

Identification and Assessment of Windbreaks in Smoky hill region, Kansas and Colorado using Remote Sensing, GIS and Field Survey Techniques

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Major Goals

1. Identify the location of windbreaks
2. Calculate the area covered by windbreaks
3. Assess the primary function of the windbreak in the ground (selected sample)
4. Assess the windbreaks condition in the ground (selected sample)
5. Assign the final condition and primary function to individual windbreak based on the ground information combined with information generated from remote sensing and GIS



Data

National Agriculture Imagery Program (NAIP)

- 2010/2011 4 band color aerial imagery tiled by county in 1-meter resolution
- The 2010/2011 NAIP imagery was collected during the growing season during the months of June and July



Study area

Smoky Hill Region of Kansas and Colorado

7 Kansas Counties

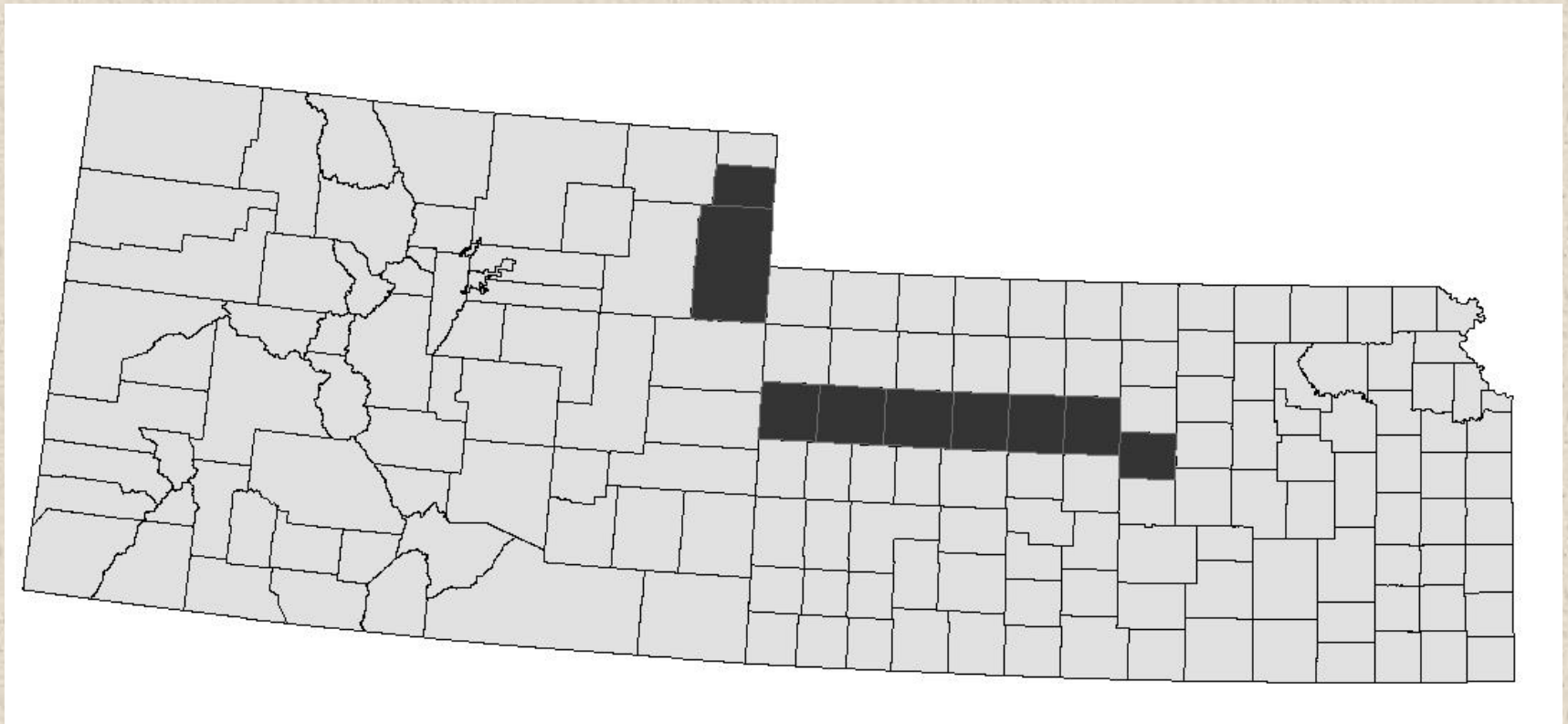
1. Ellsworth
2. Russell
3. Ellis
4. Trego
5. Gove
6. Logan
7. Wallace

2 Colorado Counties

1. Phillips
2. Yuma

Study area

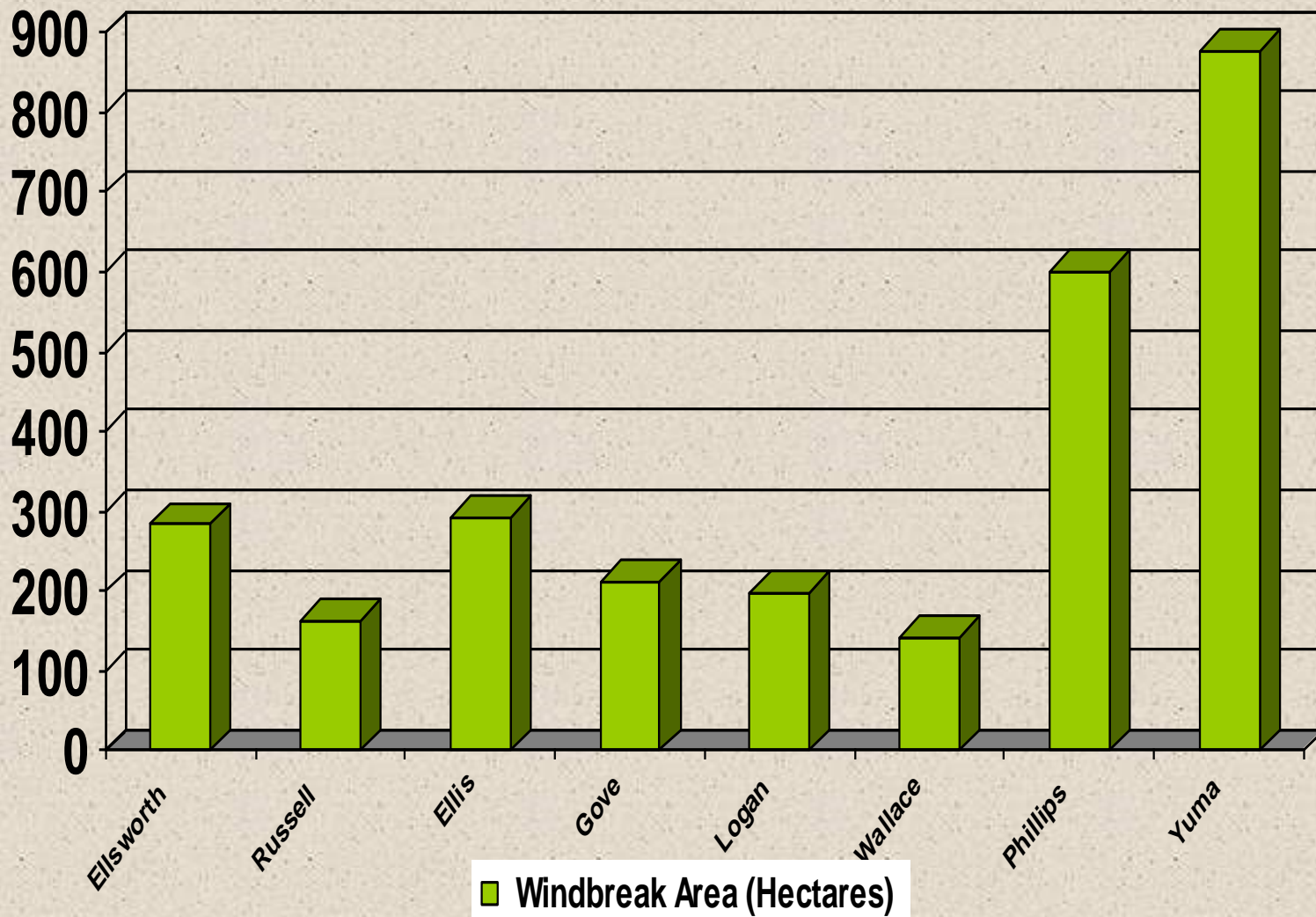
Smoky hill region of Kansas and Colorado



