

in the stream. Perhaps it was ease of access: the tank was located on level ground and its overflow was piped well away from the tank. Therefore, the ground was dry and firm at the tank as compared to the steep, rough, and muddy access at the streamside.

We also wondered if consumption of water might be higher at the tank. If so, it would follow that livestock performance, in terms of maintaining weight during a time of year when animals frequently lose weight, might be improved since high volumes of water intake are necessary for animals to efficiently process dry feed. This speculation is food for thought. Perhaps a secondary benefit with economic rationality accompanies the ecological benefits demonstrated by the alternative water source.

Conclusions

Under winter feeding conditions, the amount of time cattle spent drinking or loafing in the area of the stream

was dramatically reduced by the presence of a watering tank. The amount of time that the animals spent in the stream was reduced by more than 90 percent.

Even when the feed source was placed equal distance between the water tank and the stream, the water tank was effective in reducing the amount of time the cattle spent in the stream.

In terms of water quality, the relationship between time spent in the stream and fecal pollution is evident. Since it was possible under these cold and snowy conditions to eliminate 90 percent of the animals' wintertime use of the stream through the use of a watering tank, economic and environmental implications suggest that this may be a viable alternative to the total exclusion of livestock along sensitive stream systems.

(References for livestock relationships to bacterial contamination of streams are available upon request from the authors.)

Building Consensus for Rangeland Uses

William C. Krueger

The people of the "Wild West" are largely urbanized. It is common for people living in cities to have no close relatives that live or work on ranches or farms. The family bonds that historically tied rural and urban people together are gone and with them a major communication link. Without the intense common understanding that characterizes close relationships of a family, fundamental beliefs and ways of evaluating natural resource issues among urban and rural groups have become increasingly different. Each group has lost information in this evolution of paradigms. Each group analyzes different, sometimes selected, information in a different logical framework and naturally, then, defines the truth differently. This has prevented a common understanding of many issues. One result has been generation of intense controversy concerning protection and use of natural resources.

Society has made little progress in bringing the visions of environmentalists and ranchers together to find consensus on resource issues of the western states. This is not surprising when we consider the way we generally do business in the United States. Our laws and policies are based on allocation of scarce resources. Society must be sure everyone gets a fair share of the resources, espe-

cially public resources, so we pass laws and make policy to allocate what we have according to certain priorities. A major assumption underpinning our laws and policies is that there is not enough for everyone and so each will get a share that is less than they want. Inevitably, allocation of any scarce resource leads to conflict and often to mistrust. This inevitably leads to fear. There is a fear that the representatives of other interests will be more skilled at negotiating their position and that they will get the best deal in allocation of the resources in the end. This leads to fear of losing the profitability of watershed-based businesses, fear of losing the sustainability of a resource, fear of losing the aesthetic values of a resource, and a multitude of other fears. One can see this by observing the relationships of environmental groups opposed to public land grazing and public land graziers.

Leritz (1987) describes a procedure for successful negotiating. He indicated negotiating from a basis of scarcity involves three assumptions: There is not enough, people are greedy and the best approach is better strategizing. Negotiating from a basis of abundance involves a different set of assumptions: There is more than enough, people are basically needy not greedy and understanding is the best strategy. The acceptance of one set of assumptions or the other has a major impact on relationships in negotiations. The former yields negotiations based on

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fear. The latter yields negotiations based on understanding.

If society can change the negotiation for resources from allocation of scarcity to sharing in abundance, we can find a way to move from limiting peoples' wants through allocation to meeting peoples' needs through abundance of resources. The potential is there. The professional judgement of many range managers is that about two-thirds of the rangelands in the United States are meeting less than half of their perceived potential (Society for Range Management, 1989). It is obvious that the potential productivity of the western range is many-fold greater than its current level. This potential for abundance can allow ranchers and environmentalists to find common ground and to reach consensus in improving western watersheds.

It is possible to achieve this abundance through progressive range management that will meet the needs for all rangeland values. It may well require major changes in current practices, but if a sound ecological and economical foundation is maintained, most problems can be resolved.

