Ducks Unlimited: Conservation of North American Prairie on Private Lands, USA

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Short title: Carbon finance for conservation of native prairie, USA

Key Message: Marketing carbon sequestration services of grasslands helps to fund conservation of highly endangered prairie and wetlands which are habitat for hunting waterfowl.

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Grassland Conversion
Courtesy: Ducks Unlimited

What is the problem?

Native temperate grasslands are one of the most threatened biomes in the world. In the Prairie Pothole Region of the Northern Great Plains in North America, over 70% of pre-settlement grasslands have been lost. Eastern portions of the region contain less than 1% of pre-settlement prairie and in regions where grasslands are relatively more

abundant, pressures to convert are extremely high. With the loss of grassland comes the loss of several important ecosystem services, such as grassland and wetland habitat for unique prairie wildlife, water filtration and opportunities for recreation.

The primary driver of grassland conversion is crop agriculture. From 2002-2007, over 475,000 acres of grassland were converted to cropland in North and South Dakota. High commodity prices, driven in part by mandates for biofuel production, created a strong incentive to plant crops even on marginally productive land. The United States Farm Bill also subsidizes crop production risk (as opposed to grass-dependent cattle ranching) which provides further incentives to convert native grassland into cropland.

How can the grasslands be protected? There are no laws restricting the conversion of native grasslands – and furthermore, state law greatly restricts the ability of conservation groups, such as Ducks Unlimited (DU), from owning land in North Dakota. This means that land acquisition does not work as a large scale conservation strategy. DU is an NGO concerned with the conservation of wetlands and other waterfowl habitats. The organization is largely supported by waterfowl hunters.

The United States Fish and Wildlife Service, a federal organization, provides a Grassland Easement program. A conservation easement is a legal instrument that landowners voluntarily enter into that permanently protects existing land-uses on their property. However, the easement program in North Dakota is permanently underfunded and the payment offers made to landowners are typically not competitive with market values of land. In the face of such difficulties, Ducks Unlimited has developed an alternative solution.

Which ecosystem services (ES) are considered and how?

As stated above, native grasslands in North Dakota provide numerous ecosystem services such as habitats for wildlife and pollinators, filtering runoffs, and recreational opportunities. Additionally, grasslands also help in sequestering a significant amount of greenhouse gases. Ducks Unlimited analyzed this service and concluded that the average amount of soil organic carbon stored in grasslands is 67 to 94 metric tons of carbon per hectare. When converted to cropland however, this carbon storage benefit is compromised as 20-50% of initial soil carbon stocks are oxidized and emitted into the atmosphere.

What policy instrument builds upon this ecosystem service information?

A voluntary carbon offset market began to emerge in North America: Ducks Unlimited realized that the carbon benefit of preserving and restoring grasslands could be sold in this market and could thereby generate the necessary funds for conservation easements.
Ducks Unlimited and its partners developed an Avoided Grassland Conversion Carbon Program. The program protects the carbon stocks of the grasslands – and thereby protects a broad range of other valuable ecosystem services of these lands.

How does it work? DU purchases carbon credits from the landowner. A separate payment and agreement can be used to purchase perpetual grassland easement.

Over the course of this program, landowners have received $20-36 per acre for the outright purchase of carbon credits, or $1 per acre for an option whereby Ducks Unlimited preserves the right to purchase the credits at a later date. The average size of easements enrolled in the program is 360 acres.

The easements become a part of the National Wildlife Refuge System. The carbon credits are bundled and resold into the carbon market to further finance the program. The easement funding shortage is reduced and landowners receive compensation that is more competitive to what they could earn from converting grasslands on their property to cropland.

What input was required for doing so?

For the initial analysis, estimates of soil carbon and land-use change were the two most important data requirements. Regional soil studies conducted by scientists from The US Department of Agriculture and the academia provided justification for carbon estimates. IPCC's Tier 1 default values from the Good Practice Guidance for Land Use Change Management[1] were used to validate the estimates. Land-use change was examined using remote sensing imagery and Geographic Information Systems (GIS). In the future, credible and compliance grade grassland methodologies that can be verified against a recognized carbon standard will be necessary to ensure buyer confidence.

For starting the program, a partnership with the US Fish and Wildlife Service was essential in identifying and contacting potential landowners to participate. A private company, the Eco-Products Fund, provided up-front financing to help Ducks Unlimited purchase easements and carbon credits. Eco-Products Fund also helped to obtain accreditation for the project, and then market and sell carbon credits in the voluntary carbon market. Program development, scientific support and financial support from the Plains CO2 Reduction Partnership was also critical in program development. Ducks Unlimited managed the program.

The partnership between Ducks Unlimited, the Eco-Products Fund, the Plains CO2 Reduction Partnership and the US Fish and Wildlife Service was essential to initiating such a large scale project.

Consequences and Challenges

By taking an ecosystem services perspective, Ducks Unlimited has been able to protect over 50,000 acres of native grasslands in the Prairie Pothole Region of North Dakota through carbon finance. The project has stimulated discussion with policy makers on grassland benefits – and has raised awareness of grassland-based greenhouse gas mitigation strategies. Native Prairie preservation has even received recognition as a potential carbon offset project type under climate legislation considered in the US Congress.

Acknowledgement: Kaitlin Almack (kaitlin.almack@ufz.de) for compiling the case and Stephen C. Torbit (Torbit@nwf.org) for reviewing the case

[1] http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html

Stustman County
Courtesy: Ducks Unlimited