Summary of Windbreaks in Smoky Hill Region Kansas and Colorado

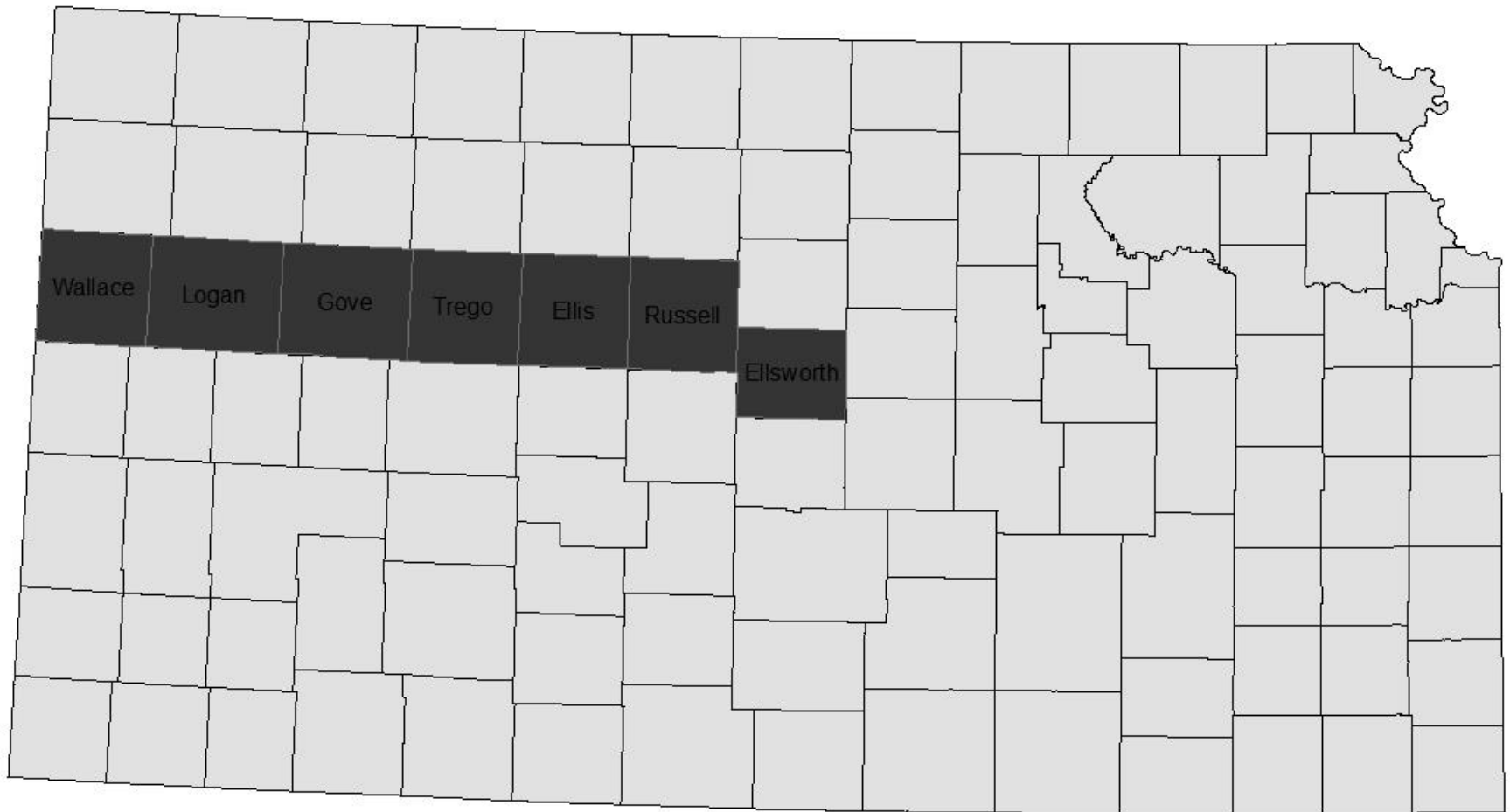
County	Windbreaks Number	Acres	Hectares
Ellsworth	512	701	284
Russell	287	404.225	163.584
Ellis	769	724.403	293.155
Trego	504	473.483	191.612
Gove	647	522.774	211.559
Logan	462	488.468	197.676
Wallace	341	349.141	141.292
Phillips	924	1482.006	599.746
Yuma	2496	2166.426	876.722
Total	6942	7311.926	2959.346

Area covered by windbreaks in Smoky Hill Region Kansas and Colorado

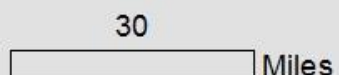
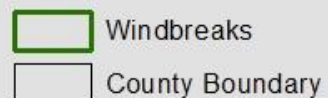
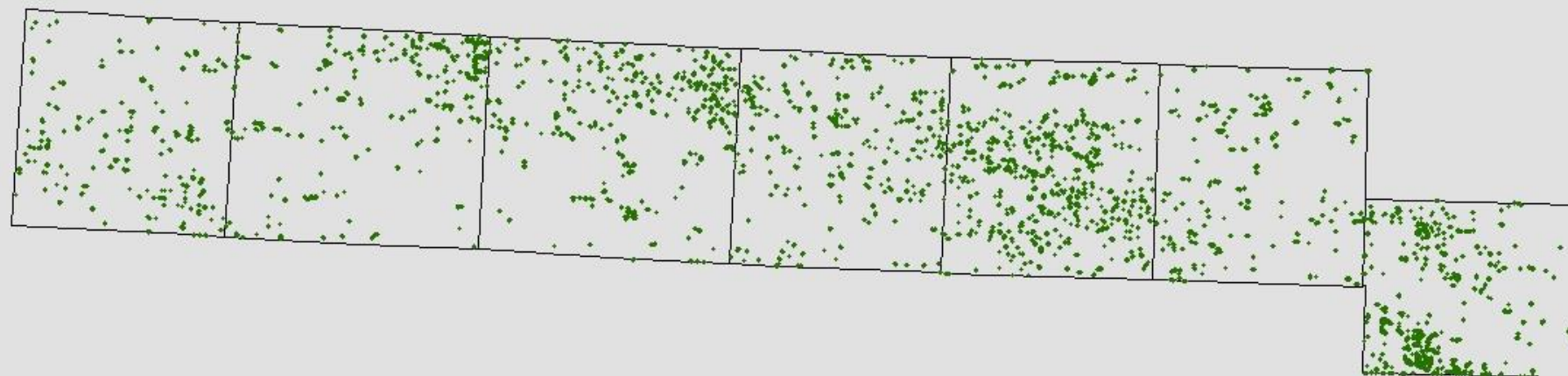
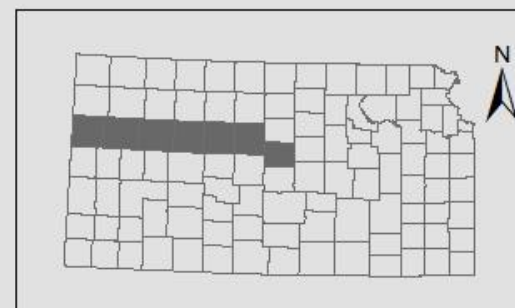


Study area

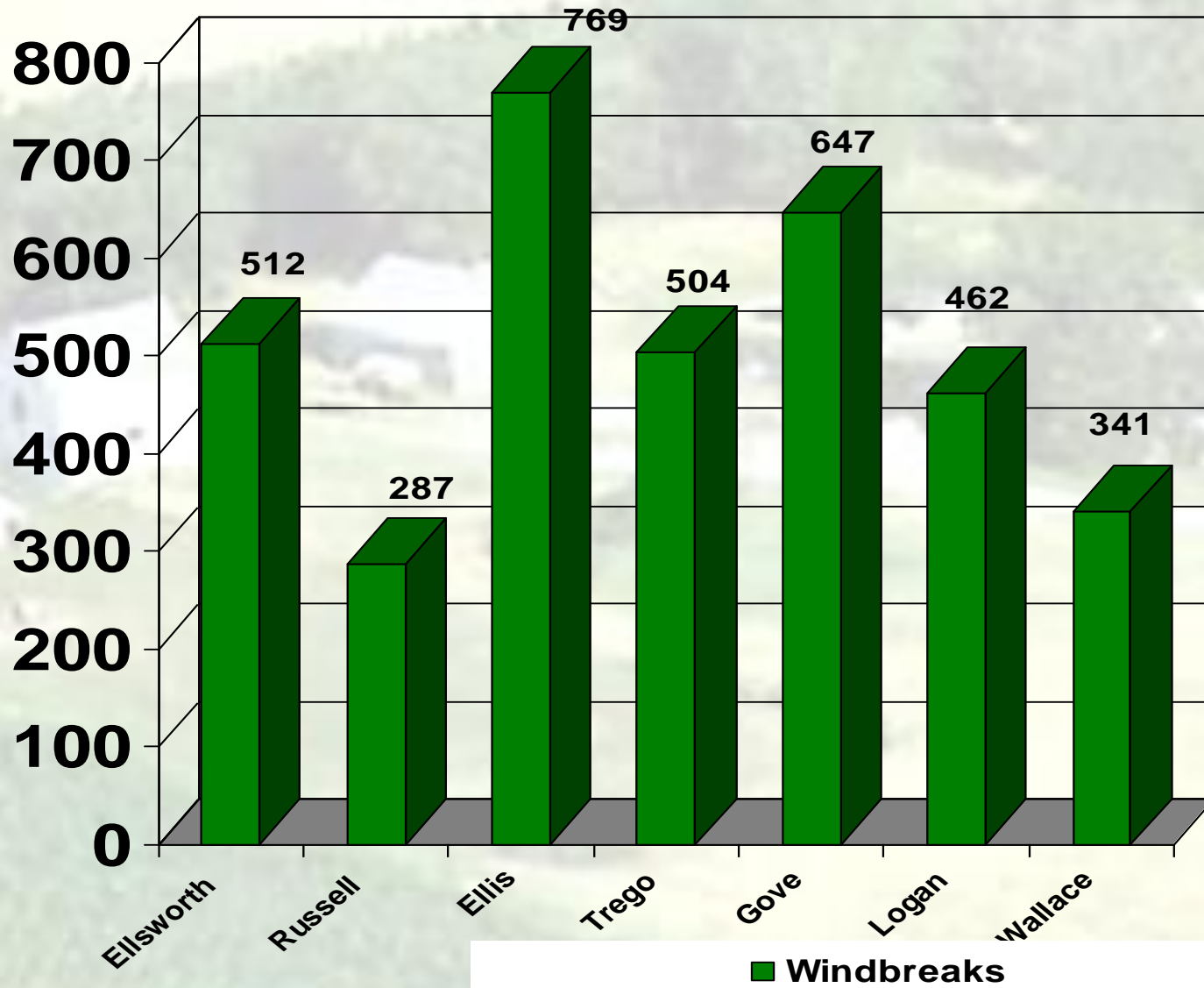
Smoky hill region: Study Counties in Kansas



