

MEMORANDUM

To: Environmental Practicum Faculty

From: Lee Carter

Re: Grassland Area Farmers Solution to Decreasing Non Point Source Pollution from Agriculture

Date: November 10, 2006

What motivated the program?

In 1983, the west side of the San Joaquin Valley caught the nation's attention when a large number of dead and deformed baby birds were found in the Kesterson Reservoir, which is part of a national wildlife refuge. The culprit was soon caught - selenium farm drainage. The soil in the San Joaquin contains a high level of selenium. Selenium collects in the tiles installed to drain excess water from the agricultural fields. In the early 1990s, selenium drainage was still being discharged into other nearby federal and state wildlife refuges, threatening ecosystems and violating water quality standards in the San Joaquin River.

In 1994, Environmental Defense responded to the pollution problem by proposing a system similar to the one now in use. In 1996, several irrigation and drainage districts formed the "Grassland Area Farmers," a regional drainage entity that includes 97,000 acres of irrigated farmland.¹ The group's initial goal was to use the San Luis Drain, owned by the Bureau of Reclamation, as an outlet for agricultural drainage.² To do so,

¹ Irrigation and drainage districts are organized as a municipal corporation, similar to a city or county, under state law. The Grassland Area Farmers seem to have combined several districts into one, similar to the consolidation of the City of Athens and the County of Clarke into one government. For another example of a irrigation and drainage district, see the Wellton-Mohawk District in Arizona, available at <http://www.wellton-mohawk.org/general.html?PPCCID=c1e31dac528df779c3f55ca1f731d602>, and the Reedy Creek Drainage District in Florida, available at http://en.wikipedia.org/wiki/Reedy_Creek_Improvement_District.

² The San Luis Drain is a drain constructed by the U.S. Bureau of Reclamation to convey subsurface agricultural drainwater from the Westland Water District in the western San Joaquin Valley. The drain was begun in 1985, but never completed due to environmental concerns and budget constraints. As a part of the movement led by the Grassland Area Farmers, the drain was completed and reopened in 1996. See <http://pacific.fws.gov/ecoservices/envicon/pim/reports/Sacramento/San%20Luis.html> for more details.

they entered into a Use Agreement with Reclamation, incorporating monthly and annual selenium load limits. Included in the agreement were incentive fees that were to be assessed if monthly or annual load limits were exceeded. In addition, a maximum cap was established on the total amount of selenium that the Grassland Area Farmers could discharge.³

Who/how many participate?

Farmers in the west side of the San Joaquin Valley. The Grassland Farmers area encompasses over 97,000 acres. Thus, a large number of farms and farmers are subject to the decisions made by the regional entity. To put 97,000 acres in to context, Athens-Clarke County is approximately 77,400 acres.

How does the regional entity work?

Grassland Area Farmers is presumably composed of farmers of the region. It has a steering committee, which is the governing body that adopts rules, such as the tradable loads program. The steering committee acts like a Board of Commissioners does for a county or city. Presumably, regional drainage and irrigation districts like Grassland Area Farmers are funded and staffed similar to counties and cities.

How does the discharge allocation system work?

Grassland Area Farmers developed a formal selenium discharge allocation system. The Grassland Area Farmers, in its attempt to meet the selenium load limits have implemented a wide variety of practices, including formation of a regional drainage entity, newsletters to the farmers, a monitoring program, an active land management program to use subsurface drainage on salt-tolerant crops, installation of improved irrigation systems, installation and use of drainage recycling systems to mix subsurface drainage water with irrigation supplies under strict limits, and tiered water pricing. Each district of the region is allowed to develop its own mix of economic incentives and drainage control methods under the trading system.

³ The selenium cap was set after a series of experiments and field tests were completed. For a detailed description of the tests and results, see William N. Beckon, John D. Henderson, Thomas C. Maurer, and Steven E. Schwarzbach, Biological Effects of Reopening the San Luis Drain to Carry Subsurface Irrigation Drainwater, available at <http://www.fws.gov/pacific/ecoservices/envicon/pim/reports/Sacramento/sanluirp.pdf>.

Additionally, a trading system was added to the allocation system to provide additional incentives for decreasing discharges. The trading system allows trades between farm districts as long as the trade is consistent with the regional allocation. The ability to trade has provided valuable flexibility for the farm districts to adjust initial allocations in response to differences among districts, such as marginal costs and changing farming conditions. The theory is that the region will meet its selenium load target at the lowest possible cost because reduction measures will be taken where they are the cheapest to be achieved. Additionally, the program should spur innovation by bringing selenium reduction decisions to a more localized level. Finally, the tradable loads program aims to distribute the costs of selenium discharge reduction equitably among the districts.

What are the sanctions for noncompliance?

It is not clear exactly what the sanctions are for those who violate the selenium discharge restrictions. It is also not clear how they are able to trace excess selenium to specific farms. However, fines are likely the most common sanction against farms for excessive discharge.

If the district as a whole exceeded the selenium limits, it would breach the Use Agreement it entered with the Bureau of Reclamation. However, it is not clear how willing Reclamation would be in terminating the use contract with the Grassland Area Farmers.

Would this make sense for Georgia?

Environmental Defense came up with a series of requirements that must be met in order for a system similar to the Grassland Area Farmers to work. First, there must be a motivation among farmers to meet water quality standards. Farmers must come to the independent conclusion that life is better when complying with water quality standards than living with the consequences of noncompliance.

Second, there must be legal mechanisms and an institutional structure to regulate districts and farmers. For example, the Grassland Area Farmers sought a contract for federal privileges. The water and drainage districts provided the requisite institutional structure because the districts have broad authority to govern water distribution and use. Districts can use this authority to link farmers' ability to receive water and drainage service to compliant with pollution limits.

Third, there must be discharge targets and effective measurement systems for the region's farm drainage. Fourth, there must be enforcement. In the Grasslands case, the threat of contract termination is widely regarded as the prime motivating factor for successful investment by the farmers.

It is unclear how many of these requirements would be met by the farmers of Georgia. Currently, there are no known drainage and irrigation districts organized under Georgia law. However, a regional district may be an appropriate solution to such issues as water rights along the Flint River. With a regional district given a set amount of water rights, a trading program, similar to the Grassland Area Farmers pollution trading program, could be set up to efficiently allocate water and hopefully help alleviate some of the water problems. Such trading systems have proven effective in other contexts such as Individual Transferable Quotas (ITQs) used in fisheries.

Sources:

Susan A. Austin, "The Tradable Loads Program in the Grassland Drainage Area," February 1, 2000, available at <http://agecon2.tamu.edu/people/faculty/woodward-richard/et/grassland.htm>.

Environmental Defense, "Nonpoint Source Pollution Control: Breaking the Regulatory Stalemate," available at <http://www.envtn.org/docs/GTLP-PNG.PDF>.

Jocelyn B. Garovoy, A Breathtaking Assertion of Power? Not Quite. *Pronsolino v. Nastri* and the Still Limited Role of Federal Regulation of Nonpoint Source Pollution, 30 **Ecology L.Q.** 543 (2003).

U.S. Environmental Protection Agency, "Grassland Bypass Project: Economic Incentives Program Helps to Improve Water Quality," available at <http://www.epa.gov/nps/Section319III/CA.htm>.