Abundance Theory in Action

Oregon Watershed Improvement Coalition (OWIC)

When OWIC was established in 1986, the prevailing view of those who would become members was that of scarcity of resources. During the first meeting, everyone knew resources were scarce and feared the future. At the same time, the developers of OWIC realized that for the most part the resources of concern were really abundant—if they were managed so they would develop to their potential.

Formation

The first step in setting up the initial meeting of the group involved determination of criteria for participation and selection of participants. This was done by the Riparian Task Force appointed by the PNW Section, Society for Range Management. The criteria for participants were that they were leaders on the issues in Oregon and they were willing to discuss riparian issues with an open mind. Achieving balance among the interests was attempted. This was to create a safe environment and thus to maximize the opportunity for each participant to express concerns and ideas.

It was decided by the Riparian Task Force to confine selection within Oregon's mainstream interest groups. These were environmental groups with national focus, environmental groups with local focus and livestock producers. Leaders of selected organizations were telephoned and the purpose of the program was explained. Each group was asked to participate in one meeting to see if there was common ground and to help in developing some communication about riparian issues. Every group contacted agreed to participate. Initially the group consisted of representatives from the Oregon Cattlemen's Association (five), Oregon Trout (two), Oregon Environmental Council (one), Izaak Walton League-Public Lands Restoration Task Force (one), Oregon Natural Resources

Council (one), and Pacific Northwest Section of the Society for Range Management (four). Later, representatives from the Oregon Forest Industries Council (one) and Oregon Small Woodlands Association (one) were added since the upper portion of most Oregon watersheds is forested and forest interests are of significant importance in dealing with an entire watershed. Recently, the Oregon Rivers Council has joined, expanding the environmental perspective. The Oregon Natural Resources Council has withdrawn.

During the first meeting the participants began to understand the sincerity of the interests of all parties. The fears and needs of each interest group were recognized. It was decided there was probably common ground and the participants agreed to a second meeting.

At the second meeting, the structure for future meetings was determined. We did not all perceive the same things when talking about issues, so we were careful to keep the group oriented to the field. In doing this OWIC could discuss the issues from a common base of observation. OWIC agreed to keep the focus of the group on a constructive basis. That is, OWIC focuses on the results of good management and how to improve current rangeland conditions. We do not seek problems but rather seek solutions to problems. OWIC usually meets for two days. The first day is spent in the field to build understanding among OWIC on some issue or idea and to provide a basis for some future discussion. The second day is spent discussing ideas generated during the previous tours and conducting the business of the OWIC. This Coalition has been actively working for five years with an average of five meetings each year.

Principles of Operation

Individuals with an interest in developing natural resource-based programs based on building consensus often ask, "What makes OWIC work?" There are several principles of operation that we have agreed to or that we have accepted passively through evolution of the group.

1. OWIC shares a common desire to achieve the potential of Oregon's watersheds. Products are of secondary importance. We know that if we achieve the potential of the watershed the products will follow.
2. OWIC has agreed to seek a common understanding and we share some common goals.
3. OWIC is a private organization. Those members of OWIC that work for a government agency represent the profession of Range Management on the Coalition. This is important to enhance the outreach programs of OWIC in dealing with private lands and private interests on public lands. It also permits each member to represent the interest of the resources, independent of any governmental policy.
4. OWIC recognizes that most resource damage of the past and present was not intentional. We, therefore, accept the conditions of today without placing blame on anyone for resource destruction. What is important is to implement action to improve resources where needed.