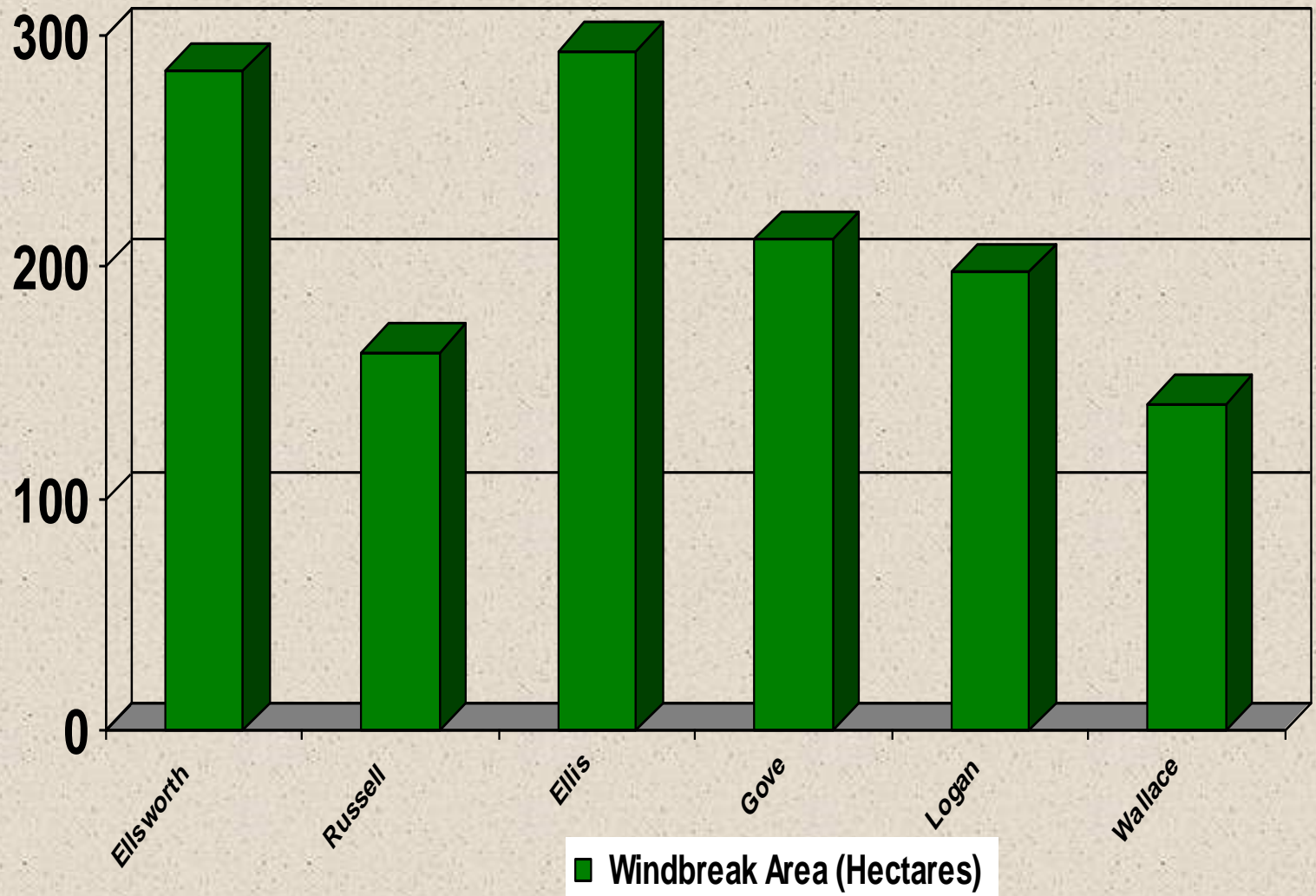
Windbreaks Location in Smoky Hill Region, Kansas



