

CHAIRS' SUMMARY PAPER: Extensification with Grasslands

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As presented in this thematic discussion, extensification implies a combination of management actions to lower grassland fertilization levels and livestock stocking rates. These actions are undertaken to achieve lower production costs and improved farm profitability and, in some cases, environmental enhancement. Such improvement is critically important to both the farmers of Western Europe and the European Common Market. However, increased farm profitability can only be accomplished, if individual animal productivity is maintained or increased at the same time fertilizer inputs are being reduced. This can be accomplished through reduced stocking rates or selective livestock breeding. Under these conditions extensification requires an increase in land area devoted to grassland.

Using data from a number of Western European sources, Peeters demonstrate that:

- Incorporation of red or white clover into permanent grasslands kept forage production levels at or near those from temporary grassland,
- Milk production per cow remained unchanged when stocking rates were reduced from 2.4 to 1.9 LU/ha and fertilizer levels were dropped from 350 kg/ha to 100 kg/ha,
- Further reductions in fertilizer use on marginal lands could be accomplished without affecting livestock performance if stocking rates were kept below 1.0 B 1.2 LU/ha, and
- The amount of concentrate fed to livestock could be reduced by decreasing stocking rates and leaving fertilizer rates unchanged.

Further support for this approach comes from Scotland where elimination of fertilization coupled with a lowered stocking rate had little effect on sheep production (Marriott and Gordon, paper 530).

Extensification carried out under these guidelines may also provide environmental improvements. If stocking rates are kept low, fertilization levels kept below 100 kg/ha and a sufficient soil seed bank exists, increases in plant biodiversity can be accomplished. As plant species richness increases both bird and invertebrate richness improves. Reduction in fertilizer application can also decrease N and P loading in ground and surface waters. Finally, preservation of farmland, through improved farm income, will retain the complex landscape patterns important to both wildlife conservation and agri-tourism. These benefits, however, may lead to a shift in societal perceptions about European grasslands.

In western North America and central Mexico livestock production has been carried out through a system quite similar to Peeter's description of extensive grassland management. Buckhouse pointed out that extensification of North American and Central Mexico grasslands had been practiced by the First People Nations prior to European settlement. Establishment of an extensive livestock production system by European settlers during the 19th and 20th centuries has meant 70+ million hectares of North American grasslands have never been plowed nor fertilized. Consequently, by the close of the 20th Century American, Canadian, and Mexican societies have begun to view these grasslands as wildlands; valued

for scenic vistas, wildlife habitat and recreation, rather than livestock production areas.

The shift in societal interest in grasslands, from extensive livestock production to wildlife conservation and recreation, has led to widespread conflict over how grasslands are to be used. Resolution of local conflicts over grassland use has repeatedly been accomplished through judicial rulings rather than reliance upon ecological and agronomic principles. Consequently, more and more North American grasslands are being managed by court edict. To avoid both economic and ecological collapse resulting from court ordered management, livestock producers and land managers are turning to conflict resolution tactics. Buckhouse described three different approaches to the resolution of conflicts that would not require court action.

Coordinated Resource Management (CRM) involves

- Participation of all affected parties,
- Inventory of the data appropriate to the perceived problem, and
- A rational group plan.

This approach has been successful because it has provided all individuals with the opportunity to be part of the problem solution. When regional or state problems involve too many people to work effectively as a group; a second method of conflict resolution can be employed.

In Oregon (USA) five representatives of the environmental/conservation movement were asked to join five representatives from the ranching and timber industries to resolve grassland use conflicts (the Oregon Watershed Improvement Coalition). By touring areas of conflict; communicating openly and honestly about the vision their group had for the land and working towards a common goal, this coalition has been instrumental in securing state funding for grassland management demonstration projects. Inspired by the success of the demonstration projects, a federal environmental agency has given funding to the livestock producers to provide further training for graziers.

The Watershed Ecosystem program (WEST) operating under the direction of the Oregon Cattleman's Association provided local training for farmers and ranchers who want to improve both profitability and water quality on their grazing lands. Particular care is taken in this training effort to address all parts of the conflict resolution triad; economic sustainability, ecological sustainability and social acceptability. Experience has shown that failure to address all three "legs" of the triad results in failure. Adherence to these points is equally important to success in the other two conflict resolution methods (CRM and OWIC).

Questions and comments from the attendees centered on the salient points of both papers. Wilkins suggested that conflict resolution would achieve greater success if participants clearly identified management objectives and agreed how those objectives were to be achieved. Several speakers questions Dr. Peeters about the utility of

using extensification to achieve wildlife and native plant conservation objectives. In many situations reduction in inputs will lead to only slow increases in biodiversity. It was suggested that targeting of management with different areas specifically for wildlife and others for efficient agricultural production may be more effective than a modest lowering of inputs throughout the complete area. The feasibility of extensive grassland production to conserve large wildlife species in Western Europe is probably quite low because of the limited amount of land available for such practices. Dr. Buckhouse also cautioned the audience not to abandon the technology that supports intensive grassland production. He based this on the need to feed an ever-increasing human population. While the apparent conflict between society's desire for a quality environment and its need for abundant low cost food could be resolved by setting aside land for extensive and intensive production systems, there was considerable concern over how that allocation would be accomplished.

The free market approach may not make the most appropriate land allocation because farmers tend to respond to profit margins without regard to the long term consequences of their actions. An alternative to the free market system would be to create a Federal or Provincial "monetary pool" to provide compensation or environmental payments to individual farmers for protecting water quality and enhancing biodiversity on their land. Without such opportunities we are left with only regulatory authority to protect environmental quality on agricultural lands. However, governmental regulations may ignore the needs and rights of local pastoralists and farmers causing strife and intransigence. In the face of such challenges there was a call for the inclusion of the social sciences into grassland research. The coupling of social research, including economics, with ecological and agronomic research could give rise to a strategy or approach that would allow communities and nations to have viable economies while preserving wildlife, native plants and air and water quality. At the very least, social science research should indicate how it is important to include the local administrators, merchants, farmers and graziers as active partners in the resolution of conflicts.