grazing" 2). For much of the year, ranchers rely on the feed available in public lands to sustain their herds, and if they were disallowed to feed on these lands, they would also be required to downsize their herd considerably. This would consequently downsize their income. Many of the ranchers would then no longer be able to pay the needed expenses to continue ranch operation, and their businesses would fail. Consequently, there would be less tax income to all levels of government, communities would be severely affected and economies would be depressed (CAST "Livestock" 4). Meat and wool prices would be inflated immensely in order to compensate the new expense of buying the food needed to replace that food which was lost through the elimination of grazing on rangelands; natural resources that should be utilized would be wasted; and the social and economic structures of communities and states would enter into a rapid decline (CAST "Review" 1-2).

Another, although somewhat neglected, part of this controversy is what the increase of grazing fees would do to the economy. Many environmentalists also support increasing fees for grazing on public lands in recompense for what is taken from the land through grazing. The increase of these fees would have the same affect on the economy as would the elimination of grazing from public lands. This is because as federal grazing fees move towards the equivalence of private lease rates, grazing on public lands becomes more and more economically unfeasible for the rancher, thus they are required to diminish their herd size because they cannot afford to pay
for grazing on the land that supports their cattle. Thus an increase in grazing fees will have the same effect on local societies and economies as would the deletion of grazing on public lands (CAST "Grazing" 7-8). Because I have lived on a farm and ranch almost my whole life, this issue touches home for me. I know how much the continuation of our ranch depends on the feed that public lands provide our cattle and livestock. Without that feed, we would be required to convert much of the land used to cultivate grain into pasture and grazing land. Also the crops we harvest to feed the cattle in the winter would be depleted much quicker, and the herd size would have to be reduced. Every single one of these aspects would result in the loss of income, and thus the communities that we, as well as the other cattlemen that graze public lands, live in would enter a decline as the population has less money to buy from the stores and restaurants, and the local government receives less because of less income and less commerce.

Now we come to the major controversy of this issue: Is grazing bad? If it isn't, is no grazing better? If it is, isn't there a median somewhere that might work so that we have both a sustainable economy and ecology? In a quantitative research project, Allison Jones found that in fifteen out of sixteen ecological characteristics concerning biodiversity, vegetation, and numerous other things, ungrazed regions showed better growth and increase than regions that had been grazed by livestock (158). However, Jones admits that in the grazed areas evaluated, management plans were not detected and so were not considered (159). Daggett, on the other hand, found that managed moderate grazing promotes productivity in an ecosystem more than no grazing at all (10). Sanders suggests that "range conditions will normally not respond to change in grazing pressure or even to no grazing" (412).

These two statements can be supported by the situation of cheatgrass. Cheatgrass is an annual grass that is unwanted by farmers but is one of the first species that cattle go for when let out to graze. However, when consumption of cheatgrass occurs, then the wanted perennial grasses are tromped down and damaged. There is a solution, however. Cheatgrass and the native perennial grasses do not occur at the same time, although their existences do overlap. If the time and season of the grazing were to be managed, then perennial grasses would be favored and would come back stronger than before. However, if grazing is too intense on the cheatgrass, then the soil is compressed and perennial growth is hindered. If grazing is not intense enough, then cheatgrass will continue to grow stronger than the perennials and will always be dominant in the ecosystem. Thus, if the rangeland is managed wisely, livestock can be rotated to different spots according to the season in order to help in cheatgrass reduction (Vallentine 204).

Wildfires is another area where moderate grazing has proven to be more beneficial than both no grazing and overgrazing. According to Vallentine, annuals like cheatgrass makes an excellent dry fuel source for fire. Hence, if there are less annuals then there are less fires, and if there is more annuals such as cheatgrass, more fires will occur. While, fires are not something that we want to occur frequently, they are wanted occasionally to clear out the intruding shrubs and brush (Vallentine 202). Because we don't want fires too frequently nor too infrequently, we desire something in between where there is still fuel to burn, but not so much fuel that fires start too frequently. This describes the result of managed grazing in which excess fuel is eaten off but fuel still exists at certain locations during certain seasons.

Managed grazing also results in more biodiversity than would exist with overgrazing and with no grazing (CAST "Grazing" 5). This is explained because when rangelands go ungrazed, then one type of aggressive grass, weed, or shrub excels and grows fast. It then robs all the sunlight from other species, and that one species thrives while the others do not. On the other hand, overgrazing prevents the entrance of other species into the ecosystem because the cattle digest them before they get a chance to thrive. Thus it can be seen that biodiversity is held to a minimum at both the extreme of overgrazing and the extreme of absence of grazing. However, moderate grazing allows for equal growth of species without one more aggressive species choking out the rest. Therefore it is shown that grazing is not bad concerning biodiversity and wildfires, where it can be very good at moderated levels. And, pertaining to unwanted exotic species, grazing is good and, if managed correctly, can promote wanted native species.
Managed grazing has been referred to numerous times in this essay as the solution to achieving sustainable economic and ecological goals. Managed grazing refers to a technique that is implemented after research is conducted and the plan is proven to be effective. This technique is used to determine the best way to utilize grazing to increase vegetation and biodiversity and maintain and conserve the economy. Tipton gives an example of how this can be done. On his farm, he rotates his cattle according to the time of year and distributes them throughout the ranch according to the presence or absence of water (414). On the range we run our cows, the cattle's positions on the range are controlled by annual fences. The cattle stay in the designated area until, according to the management plan, it is time to move them. All the work to move the cattle between areas and maintain the fences is done by the cattlemen themselves, thus keeping expenses to a minimum. These are examples of how management plans seem to work well, without costing the rancher more money and without doing any detectable damage to the ecosystem.

Whether or not cattle should be permitted to graze public rangelands has been a topic of debate for over a hundred years. Many of these debates were results of the permanent damage that was done on many western rangeland ecosystems due to the presence of too many cattle and the poor regulation that allowed them to overgraze those ecosystems. It has been shown that many environmentalists hold bias towards cattle or possess misconceptions that cows are inherently bad for an ecosystem; both these biases and misconceptions hinder the progress of both the economy and the ecosystems. If cattle were to be removed from these rangelands, biodiversity would not increase as much as many environmentalists expect. Economies would be depressed because of the hit that the local agricultural industry would take due to the sudden loss of food for livestock. Instead, to many environmentalists' confusion, grazing can be used to increase biodiversity even more than the absence of grazing ever could. If grazing is managed correctly under a well researched and proven plan, then ecosystems would greatly benefit. Biodiversity would increase, exotic and less wanted species of vegetation can be controlled while the natural species could be promoted, and wildfires would be more able to be controlled. In these ways, if moderated and managed under a good plan, grazing can be used to achieve sustainable rangeland ecosystems in harmony with an agreeable and sustainable economy.

Works Cited