Number of Windbreaks in Smoky Hill Region Kansas



Area covered by windbreaks in Smoky Hill Region Kansas





Russell County


Windbreaks in Russell County, Kansas

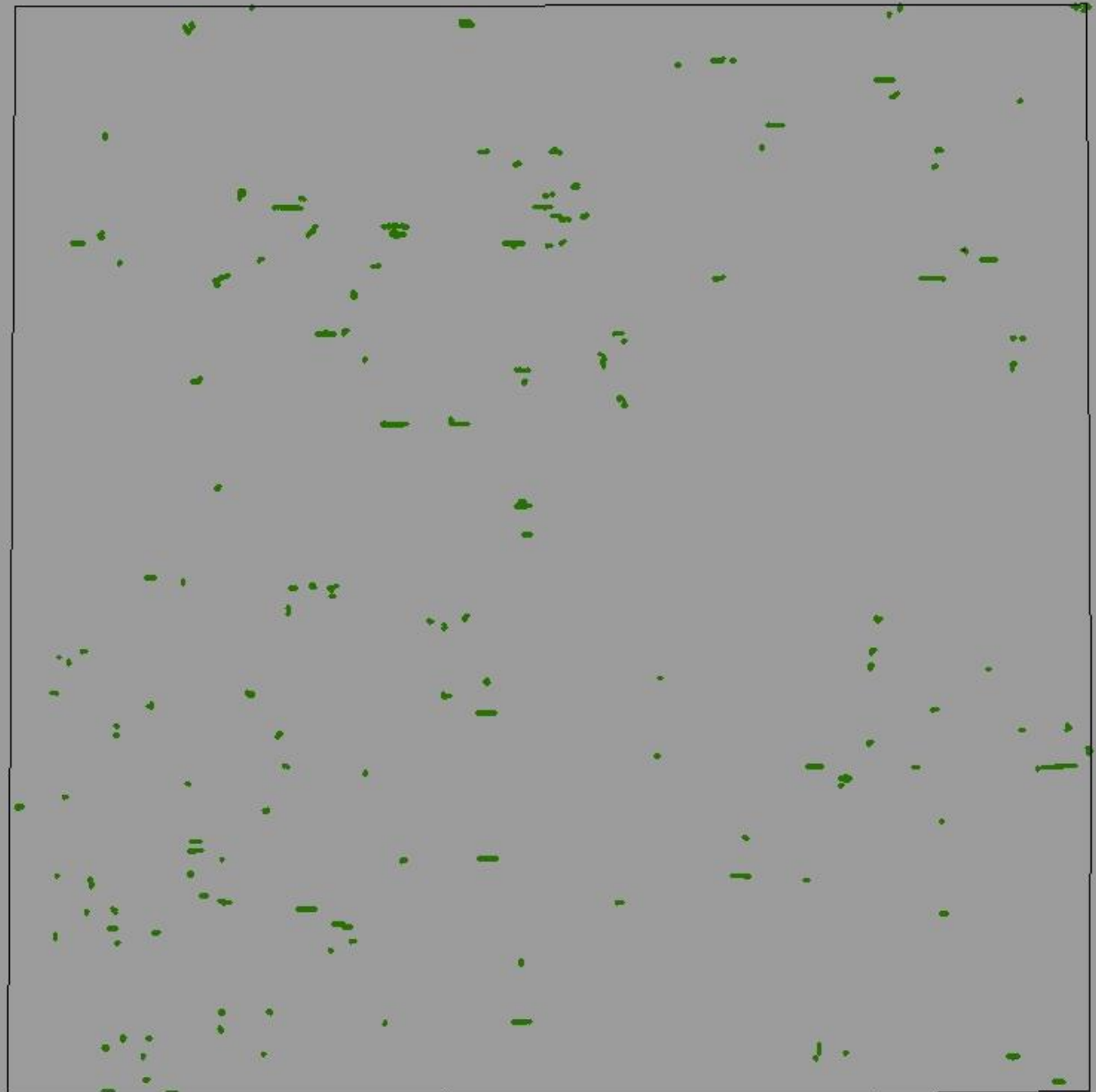


Windbreaks in Russell County, Kansas



 Windbreaks
 County Boundary

4
 Miles



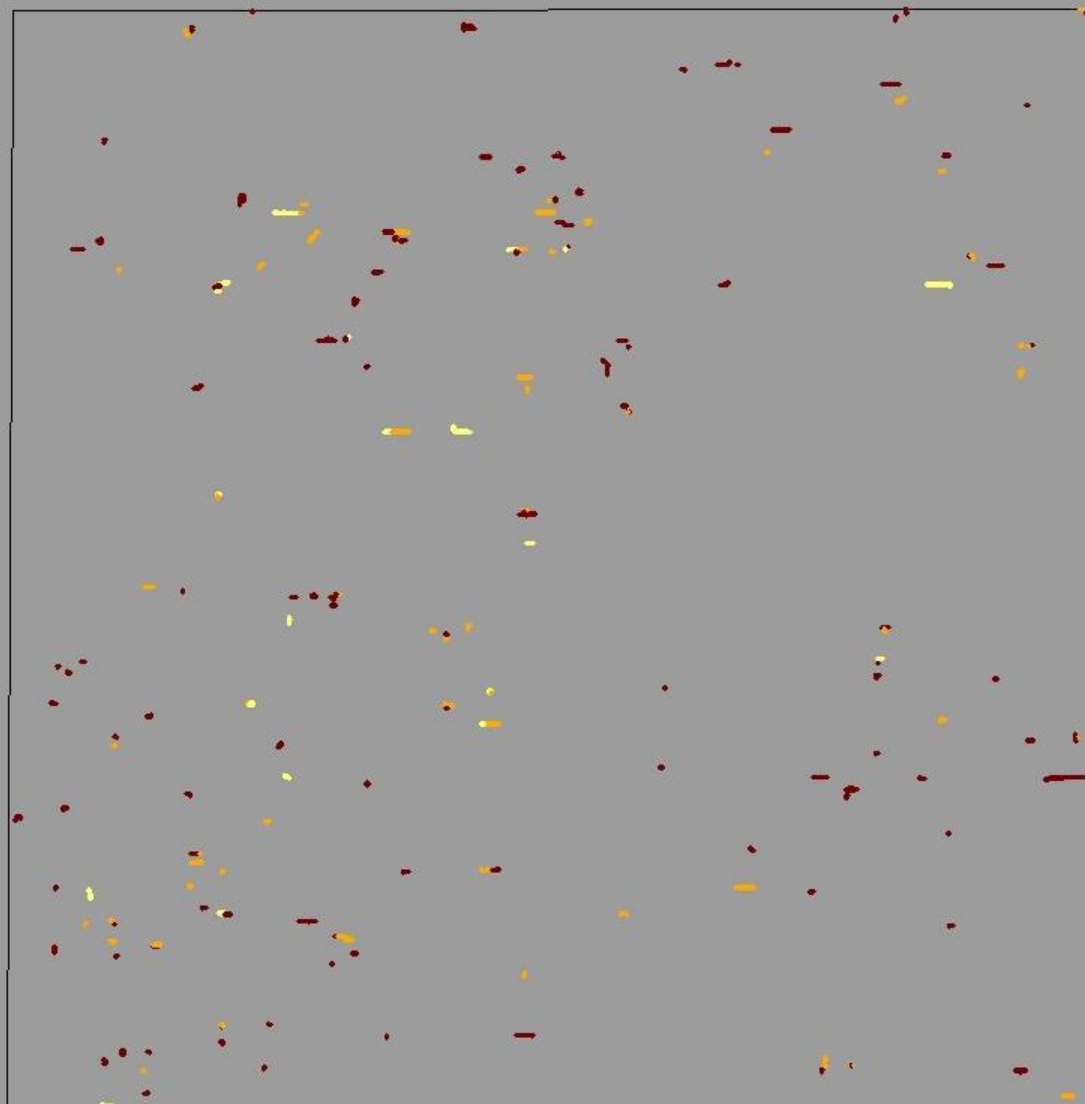
Windbreak Condition in Russell County, Kansas

