



# **CONSERVATION PROJECTS IN THE SANDHILLS OF NEBRASKA**

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# AGENDA

- Overview of Sandhills
- Threats to Sandhills
- Habitat Restoration Projects
- Programs & Implementation

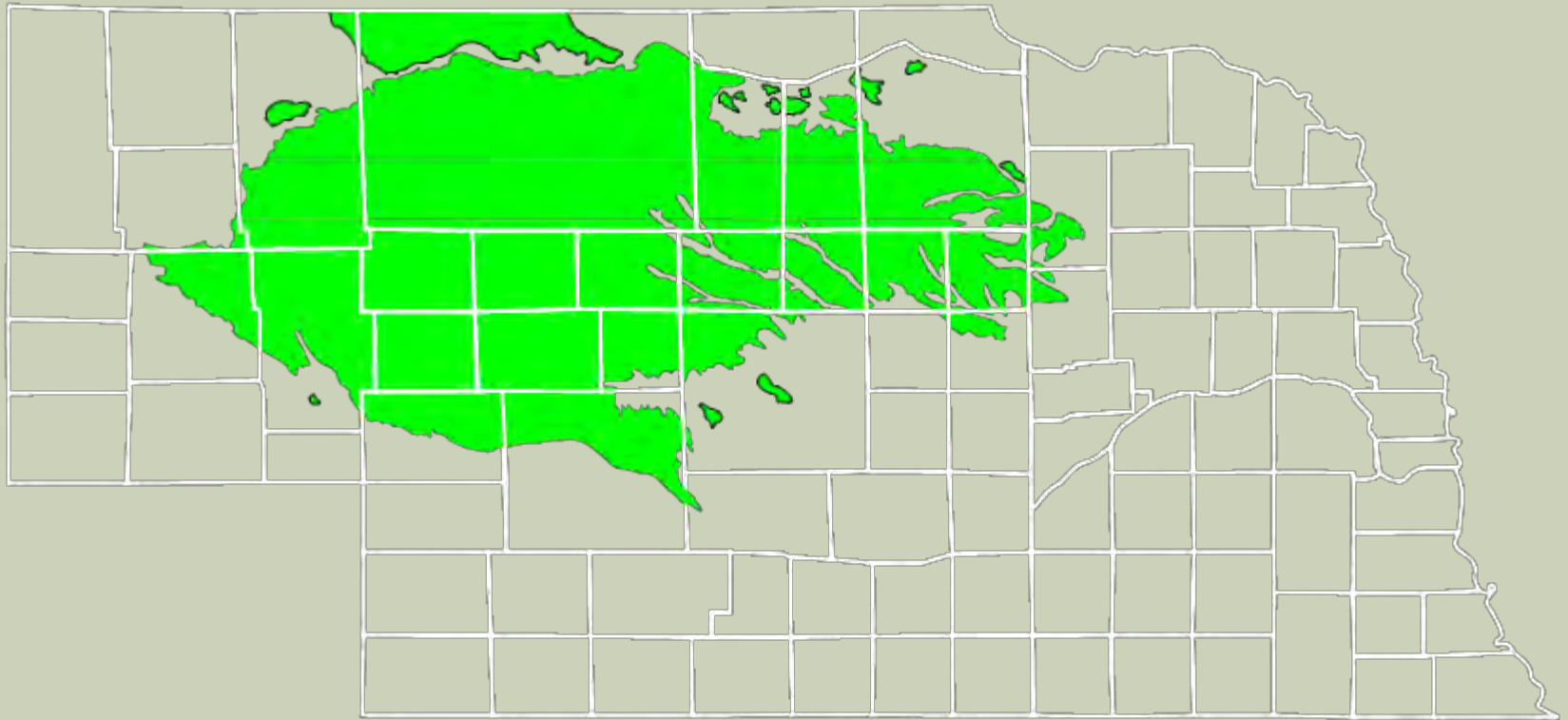




# SANDHILLS

- Largest Sand-Dune Area In Western Hemisphere
- Largest Grass Stabilized Dune Region In Northern Great Plains
- Comparison
  - 10 Times Larger Than State Of Delaware
  - 3 Times Larger Than State Of Massachusetts





**19,300 SQUARE MILE REGION**  
**265 MILES EAST TO WEST**  
**130 MILES NORTH TO SOUTH**

# SANDHILLS

- First ranches began in late 1800's
- 90% private ownership
- 95% grassland
  - 11.5 million acres
- Ranching main industry

