





GREEN FLAME ENERGY

FIELD TO FLAME BIOMASS SERVICES

PROFITABILITY OF AVAILABLE CROPS AND RESIDUES IN EAST CENTRAL ILLINOIS

Revised 5/1/2011	Corn	Soybeans	MxG Full Production	Switchgrass Full Production	Corn Stalks	Cobs
Yield - bu or dry tons/ac	200	60	8.5	5.4	2.25	0.54
Price/bu - ton, Farm Gate	\$ 5.00	\$ 11.65	\$ 75	\$ 75	\$ 75	\$ 75
FSA Payments	\$ 10.00	\$ 10.00				
Income	\$ 1,010	\$ 709	\$ 638	\$ 405	\$ 169	\$ 41
Fertilizer	\$ 164	\$ 80	\$ 47	\$ 25	\$ 62	\$ 6
Chemical	\$ 55	\$ 55	\$ -	\$ -	\$ -	\$ -
Seed	\$ 120	\$ 37	\$ 50	\$ -	\$ -	\$ -
Power, Equip	\$ 96	\$ 84	\$ 89	\$ 152	\$ 77	\$ 15
Strg, Drying, Bldg	\$ 42	\$ 9	\$ 3	\$ 3	\$ 2	\$ 2
Labor paid and unpaid	\$ 56	\$ 56	\$ 15	\$ 15	\$ 11	\$ 11
Misc, Insr, Interest on Opr.	\$ 62	\$ 58	\$ 28	\$ 26	\$ 11	\$ 5
Land Rent	\$ 300	\$ 300	\$ 300	\$ 300	\$ -	\$ -
Expense	\$ 896	\$ 678	\$ 531	\$ 521	\$ 162	\$ 40
NET / ACRE	\$ 114	\$ 31	\$ 106	\$ (116)	\$ 7	\$ 1

