



Minnesota Department of Natural Resources: Producing energy and storing carbon on lands

The Minnesota DNR is addressing energy and global climate issues in a variety of ways. One very promising strategy is to produce energy and store carbon on lands.

Efficiently growing and harvesting biomass (perennial grasses and wood products) for conversion to biofuel, while at the same time storing carbon on lands, would provide multiple benefits—for society, fish and wildlife, water quality, and private landowners.

The DNR is currently involved in two pilot projects on state Wildlife Management Areas (WMAs). The goal: help establish the efficacy of growing native grasses as an alternative crop and evaluate habitat management benefits. Grass was harvested using conventional farming practices. Harvest sites were selected based upon wildlife management needs as opposed to highest potential yield locations.

Stevens County

The harvest of grasses from two state WMAs and three federal Waterfowl Production Areas (WPAs) in Stevens County took place in fall 2007. A total of 146 acres were harvested through a cooperative farming agreement with yields ranging from 1.20 to 2.78 tons per acre. The University of Minnesota Morris will utilize the grass at its biomass heating and research facility.



Baling prairie hay from Eldorado State Wildlife Management Area in Stevens County in October 2007. Bales were delivered to the University of Minnesota–Morris to be used as a biofuel.

Chippewa and Kandiyohi counties

A total of 30.5 acres of grass was harvested from three WMAs last fall with yields ranging from 1.0 to 2.1 tons per acre.

Minnesota Valley Alfalfa Producers intends to convert the grass into pellets to be sold as a heating source. (Pelletizing has not yet occurred.)



Large, round bales of prairie hay harvested from Grace State Wildlife Management in Chippewa County in late November 2007.

Conclusions

Staff from the University of Minnesota West Central Research and Outreach Center studied the Stevens County project and concluded:

- biomass can be successfully harvested from native grasslands;
- a land manager/owner could realize an economic benefit from harvesting biomass;
- biomass harvesting shows promise as a wildlife management tool compared to the expense of prescribed burns.

The DNR is committed to further research in this area and has been in discussion with several other potential consumers and processors of prairie-type biomass (Koda Energy of Shakopee, FibroMinn of Benson, CVEC of Benson, Pork and Plants of Winona, Rural Advantage of Fairmont, and Heron Lake Energy). It is estimated that perennial grass can produce almost 15 millions BTUs per ton.