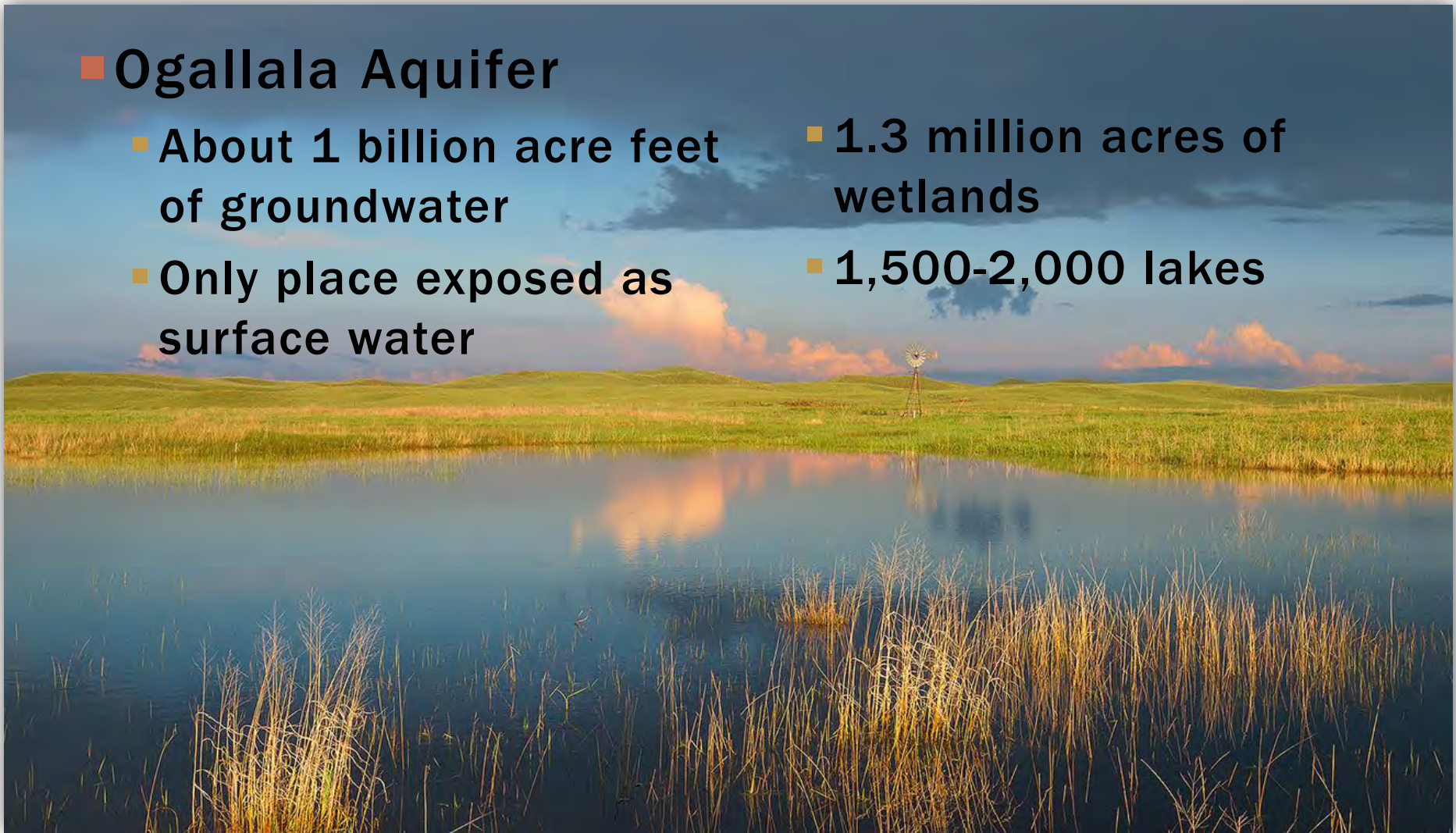




# SANDHILLS HYDROLOGY

## ■ Ogallala Aquifer

- About 1 billion acre feet of groundwater
- Only place exposed as surface water
- 1.3 million acres of wetlands
- 1,500-2,000 lakes