JUNE 8, 2011





EIU'S PLANT TO COME ONLINE JUNE 2011



SEED STOCK AVAILABLE FROM SMALL OPERATIONS TO COMMERCIAL SCALE MISCANTHUS PRODUCTION





HARVESTING AND REPLANTING RHIZOMES IN GERMANY





HARVESTING EQUIPMENT





STORAGE IN THE FIELD

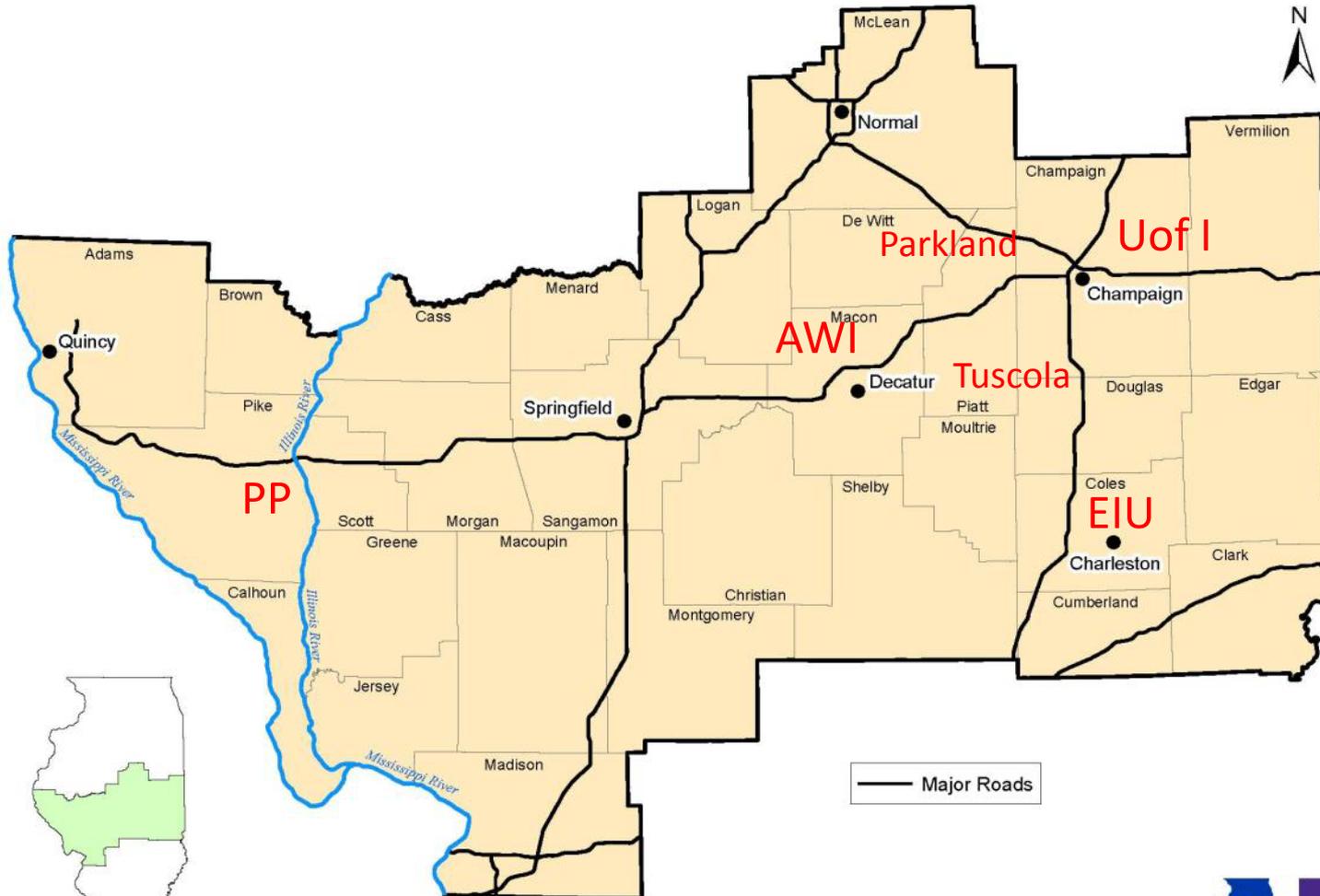


BCAP (BIOMASS CROP ASSISTANCE PROGRAM) PART OF THE 2008 FARM BILL

- Administered by FSA
- Project Area
- Covers up to **75% of establishing** a biomass crop.
- Provides **LAND PAYMENT** similar to CRP for 5 years
- Offers a matching payment of up to **\$45/ton**
- <http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ener&topic=bcap>



PRAIRIE STATE BIOMASS BCAP PROJECT AREA



0 12.5 25 50
Miles

Data Source: USDA, IIRA
Data Current: 2011
Map Created by: A. Rupe, GIS Specialist, IIRA



