DoctorRange.com **The Natural Resources Knowledge Site**

Trading Carbon Credits from Western Rangelands

Dr. Steven H. Sharrow
Professor – Rangeland Ecology and Management
Oregon State University

Landowners in the western U.S. are being approached by aggregators and traders who are seeking to contract carbon sequestration credits in anticipation of national greenhouse gas (GHG) regulations that may substantially increase demand and prices over those of the current voluntary U.S. market. The U.S. did not sign the Kyoto Protocol regulating emissions of greenhouse gases. However, 34 states have adopted or are adopting their own GHG regulations. Most will use cap-and trade systems to first stabilize, then reduce carbon dioxide (CO_2) and methane (CH_4) emissions that are believed to be contributing to global warning. Cap and trade systems work by establishing a quota (the cap) of allowable emissions (credits). These emission credits may be distributed either directly to current emitters or may be sold to the highest bidder at open auction. Emitters with extra credits may sell them while those needing additional credits may either buy them or may create them by reducing emissions of other unregulated emitters or by recapturing and sequestering the pollutant. For instance, under Oregon's current GHG program, power plants have met the required 17% CO_2 emissions reduction by sponsoring mitigation projects such as planting riparian forest along the Deschutes River to capture and store carbon, and by installing newer more energy efficient heating systems in local schools. Forests, pastures, and rangelands store large amounts of carbon in vegetation and soil organic matter. Additional carbon stored as a result of changed land management may be sold if the amount sequestered can be adequately estimated and if assurances that it will remain sequestered are credible. The major U.S. market for trading carbon credits is the Chicago Climate Exchange (CCX). It sells large diversified carbon contracts to businesses and other large users through an open auction process. The CCX will accept and sell carbon sequestration credits from forest, permanent grassland, and rangeland projects. The amount of carbon sequestered is estimated from computer models of specific land management practices within Natural Resource Conservation Service Land Resource Regions. Most land owners will probably need to join others through an "aggregator" in order to offer sufficient total carbon offset credits to interest the CCX in brokering their contracts. Aggregators may be commercial firms or existing local organizations such as woodland owners associations, soil conservation districts, or watershed councils. Once carbon credits are verified by CCX, they are auctioned off and the proceeds are distributed. Typically, the CCX retains 20% of contracted credits as a contingency reserve. The CCX takes 5% commission, the aggregator typically takes 10-15% commission, and the landowner gets the remaining 80-85% of the money. Auction prices of credits vary with supply and demand. Currently, the price is about $2/ton of CO_2. This would yield about 24 cents/acre/year for well managed Eastern Oregon rangeland. It is generally expected that the price will rise significantly if U.S. government regulation imposes a cap and trade system. However, the price will vary with the cap set, mitigation techniques allowed to offset emissions, proportion of cap emissions issued directly to current emitters, and other

regulatory details. Terrestrial carbon sequestration projects on forests, pastures, and rangelands will have to compete favorably with other allowed mitigations. In Oregon, these alternatives have included increased energy efficiency projects, renewable energy, materials substitution, and transportation efficiency projects. This makes future prices for carbon credits very hard to accurately predict.