Windbreak Condition

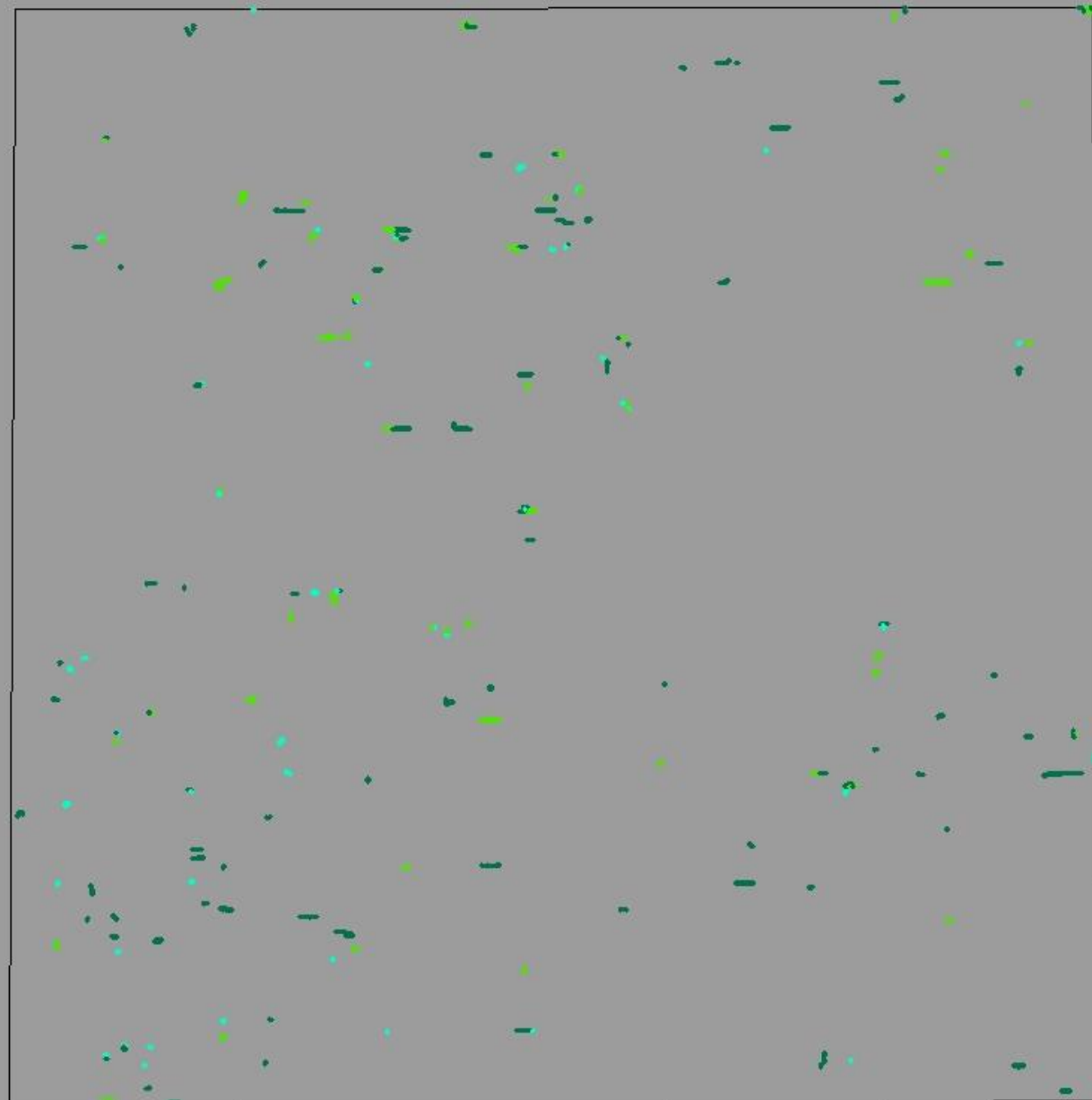
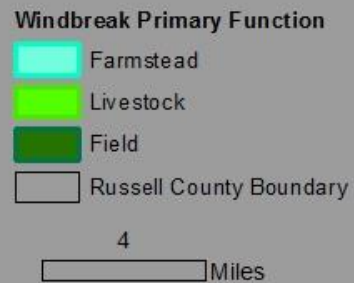
- Poor
- Fair
- Good
- Russell County Boundary

4

Miles



Windbreak Primary Function in Russell County, Kansas



Ellis County

Windbreaks in Ellis County, Kansas



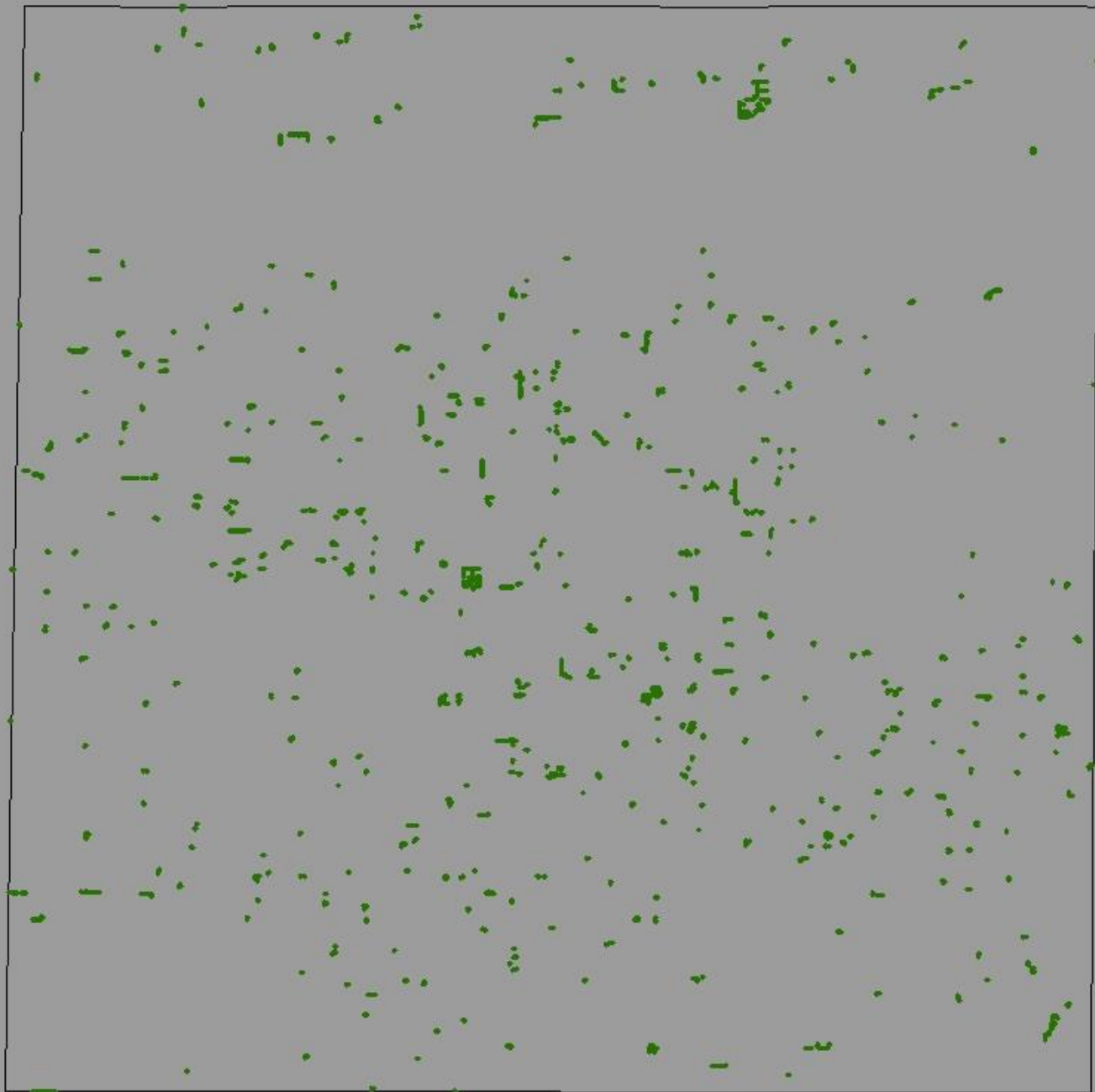
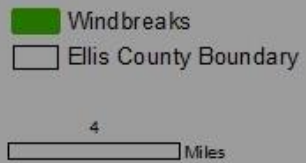
- Windbreaks
- Ellis County Boundary