# SANDHILLS WILDLIFE

- Reptiles and Amphibians

- 27 of 60 species

- Insect

- Monarch Butterfly
  - American Burying Beetle

- Mammals

- 55 of 95 species

- Birds

- 314 of 404 species
    - 12 endemic to NE





# SANDHILLS WILDLIFE

- Due to its variety of both wetland and grassland habitats, it's identified as an important geography for numerous avian species
  - Most significant waterfowl nesting habitat outside of Prairie Pothole region
  - Nesting habitat for High Plains Flock of Trumpeter Swans
  - Nesting habitat for ~4 million grassland birds
    - Sharp-tailed grouse
    - Greater Prairie Chicken





# FLAGSHIP SPECIES OF THE PRAIRIE



# PRAIRIE GROUSE FACTS

- **Area sensitive species requiring large, open expanses of grasslands (75% grassland and 25 % cropland/woody)**
- **Home range approximately 5 miles**
- **Nesting and brood rearing habitat most limiting factor**
- **Most nests within 1 mile of nearest lek**





# AGENDA

- Overview of Sandhills
- Threats to Sandhills
- Types of Projects
- Programs & Implementation





# THREATS TO THE SANDHILLS

Wetland drainage and ditching



Eastern Redcedar expansion



Repetitive heavy utilization



Invasive species





# ADDITIONAL THREATS

- Energy Expansion
- Cultivation – Row Crop Production
- Fragmentation
- Urbanization



# AGENDA

- Overview of Sandhills
- Threats to Sandhills
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# HABITAT RESTORATION IN THE SANDHILLS

- 
- **Grazing Management**
  - **Eastern Red Cedar Encroachment**
  - **Restoration of Wet Meadows**
  - **Lake Renovations**

# HABITAT RESTORATION IN THE SANDHILLS

- 
- A wide-angle photograph of a grassy landscape, likely a wetland or meadow, with a winding river or stream in the middle ground. The foreground is filled with tall, dry grass. The background shows rolling hills under a blue sky with scattered white clouds.
- **Grazing Management**
  - **Eastern Red Cedar Encroachment**
  - **Restoration of Wet Meadows**
  - **Lake Renovations**



# GRAZING MANAGEMENT OBJECTIVES

- Manage grassland structure and diversity to meet the habitat requirements for greater prairie-chickens, sharp-tailed grouse, grassland nesting bird species, and other grassland dependent native wildlife species
- Enhance the productivity, health, and vigor of the native rangeland
- Enable the Landowner to better withstand droughts by carrying over forage from one grazing season to the next and promote long term sustainability and profitability for the Landowner

Finding a balance between maximizing wildlife habitat and maximizing ranching profitability

# GRAZING MANAGEMENT DESIGN

- Convert from season-long grazing and into rotational system
  - 4+ pasture system
  - One time annual visit during the growing season
    - Grouping herds
- Average pasture size – 640 acres, could go down to 400 acres
  - Minimize watering locations
  - Finding balance between grazing utilization and grassland structure for wildlife
- Grazing meadows vs annual haying of meadows
- Rotating winter grazing pastures



