



Agroecosystem Management

Research Unit

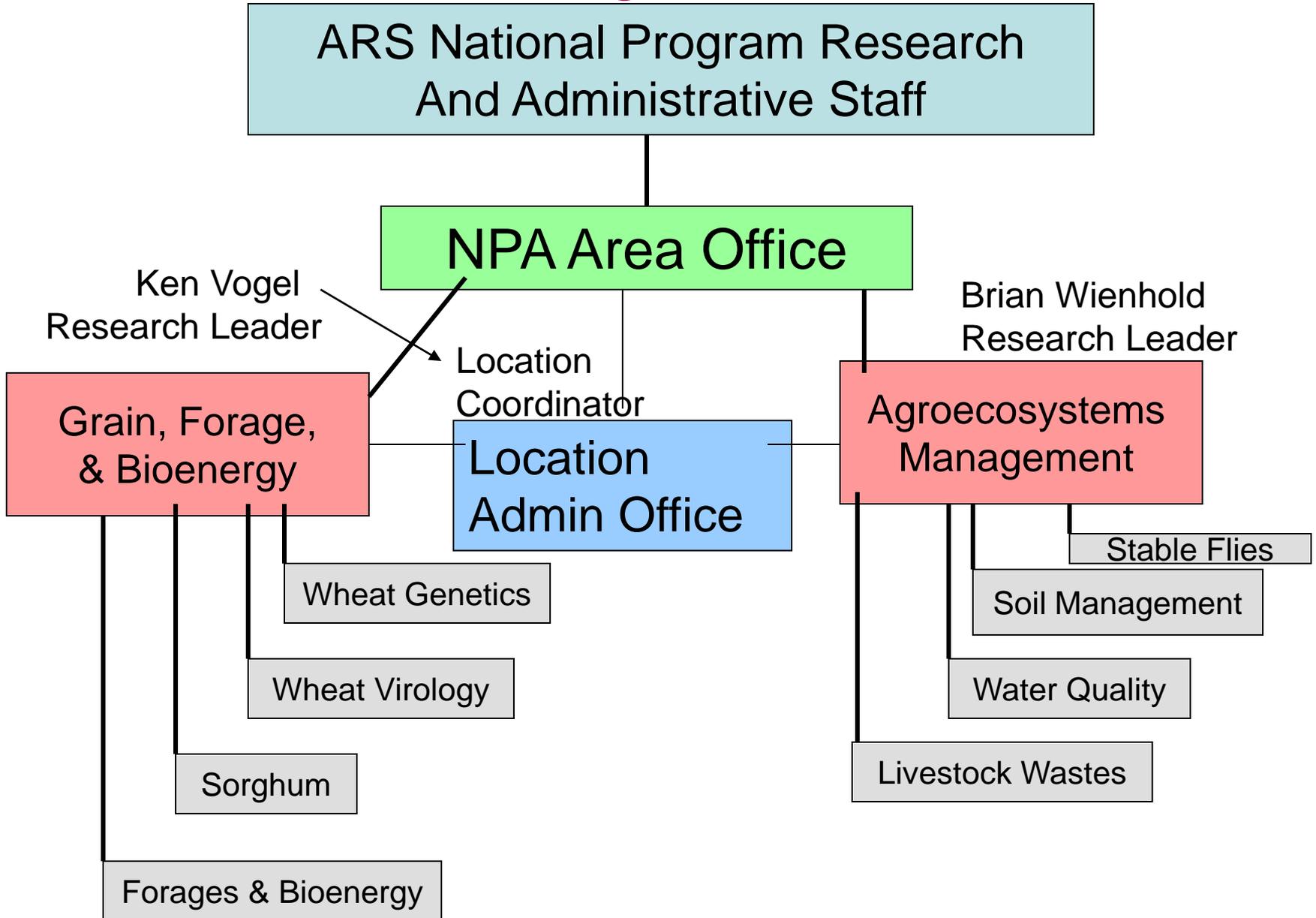
and

Grain, Forage, and Bioenergy

Research Unit

Lincoln, NE

ARS Lincoln - Management



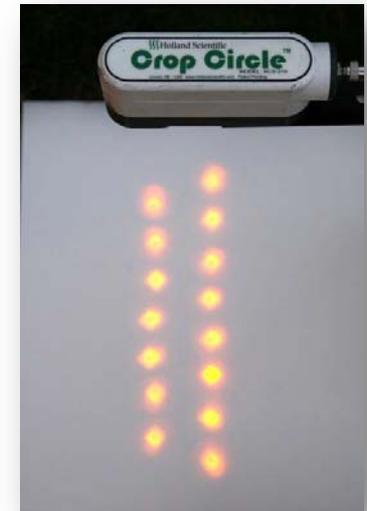
Soil Management Accomplishments

- Determined that ~6000 lbs/ac or residue is needed to protect the soil from wind and water erosion and sustain the soil biota.
- Diverse dryland cropping systems and high production irrigated systems sequester C.
- Develop soil quality assessment tools.



Water & Air Quality (ground & surface water N levels)

- Developed a sensor under CRADA with Holland Scientific for detection of crop N stress.
- Developed an algorithm for in-season N fertilization needs.
- Sensor based N fertilization has potential for achieving similar yields with reduced N inputs compared to current fertilization recommendations.
- Air quality: Nitrous oxides from fertilizer N has global climate change implications.

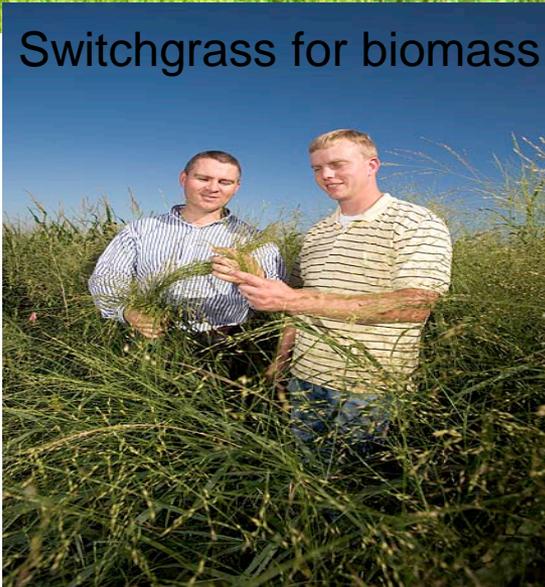


Switchgrass Bioenergy Research Lincoln, NE

Pasture production systems



Switchgrass for biomass



Switchgrass Research

1930's to present

- Switchgrass for pastures, all aspects, breeding & Mgmt.

Bioenergy 1990's – 2007.

- Initial assessment studies.
- Management studies. Breeding and genetics.
- Large scale economics and net energy trials.

Current research 2008-2013.

- Environmental factors: C
- Feedstock quality
- Feedstock harvest and storage.
- Genetics and management

Lincoln ARS Switchgrass Bioenergy Crop Cooperative Research