2010NAIP image

5

Miles


Windbreaks in Ellis County, Kansas



Windbreaks Condition in Ellis County, Kansas

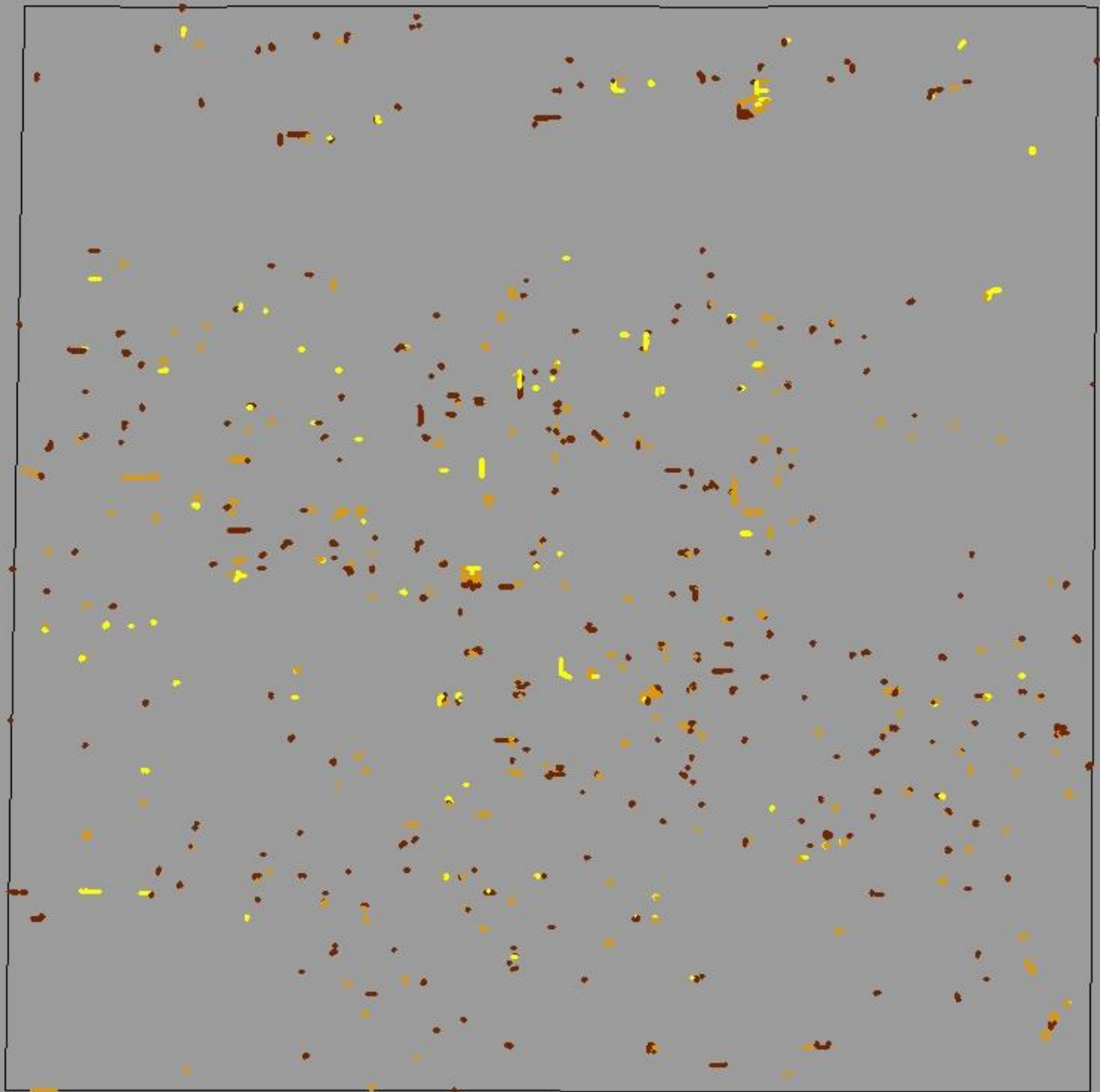


Windbreak Condition

-  Poor
-  Fair
-  Good
-  Ellis County Boundary

4

Miles



Windbreaks Primary Function in Ellis County, Kansas



Windbreak Primary Function

Farmstead

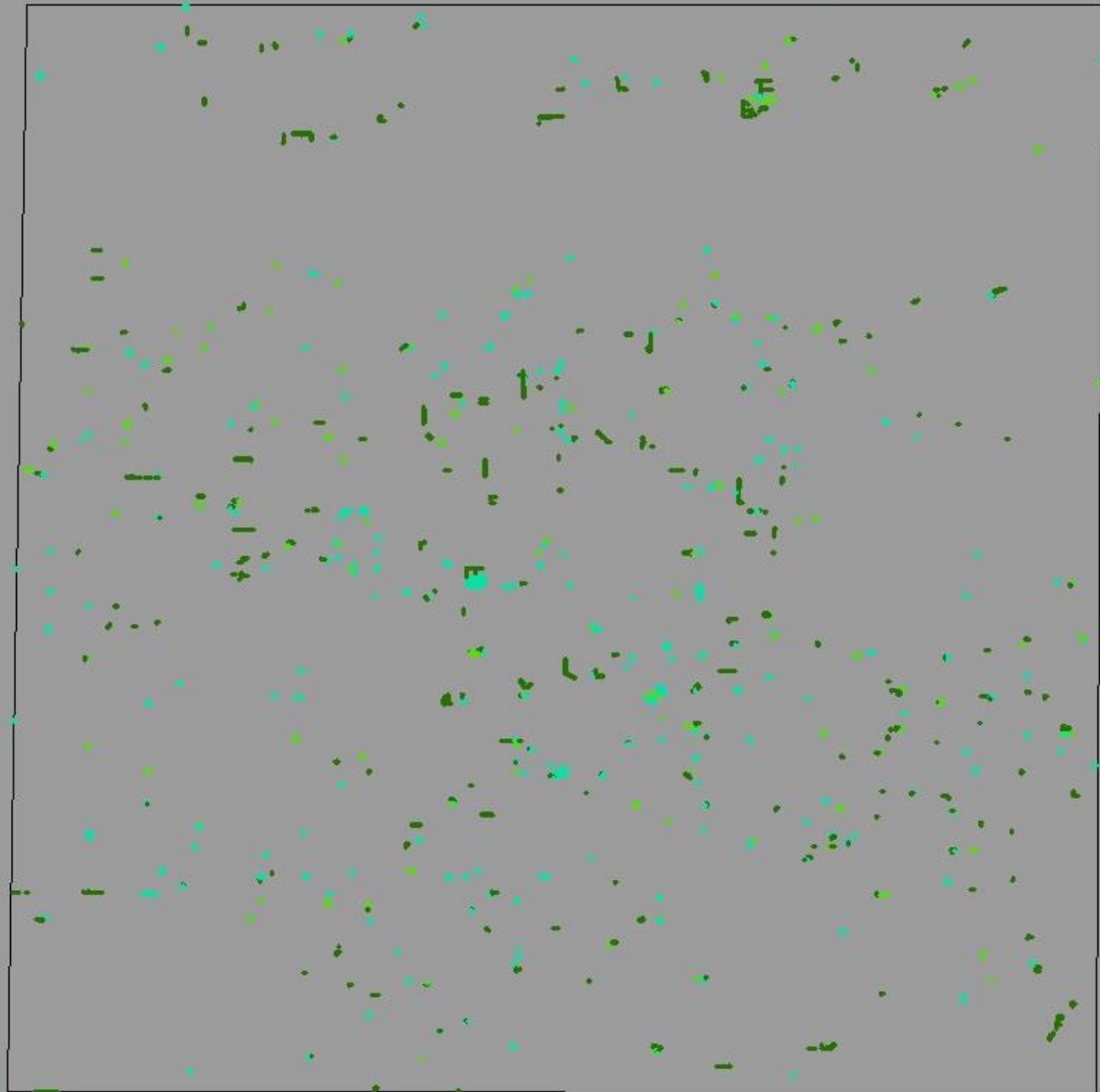