# GRAZING INFRASTRUCTURE

PIPELINE



CROSS FENCE



SOLAR WELL



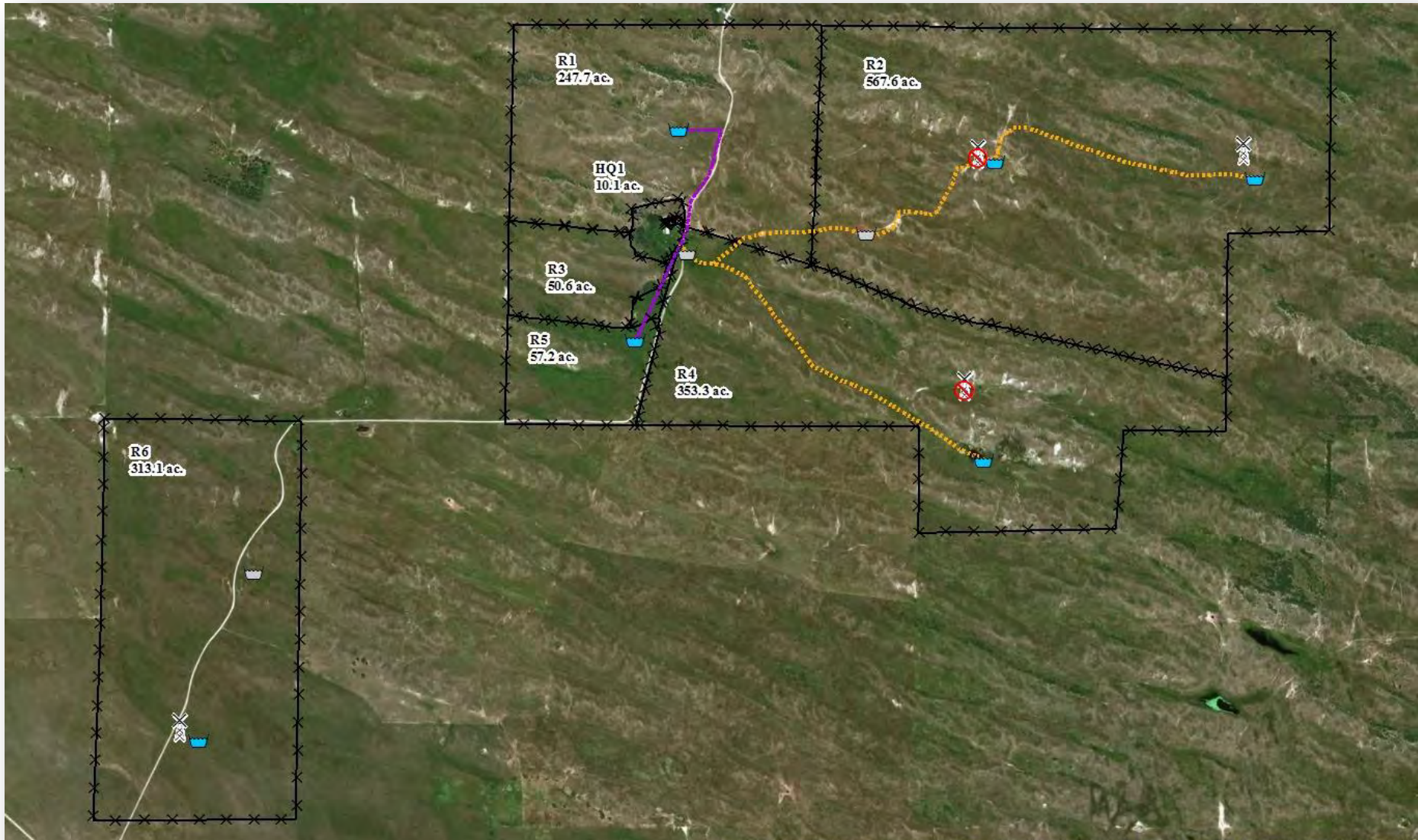
LIVESTOCK TANKS





# GRAZING MANAGEMENT

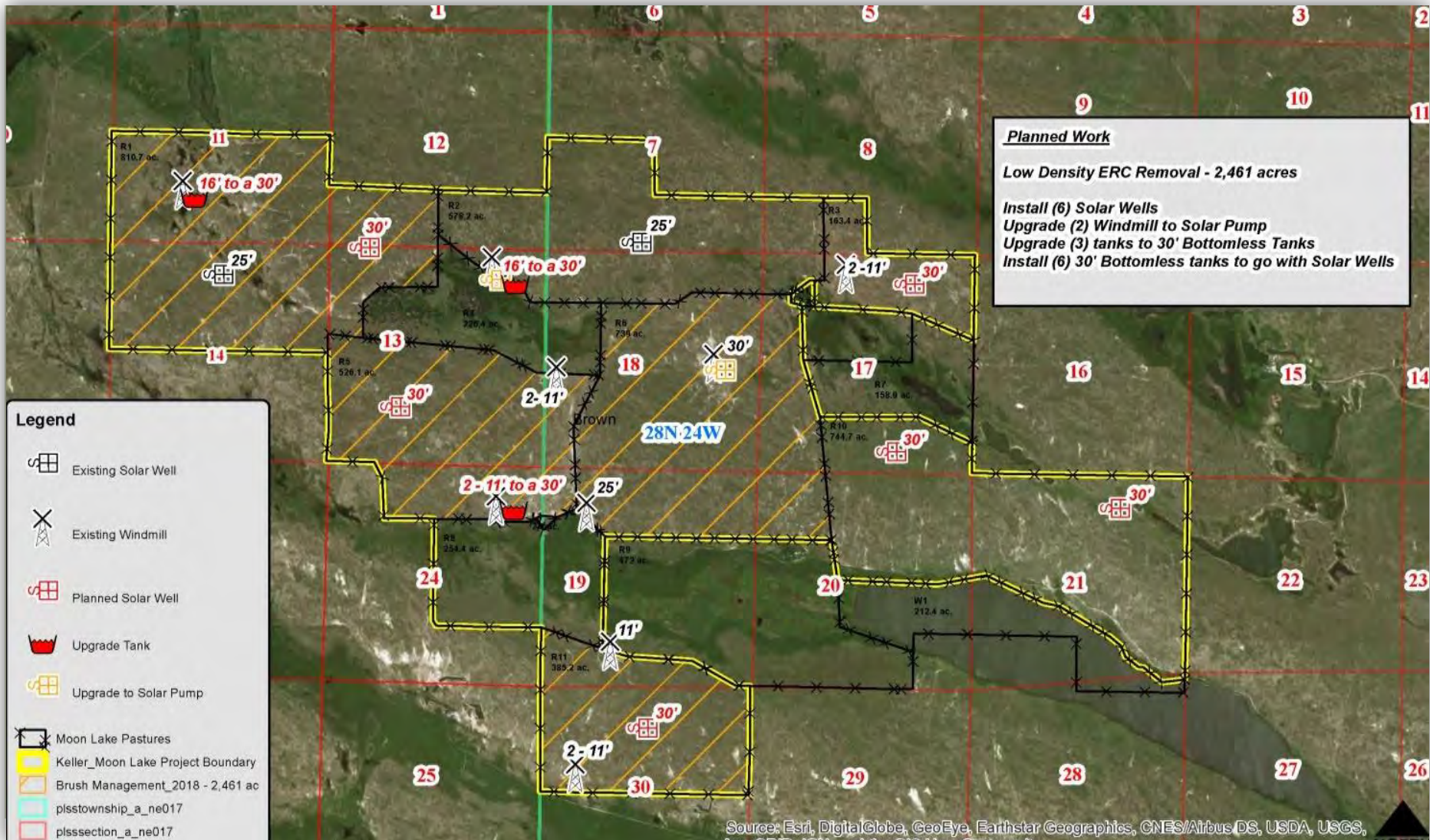
## EX 1





# GRAZING MANAGEMENT

## EX. 2





# HABITAT RESTORATION IN THE SANDHILLS

- 
- A wide-angle photograph of a grassy landscape, likely a wetland or meadow, with a winding waterway or stream in the middle ground. The foreground is filled with tall, dry grass. The background shows rolling hills under a blue sky with scattered white clouds.
- Grazing Management
  - **Eastern Red Cedar Encroachment**
  - Restoration of Wet Meadows
  - Lake Renovations

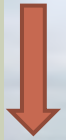


# INVASIVE EASTERN RED CEDAR CONTROL METHODS

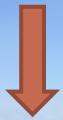




# EASTERN RED CEDAR ENCROACHMENT



**BEFORE**



**AFTER**





# EASTERN RED CEDAR ENCROACHMENT



# EASTERN RED CEDAR ENCROACHMENT





# HABITAT RESTORATION IN THE SANDHILLS

- 
- Grazing Management
  - Eastern Red Cedar Encroachment
  - **Restoration of Wet Meadows**
  - Lake Renovations



# WETLAND RESTORATION METHODS

**Texas Crossing**



**Notch Tube Culvert**



**Flex-i-mat Structure**



**Block Structure**





# WETLAND RESTORATION



# WETLAND RESTORATION





# WETLAND RESTORATION



07/20/2016

# HABITAT RESTORATION IN THE SANDHILLS

- 
- A wide-angle photograph of a grassy landscape, likely a wetland or meadow, with a small pond in the middle ground. The foreground is filled with tall, dry grass. The background shows rolling hills under a blue sky with scattered white clouds.
- **Grazing Management**
  - **Eastern Red Cedar Encroachment**
  - **Restoration of Wet Meadows**
  - **Lake Renovations**