5. OWIC focuses activities on developing programs or ideas for programs where everyone can meet their needs. This involves approaching rangeland use through a philosophy of abundance and consequently a focus on individual needs, not wants.
6. OWIC operates from consensus. Every member of OWIC must agree on a course of action or we take no action. We do not discuss any issue if the members do not all agree to the discussion. By following this premise, we are able to maintain the actions of OWIC on a positive track. We know we don't agree on all facets of resource use, but we operate where we do agree.
7. We keep the OWIC field-oriented. This helps discussions to focus on real situations rather than abstractions.
8. In dealing with riparian zones and watersheds. OWIC has focused its attention on inexpensive solutions. It is agreed that most of the time improvement in management will bring desired improvement in conditions. Structures are expensive and often are not needed. When structures are constructed without the appropriate land management to sustain the system, they usually fail to do the intended job.
9. OWIC focuses programs on constructive activities that will improve Oregon's watersheds. When Oregon's watersheds are all reaching their ecological potential, we will have been successful.
10. Role playing has allowed each of the participants to better understand the position of different interests. In the field we might ask a cattleman to evaluate a situation we are observing from the viewpoint of a specific environmental group. Or we might ask an environmentalist to evaluate from the view of a timber manager. By this approach we have forced ourselves to try to really understand the other person's point of view.

In the final analysis, solutions to Oregon's watershed problems will be found by application of sound ecological knowledge. Implementation of an ecologically sound program will only be possible if it is practical and, therefore, economical. There is no magic and there is no quick fix. We will only improve the land through hard work.

Objectives

The OWIC has agreed on four basic objectives:

1. Provide a mechanism for landowners, land managers and the public to determine achievable objectives for watershed management irrespective of ownership.
2. Promote recognition that watersheds vary in potential and the quality of riparian zones is influenced by these differences, so solutions to problems and responses of watershed streams are site specific.
3. Help develop management programs that identify objectives which respond to and are consistent with riparian and upland ecological processes operating in a watershed.
4. Promote a greater understanding of watershed management potentials and riparian processes to private and public interests through an educational program.

Accomplishments of OWIC

The accomplishments of the Oregon Watershed Improvement Coalition have been significant and most satisfying to the membership. During the past five years there has been a real change in attitudes among the members of the OWIC. To some extent, positions of member organizations have also changed. There is trust and respect within the membership. Environmentalists, ranchers, and timber interests share some expressed common goals. Within the Coalition there is honest and true communication. Together we share the confidence that we can help change Oregon for the better.

The members of the Coalition continue to teach other about watershed management from their various perspectives. Together the membership has produced brochures, a common statement of organizations, a slide show, and other information to use in teaching members of the parent organizations as well as the public.

Through the efforts of OWIC and in cooperation with many legislators and interested parties, Oregon passed legislation to form the Governor's Watershed Enhancement Board (GWEB). This interagency organization provides incentive funds to encourage improvement of private and public watersheds in Oregon. In the 1989-91 biennium, the State allocated \$1 million for education and on-the-ground watershed enhancement.

OWIC has developed a good foundation to build upon. We have been through difficult times, difficult problems, and have held together. OWIC has learned that ranchers, environmentalists and timber managers can work together in a constructive way. We have helped neighboring states understand, evaluate and work towards developing similar organizations. California, Washington, Idaho, Utah, Wyoming, and Colorado have all been working toward similar organizations that reflect the special circumstances of their states.

The Future

OWIC is a model forum for building understanding and networking among individuals with diverse needs and beliefs. In Oregon, action oriented consensus groups, such as the Trout Creek Mountains Working Group and Central Oregon Natural Resources Coalition are, in part, logical extensions of the OWIC philosophy.

By approaching natural resources negotiations with a philosophy of abundance and opening communications among rural and urban citizens with common interests in the land, it is possible to come to a common understanding of site-specific land use. By sharing information and working from common information, the possibility to work together to achieve the potential of the range increases. We all need to recognize the truth as perceived by others, to understand their truth and to work together to reach the abundance that is the potential of the West.

When we do this, our plans for the future, based on broad consensus, can indeed meet everyone's needs when these plans are founded on a healthy resource.