EXTENDING THE CRP FILTER STRIP AND SQUARING OFF THE CORN FIELD



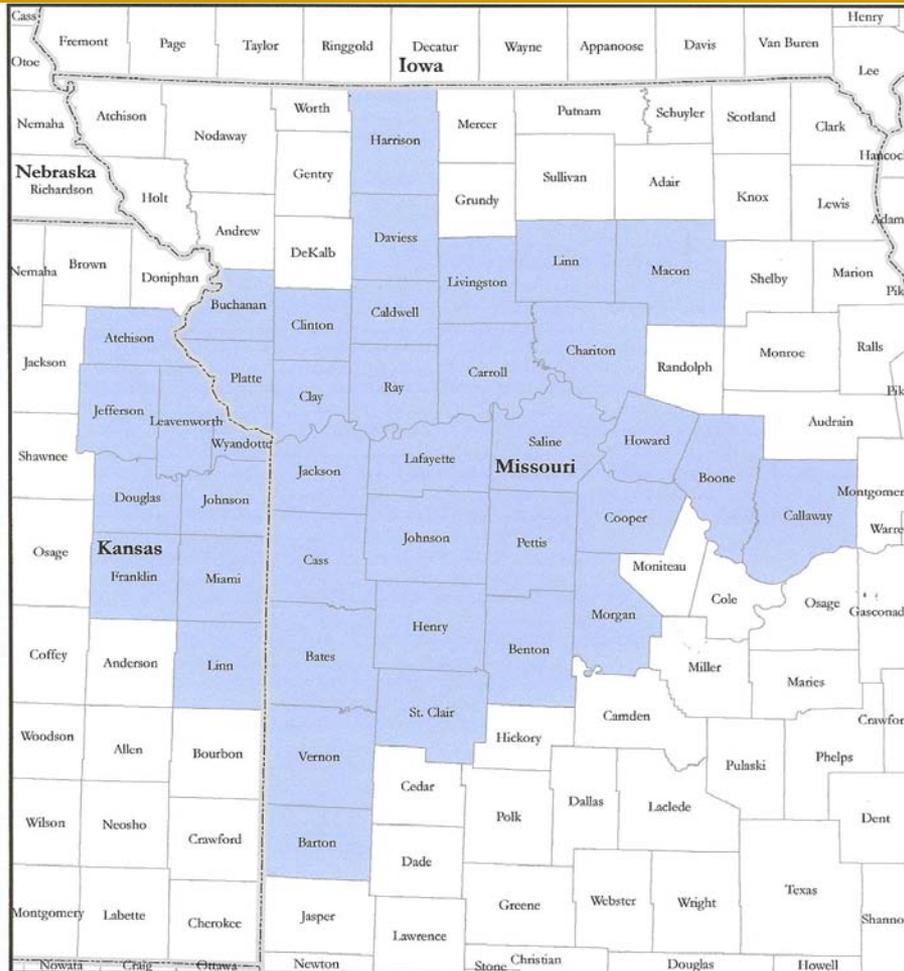
UNDERSTAND THE AFFECTS ON WILDLIFE



BCAP PROJECT AREA 1

SHOW ME ENERGY COOPERATIVE

BCAP PROJECT AREA 1 MISSOURI & KANSAS



- 39 counties in two states
- 25,000 acres
- Mixed Prairie
- 3 tons/acre
- 700,000 tons over 10 years
- \$23.8 million Total cost to FSA
- **\$33.93** cost/ton



