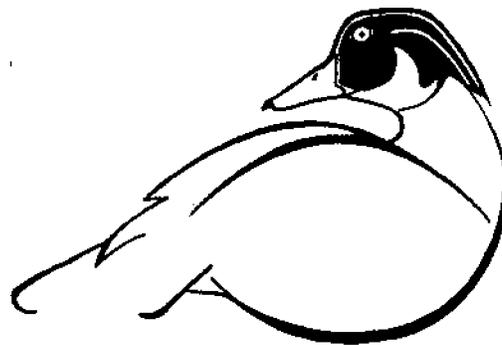

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Farmer participation in riparian buffer zone programs

Peter Maille, April 2001



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Cacapon Institute, Rt.1 Box 326, High View, WV 26808
tel : 304-856-1385, fax 304-856-1386
www.cacaponinstitute.org

Farmer Participation in Riparian Buffer Zone Programs

Abstract

Vegetative strips along rivers, know as riparian buffer zones, can trap a large proportion of bacteria, nutrients, and sediment that would otherwise flow from agricultural fields. We interviewed 8 farmers and 5 extension/conservation professionals to determine the strengths and weaknesses of the government programs that support riparian buffer zone conservation on farms in the Potomac Highlands. We found that while the number of farmers participating in riparian buffer zone programs is increasing, the overall level of participation is low. Reasons cited for this low participation rate include, lack of direct marketing of the programs, concerns about ultimately losing control over part of the farm, and the management burden of maintaining riverside fencing. Given the importance of individualized support when changing farm management practices, we propose for future discussion 1) program strategies that enhance the likelihood that a given farmer will be exposed to examples of buffer zones on farms, and 2) shifting extension staff resources and staff training to increase and improve contacts between the staff and farmers.

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by Peter Maille

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Cacapon Institute, Highview, WV

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Introduction

Non-point source pollution is often cited as the primary source of stream contamination in the US and in rural landscapes agriculture is often the main source of non-point source pollution. One of the tools recommended by government agencies to reduce water quality impacts from agriculture are riparian, or riverside, buffers. Riparian buffers are typically a band of trees, shrubs, herbaceous cover or grasses at least thirty feet wide along a stream bank. Such a band of vegetation can trap sediment and bacteria, and absorb nutrients from both runoff and sub-surface flow.

In the Potomac Headwaters region of West Virginia, the interplay of farming, non-point source pollution, and riparian buffer zones is intensified by topography. The extensive geologic folding that occurred as a result of past tectonic collisions has produced areas of steep slopes prone to surface runoff and long narrow river valleys that contain the best agricultural land. Agriculture in the Potomac Headwaters occurs largely in these narrow valleys and on relatively gentle slopes, resulting in a large ratio of stream bank length to farm acre. Thus, topography has increased 1) the susceptibility of the Region's rivers to runoff and non-point source pollution, and 2) the sensitivity of farmers to the installation and maintenance of riparian buffer zones on their best agricultural lands.

Many government riparian buffer zone (RBZ) programs score farmers based on elements such as the conservation practices they will implement and the environmental sensitivity of their land. Farmers that score above a set threshold are considered for participation in the program. Participating farmers then qualify to receive cash payments to compensate them for taking land out of production, and/or cost-sharing to reduce the expense of installing and maintaining conservation measures. Government guidelines provide for the design of buffer zones and, while research continues, the science behind the buffer zone design appears sound.

Less clear is the farmer's level of acceptance of riparian buffer zones as they are promoted by RBZ programs. Research shows that economics is only one element of a complicated framework farmers use in making land use decisions. Socio-cultural factors such as farming history, personality, stage of life, and perceptions of the farmer also impact land use decisions and these appear largely ignored in the context of the current RBZ programs. This paper reports on the acceptability of RBZ programs to farmers in the Potomac Headwaters, and discusses how we think that participation in RBZ programs could be increased.

Methodology

We gathered information on RBZ programs via interviews with farmers and extension/conservation workers. Because of the complexity of the issue we developed a flexible interview framework using open-ended lead questions.

For extension/conservation practitioners our interview questions were:

How well are riparian buffer zone programs used in your region and why?

Why did farmers take advantage of riparian buffer zone programs?
What rate/range is fixed for compensation for land and expenses and how is that fixed?
Why are riparian buffer zone programs not utilized more?