Livestock

Field

Ellis County Boundary

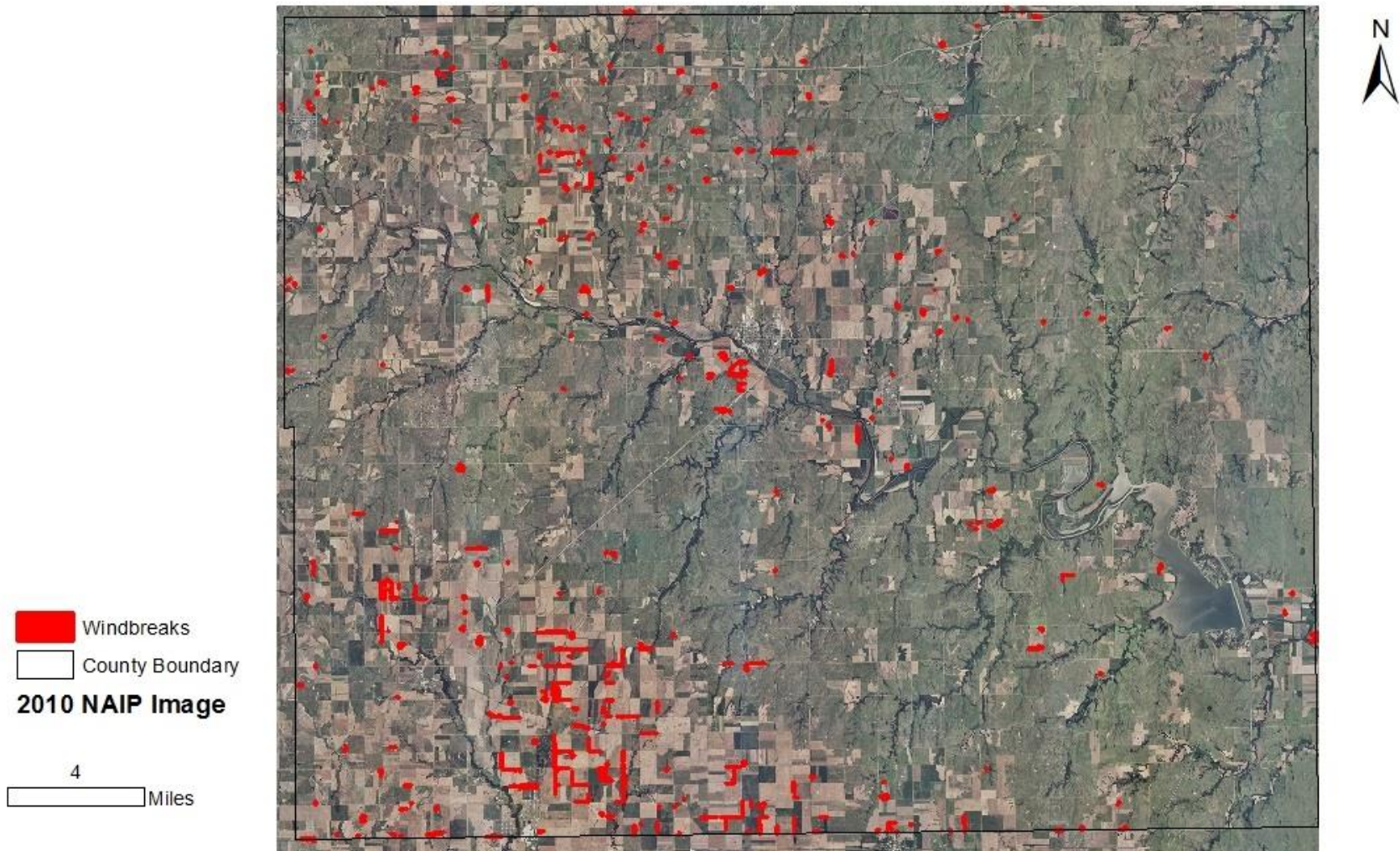
4

Miles

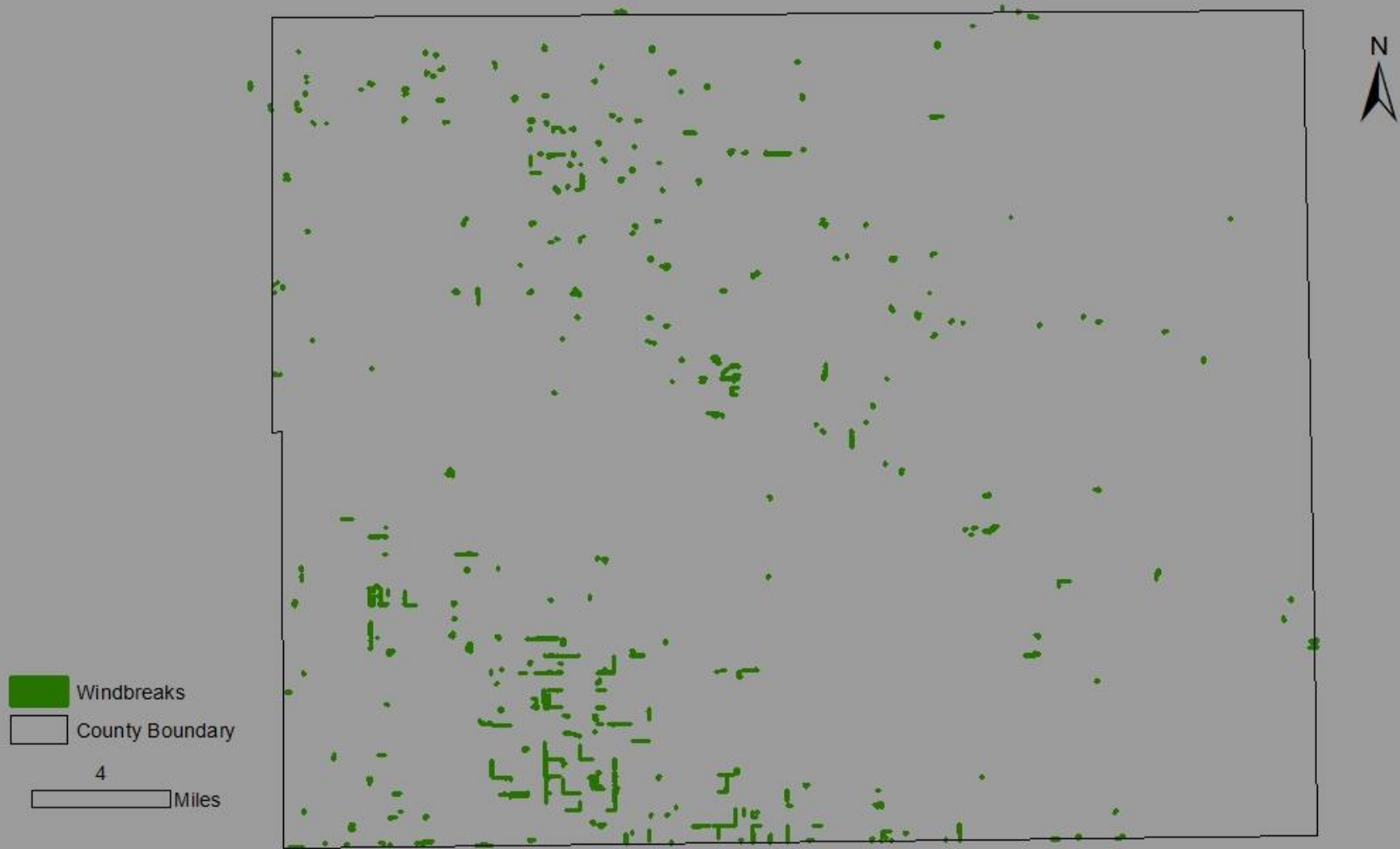


Ellsworth County

Windbreaks in Ellsworth County, Kansas

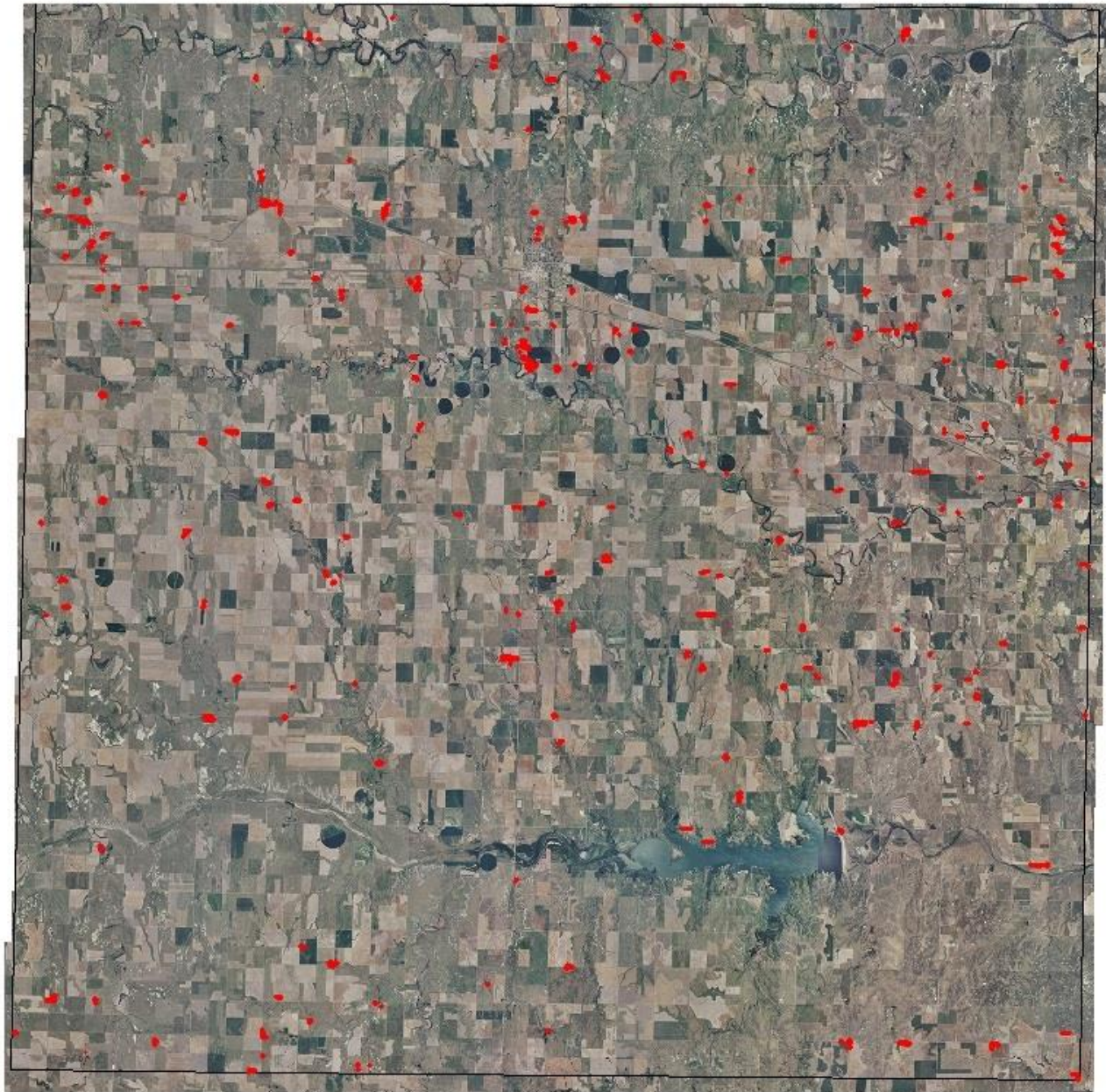


Windbreaks in Ellsworth County, Kansas

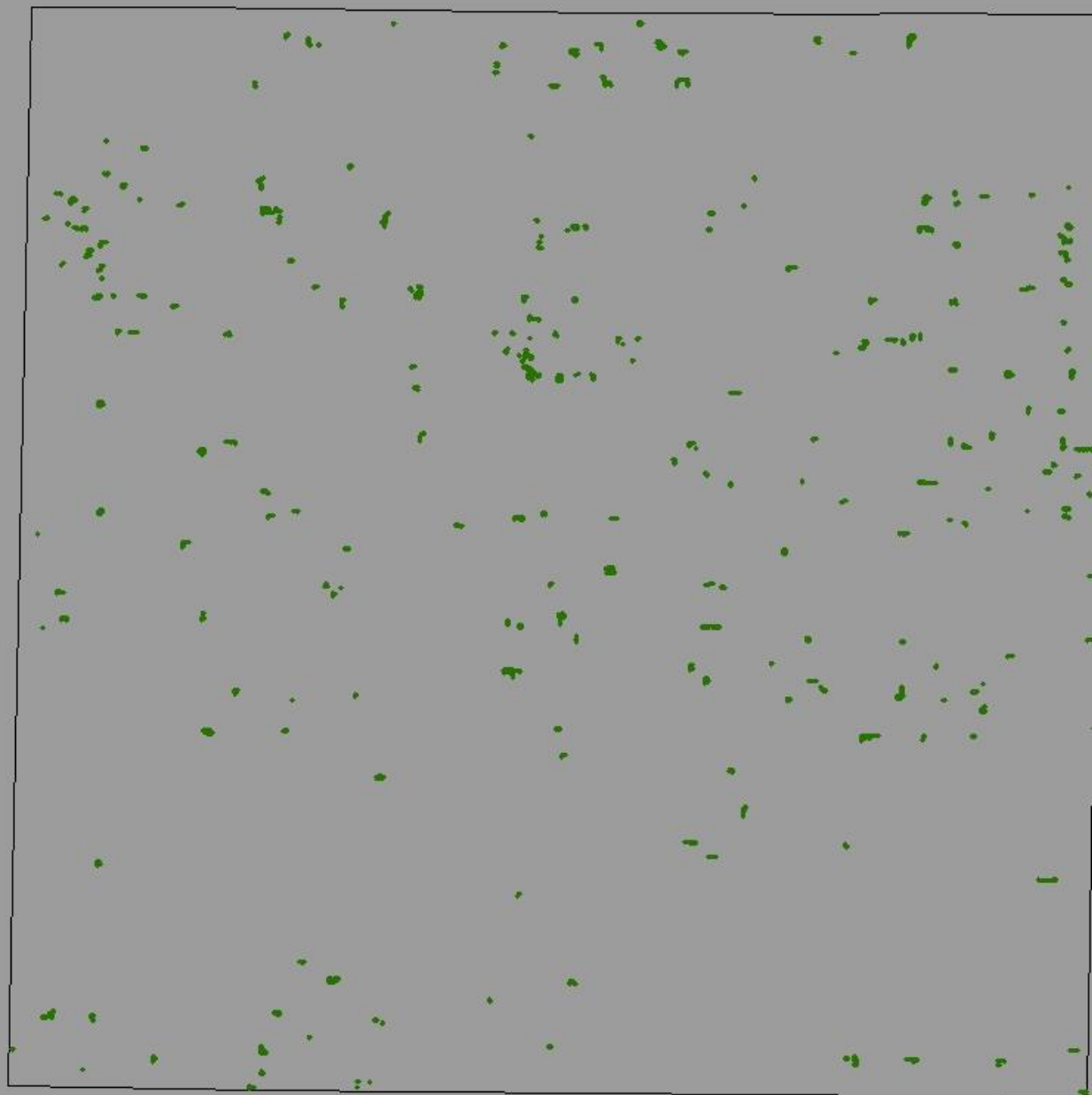
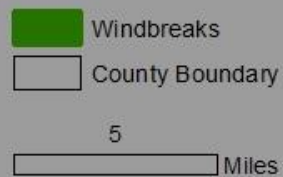


