



Switchgrass for Bioenergy

Monona Farms

PA Biomass Program - PDA
Planting CRP Lands
Harvest Study
DEP Energy Grant
WPPSEF
N.R.B.P
USDA-F.S.A.

PA Game Commission
Agriculture Research Service
John Deere Company
Private Foundations
Wildlife Organizations
Universities – Penn State,
IUP, CalU, CMU, Cornell

Thomas Stickle

P.O. Box 612, Ligonier, PA 15650
TEL: (724) 238-7645, FAX: (724) 238-3369
tstickle@verizon.net



USDA Biomass Pilot Projects

Announced in 2001

- **Authorization from USDA for use of Conservation Reserve Program (CRP)**
- **Permits CRP lands to be harvested for use as energy crops**
- **Receive 75% of lease payments for acreage harvested**
- **Iowa, Minnesota, New York and Pennsylvania**



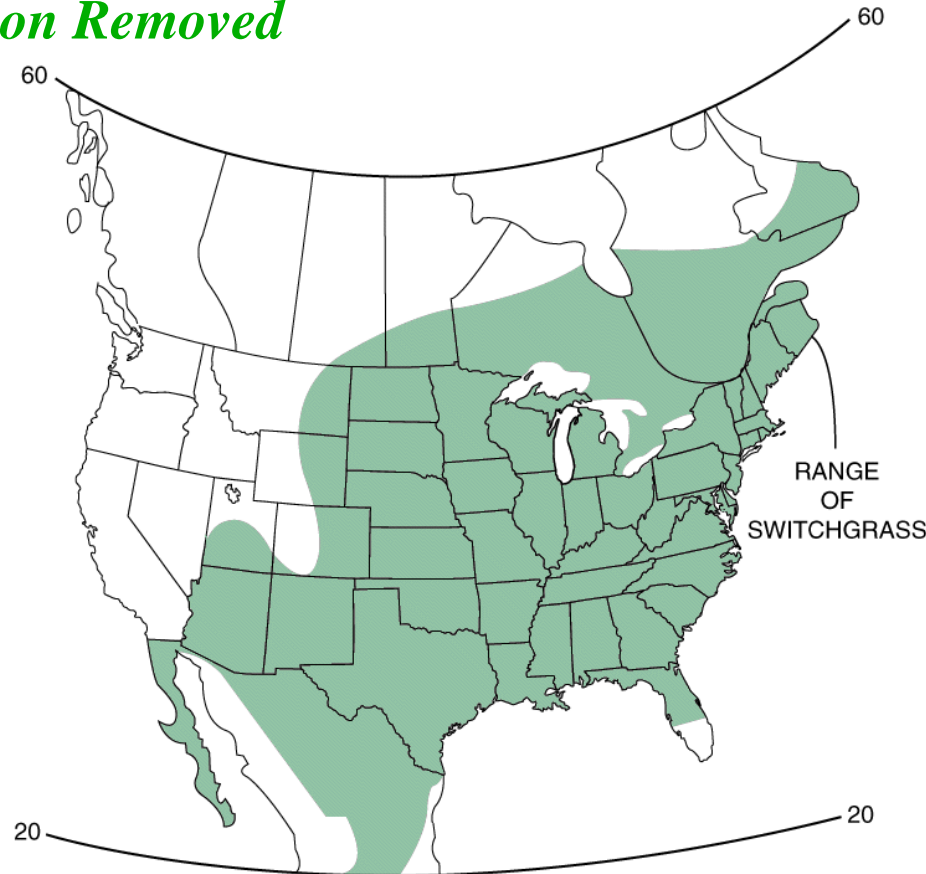
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PA Authorization

In 2002 Authorization Removed

- One year of switchgrass harvesting and wildlife data collected
- Monona Farms authorization from USDA county, state, national. Permission for CRP research/demonstration farm.
- Switchgrass will grow on almost entire U.S.



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Typical Pennsylvania CRP Lands

- Late 2002 Monona Farms granted special research and demonstration status from USDA
- Because of affiliations with NRBP and PA Biomass working group special status was granted.
- 2004 because of the research completed, 22,000 acres of CREP land allowed to be harvested for energy



Monona Farms 1999

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Windrowed Switchgrass

Because of collaborating with others in the Biomass projects, our CRP emphasis focused on harvest half/leave half



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Switchgrass Tour

The public/private partnerships require additional resources to be devoted to outreach and education.



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Carbon Sequestration Study: ARS

Because of our involvement with NRBP, Private foundations, Universities (not just PA) and A.R.S. became partners.



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PA Game Commission Officer Explaining Re-Growth Benefits

**Additional
partners including
PGC, D.U.,
Pheasants forever
became involved.
We are working
with a national
committee to
change CRP
regulations to
allow harvesting
for energy.**



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Switchgrass to Ethanol – Cornell University

**Project donated
switchgrass to
Cornell
University for
Ethanol
research.
Cornell found
the switchgrass
project through
other partners of
NRBP**



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Carnegie Mellon University/Cornell University Tour

**CMU renewable
energy
development
appropriation.**

**Cornell
transportation
appropriation –
ethanol
development**



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Switchgrass Gasification Project

**This project
constructed a gasifier
with Pa's DEP,
Monona farms, and
Taylor Energy from
California. This is
more of th
collaboration
between public and
private entities.**



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Pelletization of Switchgrass

**Working with
partners including:
Monona farms,
CPM, CPC in
Colorado, Auburn,
University of
Pittsburgh,
Penn State
University, the first
ton of switchgrass
pellets were
produced.**



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Switchgrass Pelletization

In this project, we mixed waste coal with switchgrass and included partners such as PA DEP, C.Q. *inc* and local coal companies.



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Other Partners

- **USDA Agri-Research Service**
- **Penn State University**
- **USDA Farm Service Agency**
- **PA Department of Agriculture**
- **PA Farm Bureau**
- **PA DEP**
- **Monona Farms**
- **Pennsylvania Environment Council**
- **Western PA Watershed Program**
- **Ruffed Grouse Society**
- **Northeast Regional Biomass Program**
- **West Penn Power Sustainable Energy Fund**
- **Penn State Univ.- Extension**
- **Pheasants Forever**
- **PA Game Commission**
- **University of Pittsburgh**
- **Carnegie Museum Powdermill**
- **John Deere**
- **Ducks Unlimited**

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