

Mapping Biomass Distribution Potential

Michael Schaetzel
Undergraduate ♦ Environmental
Studies ♦ University of Kansas

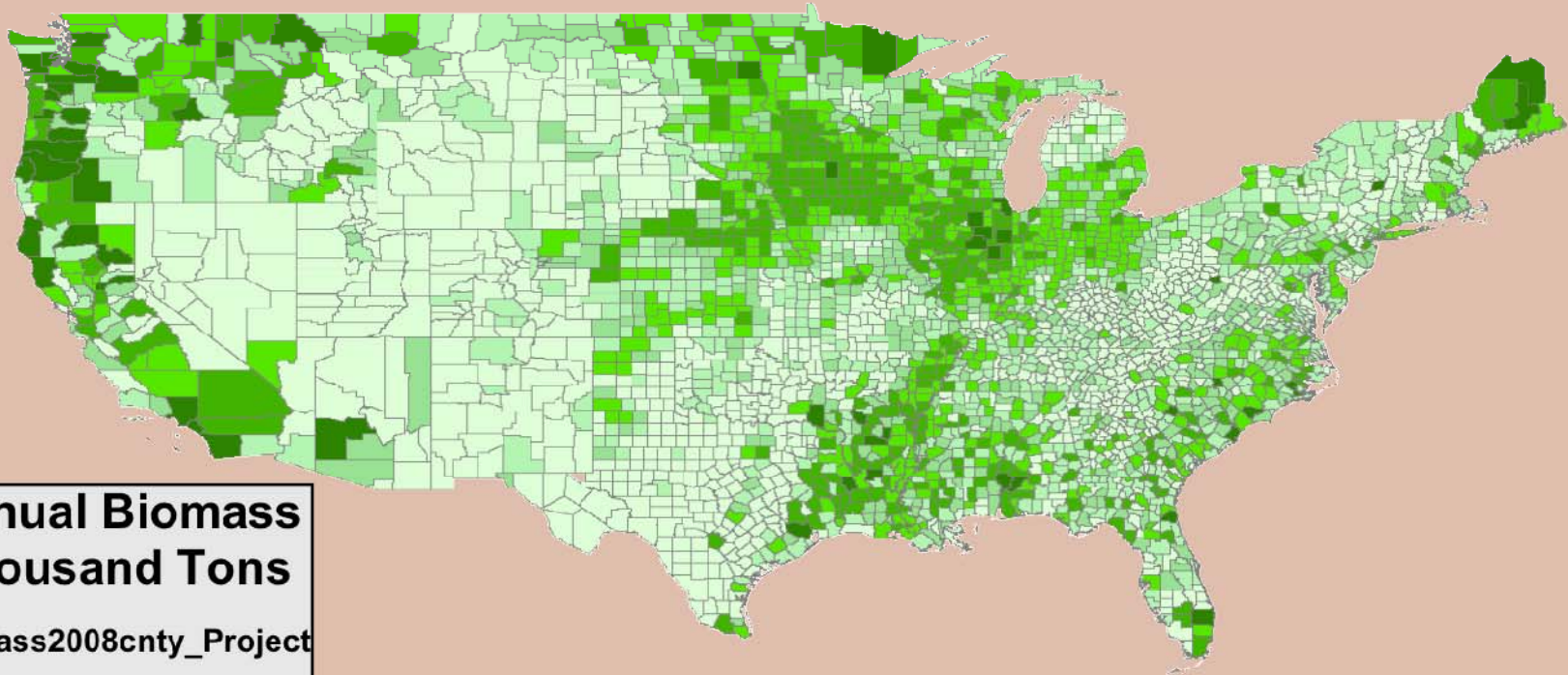


Biomass Facilities

L
O
C
A
T
I
O
N



Counties Capable of Turning Biomass into Electricity



Annual Biomass Thousand Tons

Biomass2008cnty_Project

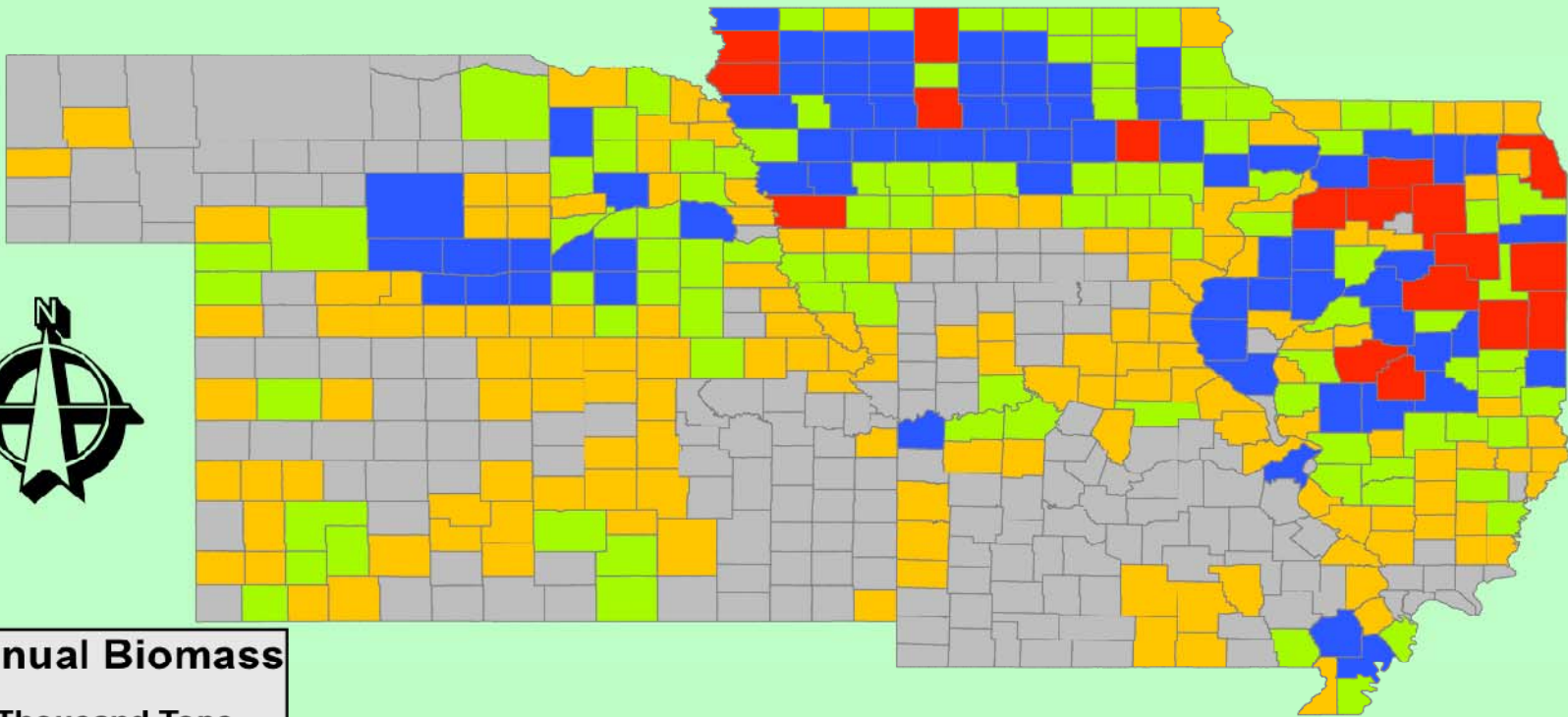
Total

-  Above 500
-  250 - 500
-  150 - 250
-  100 - 150
-  50 - 100
-  Less than 50

0 250 500 1,000 1,500 2,000 Miles

GIS Servers\ArcGIS on mapserve3.nrel.gov\Biomass
\Web_Mercator_Biomass_2008cnty.MapServer

Counties Capable of Turning Biomass into Electricity



Annual Biomass

Thousand Tons

Total

0 - 50
50-100
100-150
150-200
200-450

data gathered from www.nrel.gov

BIOMASS ENERGY POTENTIAL



- According to DOE, Biomass has the potential to provide 14% of the nation's power
- Currently 1% of national power supply
- Carbon neutral- combustion of biomass is part of the natural carbon cycle
- Improved crop residue management has potential to benefit environment, producers, and economy

Biomass	Btu/lb (dry mass)
Almond shell	7157.346867
Dirty Diaper	11054.89193
Grape Vine	7223.93455
Pecan shell	6882.418267
Pine Needle	7795.715667
Peanut shell	5232.303533
Peach Pit	7510.1305
Cicada shell	5413.603233
Sunflower shell	6978.626967
Switch Grass	6889.93275
Pistachio shell	7209.482733
Hybrid Poplar*	8384
Corn Stover*	7890
Switchgrass*	8000
Sugarcane*	8149
Wheat Straw*	7481



DENSIFICATION: WHY BRICK



- More efficient burning
 - Less energy goes into evaporating H_2O
 - Less leftover ash
 - Less smoke byproduct
- Annually 75% of biomass surface material returns to CO_2
- Easier to store and transport

GIS Role in Carbon Neutrality



- Site planning for future BM Energy Plants
- Best use practices for land management
 - Regional alternative energy crop production
 - CRP land integration
- Commercial distribution of bricked Biomass