BCAP PROJECT AREAS 2-5

MFA OIL BIOMASS & ALOTERRA

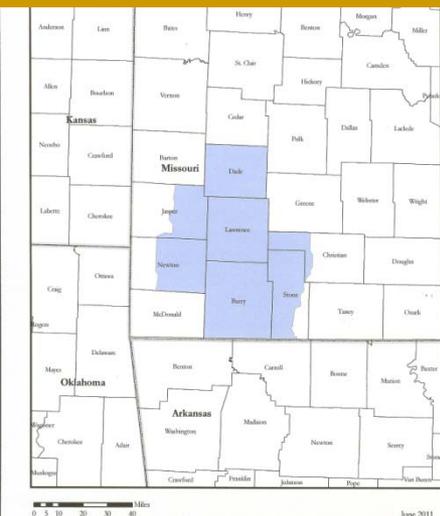
PA 2 Arkansas



PA 3 Missouri



PA 4 Missouri



PA 5 Ohio & PA

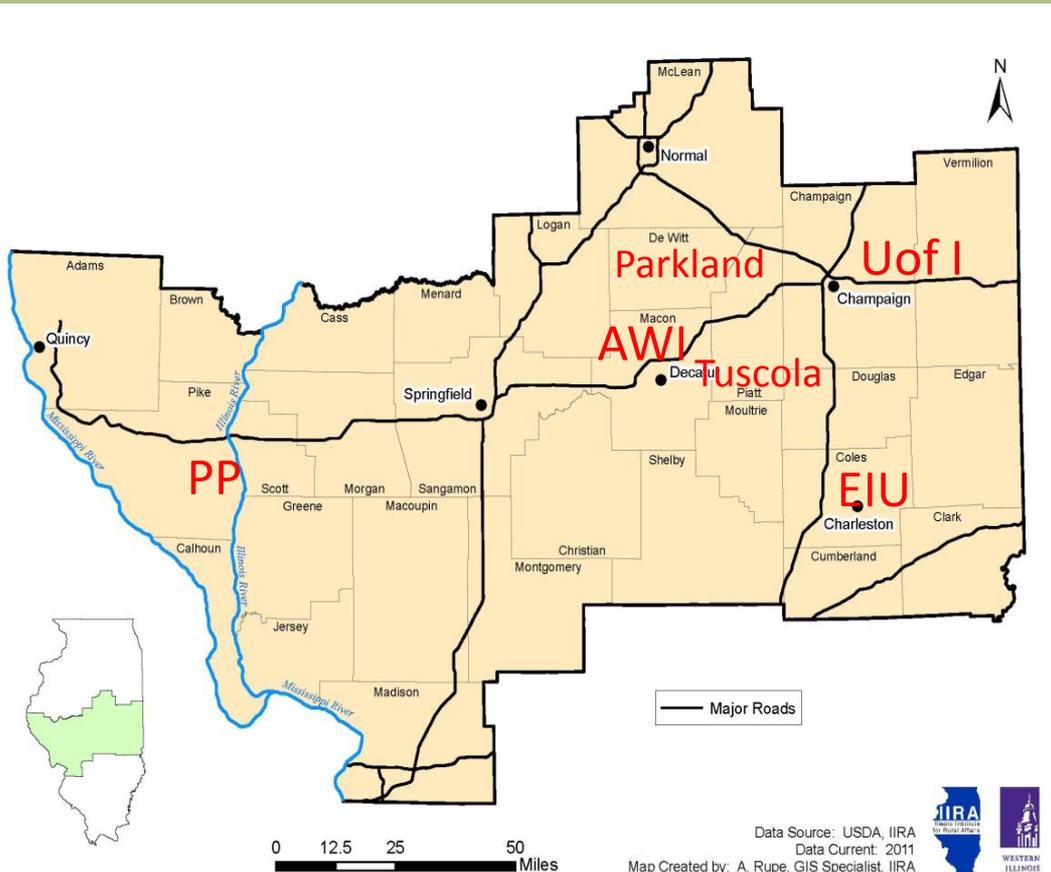


- 28 counties in four states
- 19,150 acres planted
- Miscanthus Giganteus
- 10 tons/acre
- 1,187,500 tons over 10 years
- \$24.9 million Total cost to FSA
- **\$20.97** cost/ton

- Plans are to pelletize the Mxg which FSA considers an Advanced Biofuel.



PRAIRIE STATE BIOMASS BCAP PROJECT AREA



- 29 counties in Illinois
 - 16,300 acres
 - Miscanthus & Prairie
 - 7.4 tons/acre
 - 840,600 tons over 10 yrs.
 - \$20.7 million cost to FSA
 - **\$24.63** cost/ton
-
- Plans are to burn for heat and power.

BILLIONS ON R&D TO CONVERT BIOMASS MILLIONS TO GROW IT

- THE HOUSE CUT \$138 MILLION FROM BCAP FOR FY11 LEAVING \$112 MILLION.
- ZERO FOR FY12.
- IN THE SENATES HANDS
- Senator Amy Klobuchar (D-MN). Senator John Thune (R-SD)

OFFER SOLUTIONS

ELIMINATE THE CORN ETHANOL TAX CREDIT

FROM THAT \$5 BILLION SAVED SPEND

\$1 BILLION ON BCAP

\$1 BILLION ON ETHANOL INFRASTRUCTURE

**\$3 BILLION ON DEFICIT REDUCTION OR JOB
PROGRAMS**

THERE IS STILL A THE DESIRE TO PUSH FOR BIOMASS ENERGY, BUT THE BCAP STORY NEEDS TO BE TOLD.



PRESIDENT OBAMA ADDRESSED OUR RURAL DEVELOPMENT GROUP



THE WHITE HOUSE "CHAMPIONS OF CHANGE" ROUND TABLE DISCUSSION

MAKE YOUR POINT AND MAKE IT MEMORABLE.



MISCANTHUS PEN

THINK SMALLER



- **HOMES, ESPECIALLY LP GAS**
- **LOCAL SCHOOLS**
- **SMALL BUSINESSES**
- **CITY BUILDINGS**

LIMITED PRODUCTION - SMALL LOCAL DIVERSIFIED MARKETS



UTILIZING WHAT YOU GROW GIVES THE HIGHEST RETURN





SELLING ENERGY, NOT FUEL TO LOCAL SCHOOL





LOCAL LARGER MARKETS





GREEN FLAME ENERGY

FIELD TO FLAME BIOMASS SERVICES



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SPECIAL CARE, SPECIAL PLANTERS, HAND LABOR, WATER



EQUIPMENT AVAILABLE FOR HARVESTING AND TRANSPLANTING RHIZOMES



THE MOST EFFICIENT BIOENERGY USES

A COMPLETE FIELD TO FLAME SYSTEMS APPROACH

Large Bales

Mow & Windrow	\$2.00
Bale & Stack at end of field	\$23.00
Load tuck with forklift - \$50/hr	\$1.00
Haul 25 tons - 50 miles @\$3.00/loaded mile	\$ 6.00
Unload bales to storage – forklift	\$ 1.00
Move bales to grinder – forklift	\$ 0.50
Destring & Grind (300 hp)	\$20.00
Move chips to storage	\$ 0.25
Convey to boiler	\$ 0.25