For farmers the interview questions were:

What riparian buffer zone practices do you currently employ and why?
Are you part of a riparian buffer zone program and if so please describe.
Why are you, or are you not, part of any riparian buffer zone program?
If you are not, under what circumstances would you change your mind/If you are, what would get you to use them more?

Our interview groups consisted of five conservation/extension professionals and eight full-time farmers.

The five extension/conservation professionals work for WV University Agricultural Extension, Cacapon Institute, USDA Natural Resources Conservation Service, and the US Fish and Wildlife Service. Their primary responsibilities lie within the Potomac Headwaters.

The interviewed farmers come from a rather select group. The West Virginia University Agricultural Extension Service in Hampshire County offered all cattle farmers in the county the opportunity to participate in a cooperative breeding and “pooled” sales program to optimize the auction price for their cattle. The farmers surveyed for this paper are the 8 farmers that responded to this opportunity, and later formed a Limited Liability Corporation to direct market cattle produced in a way that protects water quality. Having demonstrated a tendency to implement practices before their peers, the farmers in our survey group most closely represent that segment of the farm population known as “early adoptors.” Their willingness to test well-researched, progressive practices is a result of their management philosophy, economic situation, or some combination of the two.

Because the farmers interviewed are not a representative cross-section of farmers we acknowledge that we have to apply our discussion to the general farm population with care. Specifically, we assume that the interviewees first-hand experience in trying to address water quality issues is an accurate representation of the experience the general farm population will face in the future.

Results

Discussion with the extension/conservation workers indicate that:

Participation in formal RPZ programs is very limited. A small but growing number of farmers are participating in RBZ programs, primarily to meet farm goals unrelated to or only partially related to water quality. For example, fencing of a riverbank can prevent bank erosion while keeping cattle from straying onto an adjacent property. What the program allowed them to do was get some financial assistance to reduce the expense of installing fencing, alternative water sources, or other practices.

While additional compensation may add to farmer participation in RBZ programs this is “not the best way.” Farmer concerns about RBZ programs include: “not wanting to acknowledge there is a problem;” program requirements that “don’t make sense” from the management perspective of a given farm;

“suspicions” about ultimately losing the right to manage the farm as is necessary; and all of these forces being felt indirectly via “peer pressure” from neighbors and colleagues. Also, maintaining fences along the riparian way was a singularly onerous task. Thus, while economics is a key constraint facing farmers, the primary impediments to participation in RBZ programs seem to be cultural and practical. Rather than increasing cash payment, the conservation workers cited the need to address this problem via increased farmer education and marketing of the programs.

Based on interviews with the farmers we make the following observations and generalizations:

Five out of 8 farmers cited erosion control as the main reason, or an important reason, for the conservation work they have done in their riparian corridor. This agrees with the findings of similar surveys and underscores willingness of farmers to take conservation action when it makes sense from the management perspective of a given farm.

Seven out of 8 farmers had at least partly protected their riparian corridor with fencing. Farmers said that this helped to keep cattle off steep banks, preclude cattle from crossing the river to someone else’s property, keep cattle away from streamside campgrounds, maintain water quality, and use farm resources efficiently (acknowledging that animal waste deposited in a river represented a nutrient resource lost to the farm).

Three out of 8 were currently involved in a RBZ program. In addition, 2 more farmers were once involved but are no longer. Those involved in RBZ programs did so for the financial assistance offered, and because it helped them to meet other goals. Reasons cited for lack of participation in the programs included concerns over time and labor requirements, a failure to qualify, and never having had the programs marketed directly to them. Some of the farmers had seeded grass in their riparian way while none had attempted to plant trees or shrubs.

Discussion

Increasing Farmer Participation

It is telling that despite significant RBZ conservation work on the part of 7 out of 8 farmers, only 3 were enrolled in RBZ conservation programs. This is partly due to the targeted nature of the programs—to remove the most contamination per program dollar RBZ programs target priority areas and contamination hotspots. While this seems sensible, it also limits the total number of program enrollees.

Farmers, like most of us, learn most easily from their peers. Indeed research has indicated that farmers considered the presence of a successful model as a “key factor” in getting others to adopt similar practices. We contend that each farmer that could be participating in a RBZ program but isn’t, represents a lost opportunity for farmer-to-farmer marketing of the programs, and thus, greater participation in the future. With this in mind, we would like to suggest that these programs strike a balance between contaminant removal in a given year and the number of farmers participating these programs. Some possible strategies follow.