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Old World Bluestem Seedlings in Western Oklahoma

Scott D. McCoy, Jeffrey C. Mosley, and David M. Engle

Old World bluestems (*Bothriochloa* spp.) are an assemblage of warm-season perennial bunchgrasses first introduced into the United States in 1917 from Europe and Asia. These grasses are commonly seeded throughout much of the southern Great Plains for stabilizing marginal cropland and for increasing forage production on deteriorated rangelands. Old World bluestem seedlings can produce four times the forage of well-managed native rangeland (Coyne and Bradford 1985). Consequently, Old World bluestems are an ideal choice for seeded pastures used to complement native rangeland in an integrated forage-livestock production system (Sims and Dewald 1982).

For the past 30 years, researchers at the USDA's Southern Plains Range Research Station (SPRRS) at Woodward, Oklahoma have been studying these grasses and developing cultivars suited to the southern Great Plains. To date, the five most commonly seeded Old World bluestem cultivars are Caucasian, Plains, Ganada, WW-Spar, and WW-Iron Master. Two experimental cultivars not yet available commercially, WW-517 and WW-857, also appear useful for the future (Dahl et al. 1988, Masters and Britton 1988).

Caucasian bluestem (*Bothriochloa caucasica*) was introduced into the United States from the Soviet Union (Dalrymple et al. 1984) and was one of the first Old World bluestems to be introduced into the United States. Plains bluestem (*Bothriochloa ischaemum* var. *ischaemum*) was developed at the SPRRS and released in 1982 (Taliaferro and Harlan 1973). It is a blend of 30 morphologically similar Old World bluestem accessions collected from Afghanistan, India, Iraq, Pakistan, Turkey, and the Soviet Union (Dalrymple 1978). One of these 30 original accessions was isolated and released by the SPRRS as WW-Spar (*Bothriochloa ischaemum* var. *ischaemum*) in 1982

(Dewald et al. 1985). WW-Spar is noted for producing vigorous seedlings. Ganada bluestem (*Bothriochloa ischaemum* var. *ischaemum*) originated in Turkey and was introduced into the Great Plains in 1979 (Dewald et al. 1985). Ganada is noted for its cold tolerance. WW-Iron Master (*Bothriochloa ischaemum* var. *ischaemum*), a cultivar tolerant of iron-deficient soils, was released by the SPRRS in 1987 (Dewald et al. 1988).

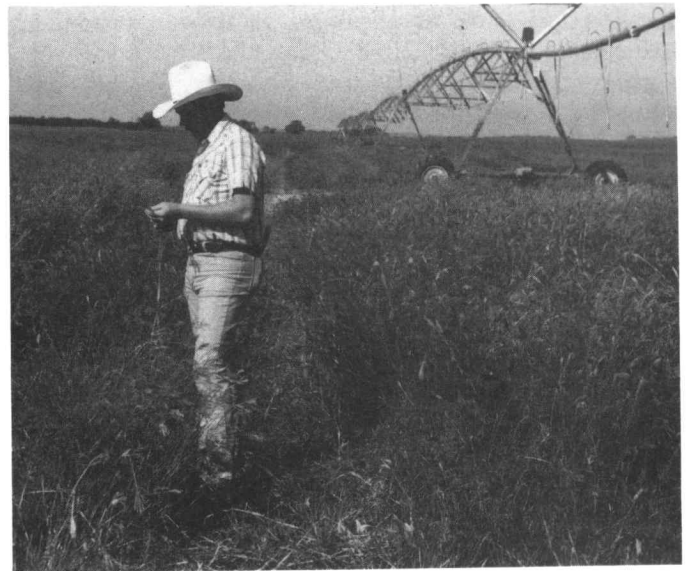


Fig. 1. Non-irrigated Old World bluestem seedlings can yield 5,000 to 8,000 lbs/acre. Production may be improved significantly where irrigation is feasible.

The development and release of these well-adapted cultivars enabled many farmers and ranchers across the southern Great Plains to establish Old World bluestem seedlings. USDA's Conservation Reserve Program (CRP) also helped proliferate Old World bluestem seedlings throughout the region. But given the uncertain future of CRP seedings and the ever-changing crop and livestock markets, many farmers and ranchers are trying to assess the future, long-term role of Old World bluestem seedings

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