# LAKE RENOVATIONS



Installation of Carp Structures





# LAKE RENOVATIONS

Application of  
Rotentone



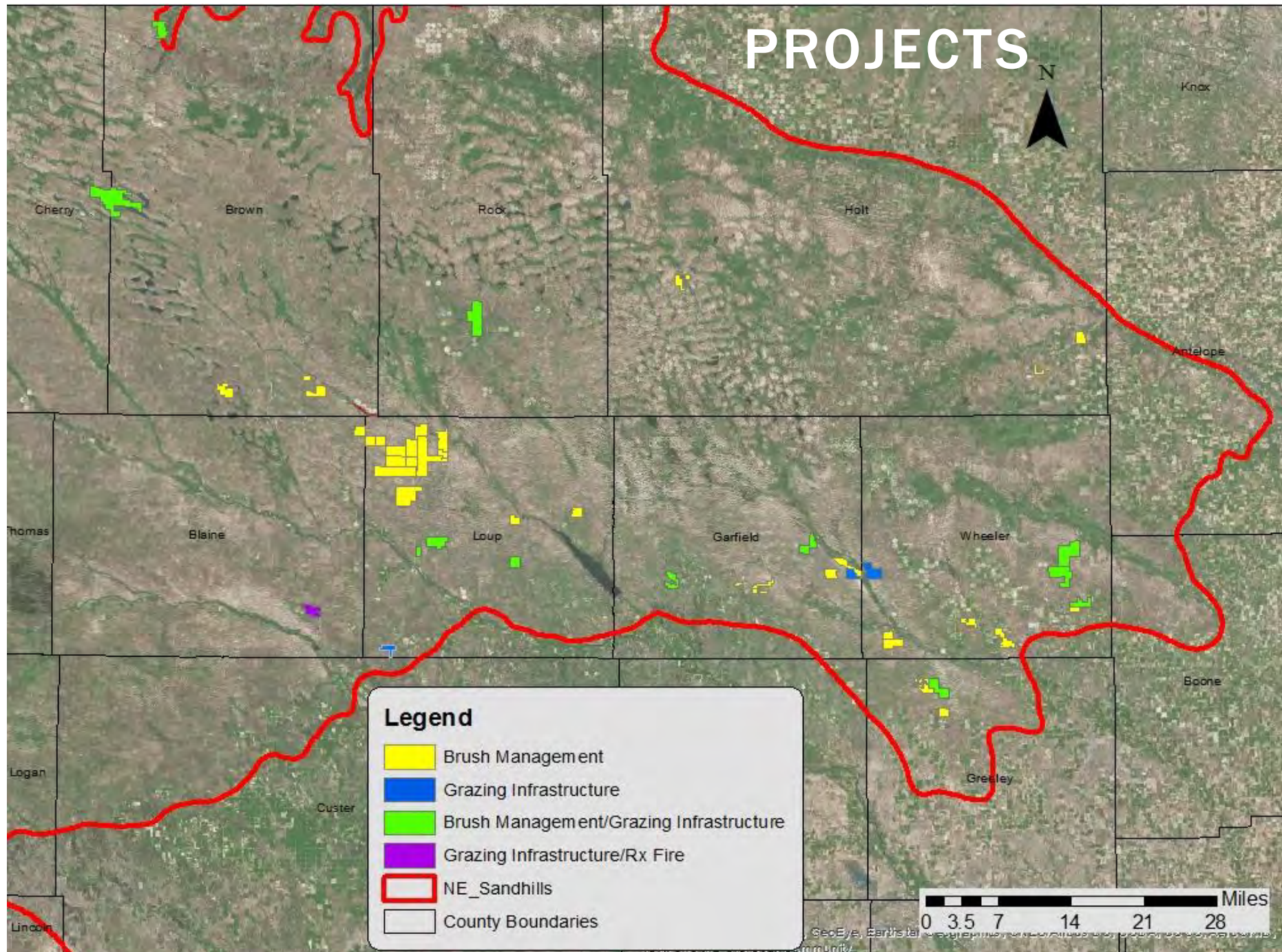


# LAKE RENOVATIONS



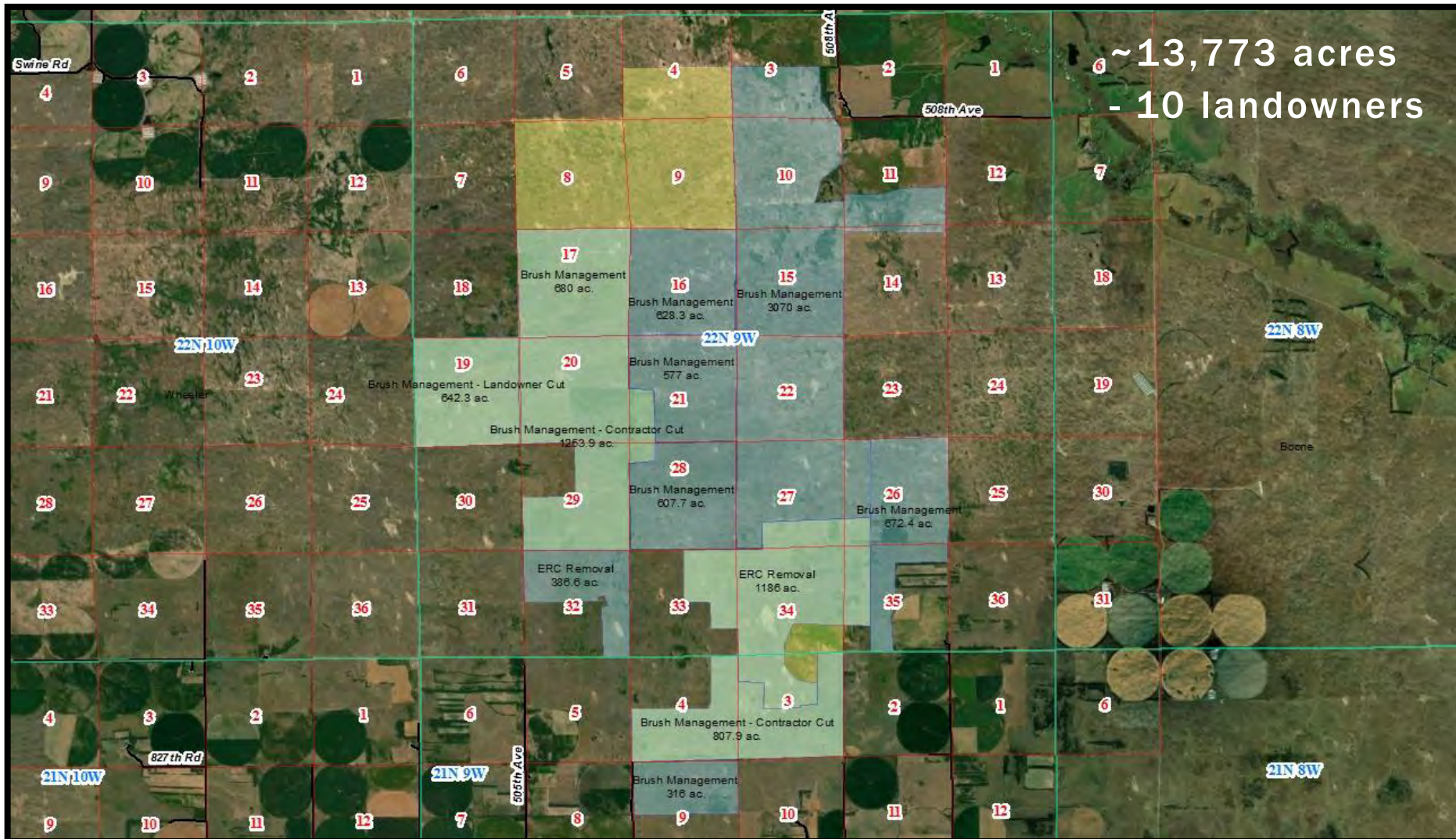


# PROJECTS





# BARTLETT COMPLEX





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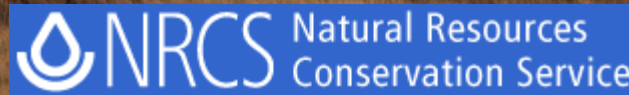


# PROGRAMS

- **Natural Resources Conservation Service**
  - Working Lands for Wildlife Initiative (WLFW)
  - State Wildlife Initiative (WIN)
  - Local Funds
- **Sandhills Task Force**
- **Nebraska Game and Parks Commission**
  - Pittman Robertson Greater Prairie Chicken Grant
  - WILD NE
- **US Fish and Wildlife – Partners Program**



# CONSERVATION PARTNERS





# FINAL THOUGHTS

- Large intact grassland of the Northern Great Plains that has unique grassland, wetland, and wildlife communities
- Threats to the Sandhills include invasive eastern red cedar, loss of functional values of wetlands, and improper grazing
- Conservation partners and landowners collaborate to address these resource concerns



# QUESTIONS?