Total Cost for Fuel Chips \$54.00

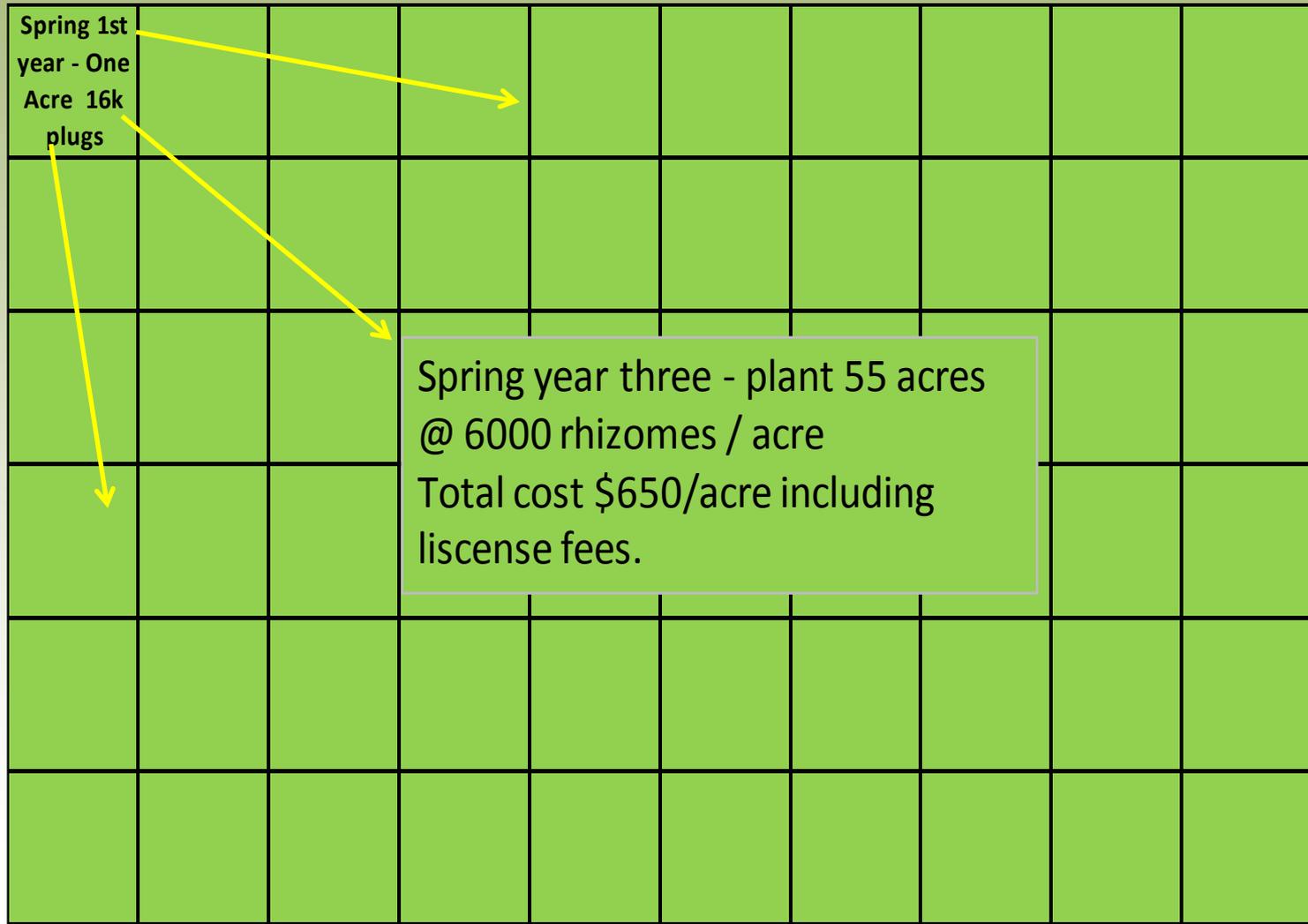
Silage Chopper

Chop & Stack at end of field	\$ 9.00
Load tuck with end loader - \$50/hr	\$0.75
Haul 15 tons - 50 miles @\$3.00/loaded mile	\$10.00
Unload walking floor truck to storage	\$ 0.50
Convey to boiler	\$ 0.25

Total Cost for Fuel Chips \$20.50

Pelletizing would add \$15-\$20 a ton to either method.

GROW YOUR OWN SEEDSTOCK



WINTER HARVEST



HARVEST 1.6 CROPS IN ONE YEAR



CUSTOM HARVESTERS CAN EXTEND THEIR SEASON



LEARNING TO SEE HOW THE GERMAN MODEL CAN BE ADAPTED TO ILLINOIS



DENSITY OF HARVESTED MXG

Chopped 130 kg/m³

Baled 170-200 kg/m³

PLANTING USING STRIP-TILL