Fewer hoops and bigger carrots One way to bring more farmers into the programs would be to make the programs more attractive overall—“make the hoops fewer and the carrots bigger” as one farmer put it. As mentioned above, many programs score farmers based on the number and type of practices they will

implement, and the environmental sensitivity of their land. Farmers need to reach a **threshold score** to be considered for participation in the program. Lowering the point threshold would allow farmers qualify with fewer conservation practices and over a broader segment of the landscape. Increasing financial incentives and cost-sharing percentages would also entice additional farmers to participate. Indeed, Reuters news service recently reported that financial incentives for conservation are likely to increase with the new farm bill in Congress. Likewise, flexibility of the scoring system is also likely to increase as the newer versions of the RBZ programs appear.

Adding to the list of “accepted practices” In addition, there are management strategies for riparian corridors, with potential to both protect water quality and enhance farm income, that are not approved conservation practices. These include, for example, campgrounds, and intensive management for products such as mushrooms or ornamentals. To the extent that these alternatives have received less attention from researchers, each raises a set of concerns. For example, fencing an area along a river and admitting campers may allow a vegetation buffer to take hold but it would be necessary to control misuse of the land by campers as well.

We think that allowing such alternative practices to qualify farmers for compensation in RBZ programs would 1) bring more farmers into the programs, 2) expand the extent of riparian way under some sort of monitored management, and 3) allow the farmers to continue to use what in some cases can be the most productive land on a farm. With this in mind we suggest that farmers be surveyed to develop a list of practices they believe to have conservation value but that are not currently approved. Developing a program of research and demonstration projects could eventually enable farmers using these practices to enter RBZ programs.

Geographic representation One reasonable goal would be to recruit participants in every community. This would in part address the fact that the ecological, and therefore agricultural, setting can change dramatically from one valley to the next—nearby models mean more. It would greatly increase the number of farmers exposed to peer marketing of the programs. It would also broaden the experience our extension staff have with the farmers and landscape.

Getting at the real problem: Sociology and Culture

While these changes will increase the number of farmers participating, they do not address important socio-cultural obstacles. Both groups of interviewees implied the importance of these obstacles by citing issues like; the need for increased farmer education, an absence of direct, i.e. “one-on-one,” marketing of the programs, suspicions that this would be a first step towards public access to a farmer’s riparian way, and increasing the cash payments as being “not the best way” to improve the programs.

By failing to directly address these issues, we think that increasing cash incentives for participation in RBZ programs will result in each additional program dollar paying for less and less clean water, otherwise know as “diminishing marginal returns.” To avoid this scenario, in addition to increasing financial incentives to farmers, we propose addressing the social obstacles through more and better contacts between RBZ program representatives and farmers.

Although unpopular in this age of down-sizing, we think that the best way to do this is to:

dedicate additional staff resources to field extension. While fliers and meetings are good, there is no real substitute for sustained person-to-person contact when working to dispel misconceptions and educate. This comes at a high price in the short term but over the long term investments in education are usually cost effective.

refine staff incentives to encourage one-on-one contact with farmers. For example, we urge program managers to consider ways to make “days in the field” a more attractive and important job element for extension staff.

assess training needs of extension staff in the areas of promoting positive social and cultural change. RBZ program staff providing technical support have usually built a significant sensitivity to their farmer clients through their work. We ask if this awareness could be enhanced through additional training in rural sociology and anthropology.

Please note that we use the term “extension” above in a broad sense, to include not only university extension agents but the entire suite of agricultural education specialists from universities and government agencies such as the USDA-NRCS and FSA.

Conclusion

Our inquiry indicates that RBZ programs are little utilized by farmers, and that current efforts to refine the programs may be only partly on target. By increasing financial incentives and program flexibility more farmers will be able to participate. We also think that more farmers would participate if the list of accepted conservation practices were longer, and the programs were structured to promote representation in every community.

These refinements however, do not directly address the social and cultural obstacles to farmer participation. We contend that intensive changes in farm management require intensive communication between RBZ program representative and farmer. To meet this need we propose adding extension staff, more field time for extension staff, and additional training for extension staff in the social sciences.

A buffer zone constructed according to guidelines is very likely to contain a significant portion of potential stream contaminants. Unfortunately, few farmers are willing and able to use these buffers. To continue making progress we may now need to refocus our science on the social variable—what farmers on what farms are amenable to installing riparian buffer zones and why?

The Cacapon Institute, founded in 1985, is a West Virginia membership-based environmental organization and state-certified laboratory dedicated to using science and education to help concerned citizens protect Appalachian rivers and their watersheds.

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