Trego County

Windbreaks in Trego County, Kansas



Windbreaks in Trego County, Kansas

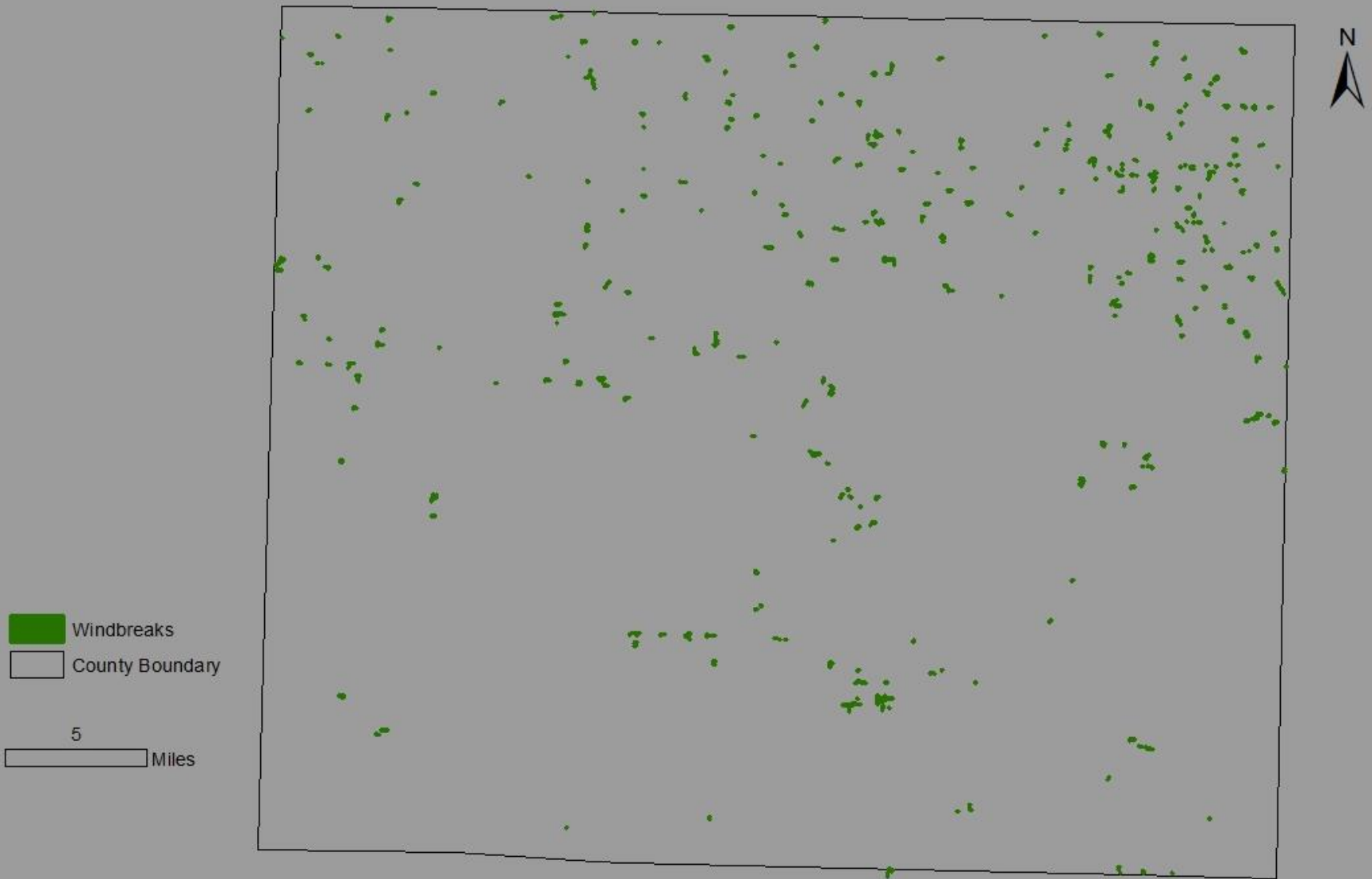


Gove County

Windbreaks in Gove County, Kansas





Windbreaks in Gove County, Kansas




Logan County

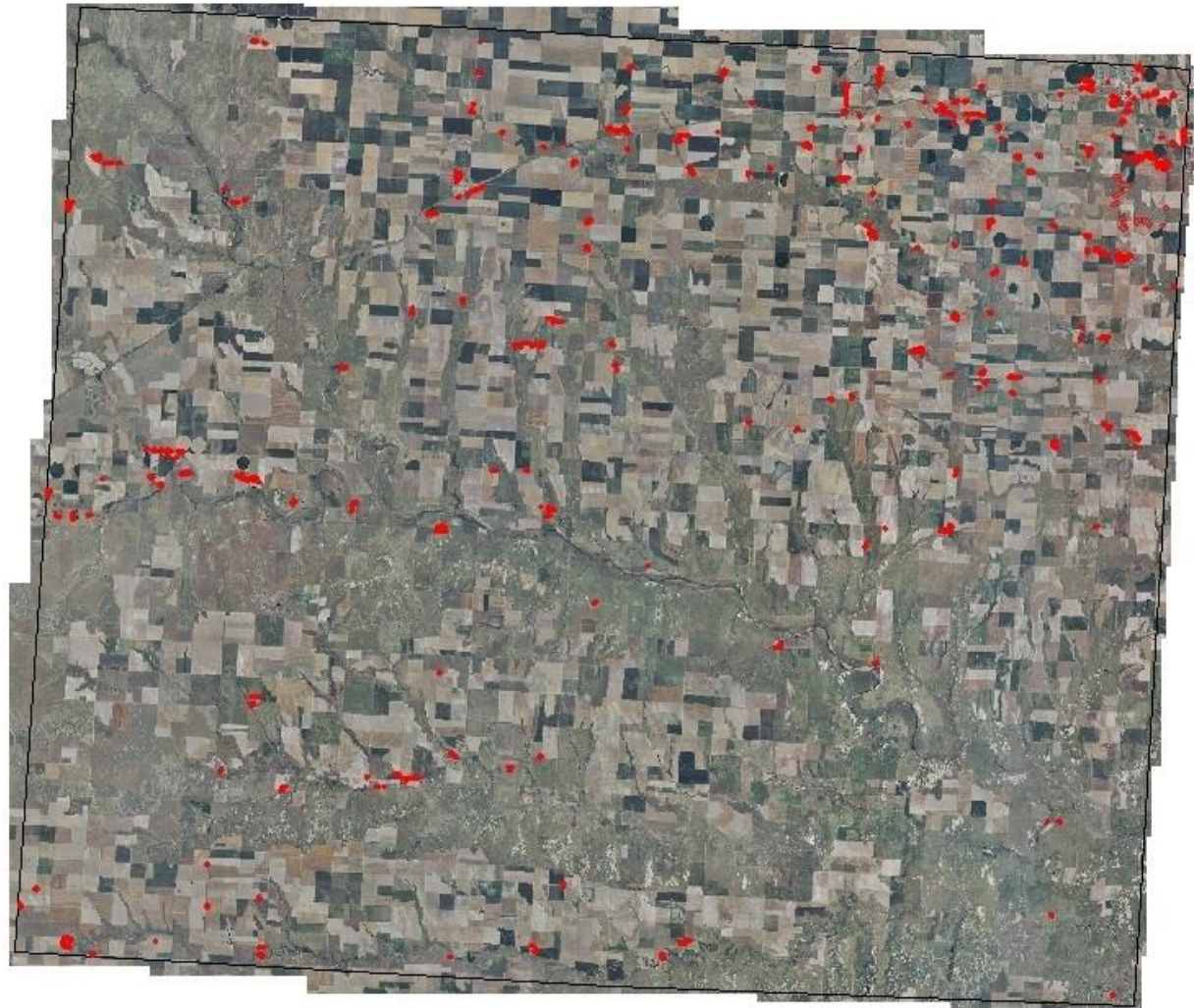
Windbreaks in Logan County, Kansas



-  Windbreaks
-  County Boundary

2010 NAIP Image

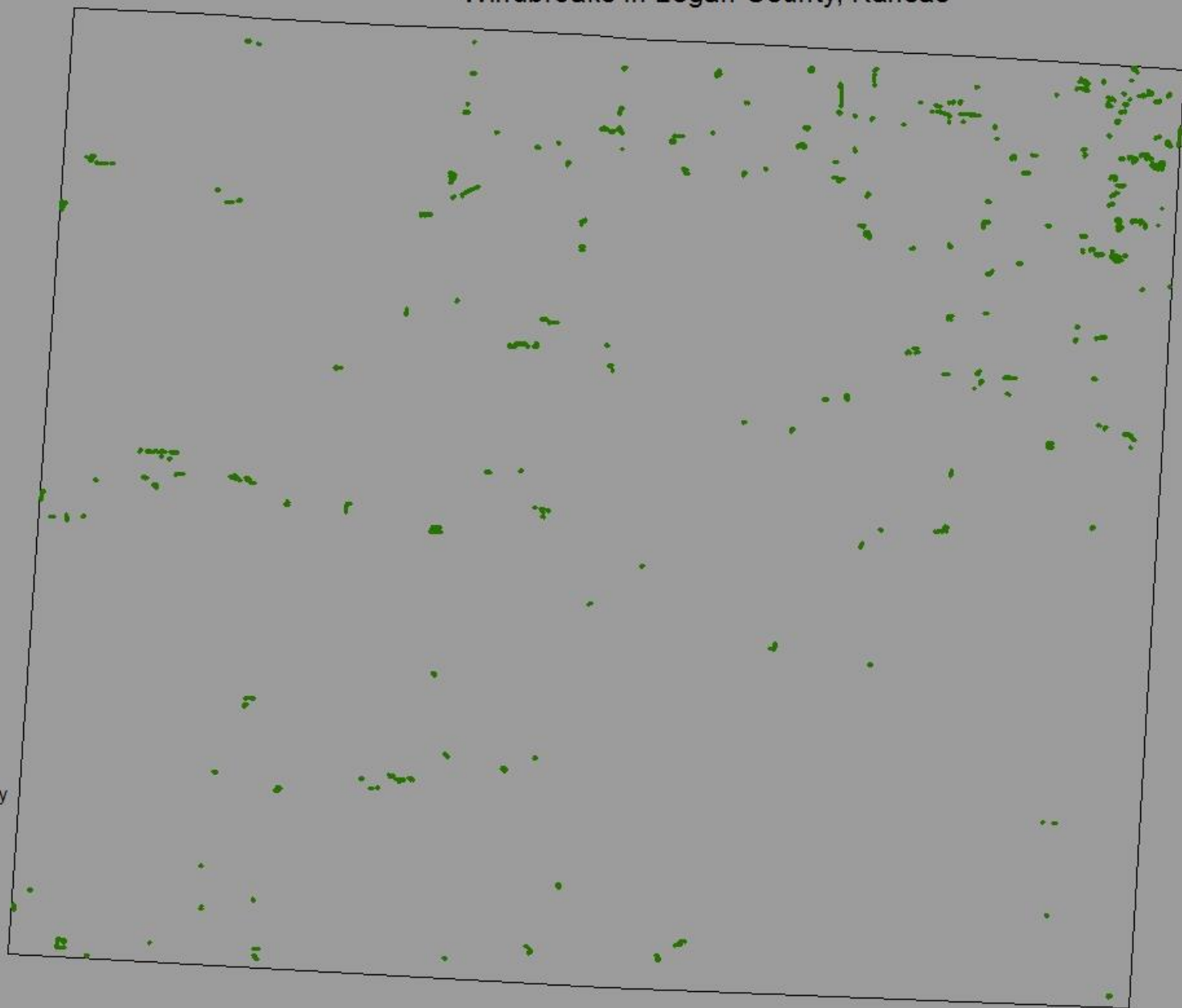
5
 Miles



Windbreaks in Logan County, Kansas

Windbreaks
County Boundary

4
Miles



Wallace County

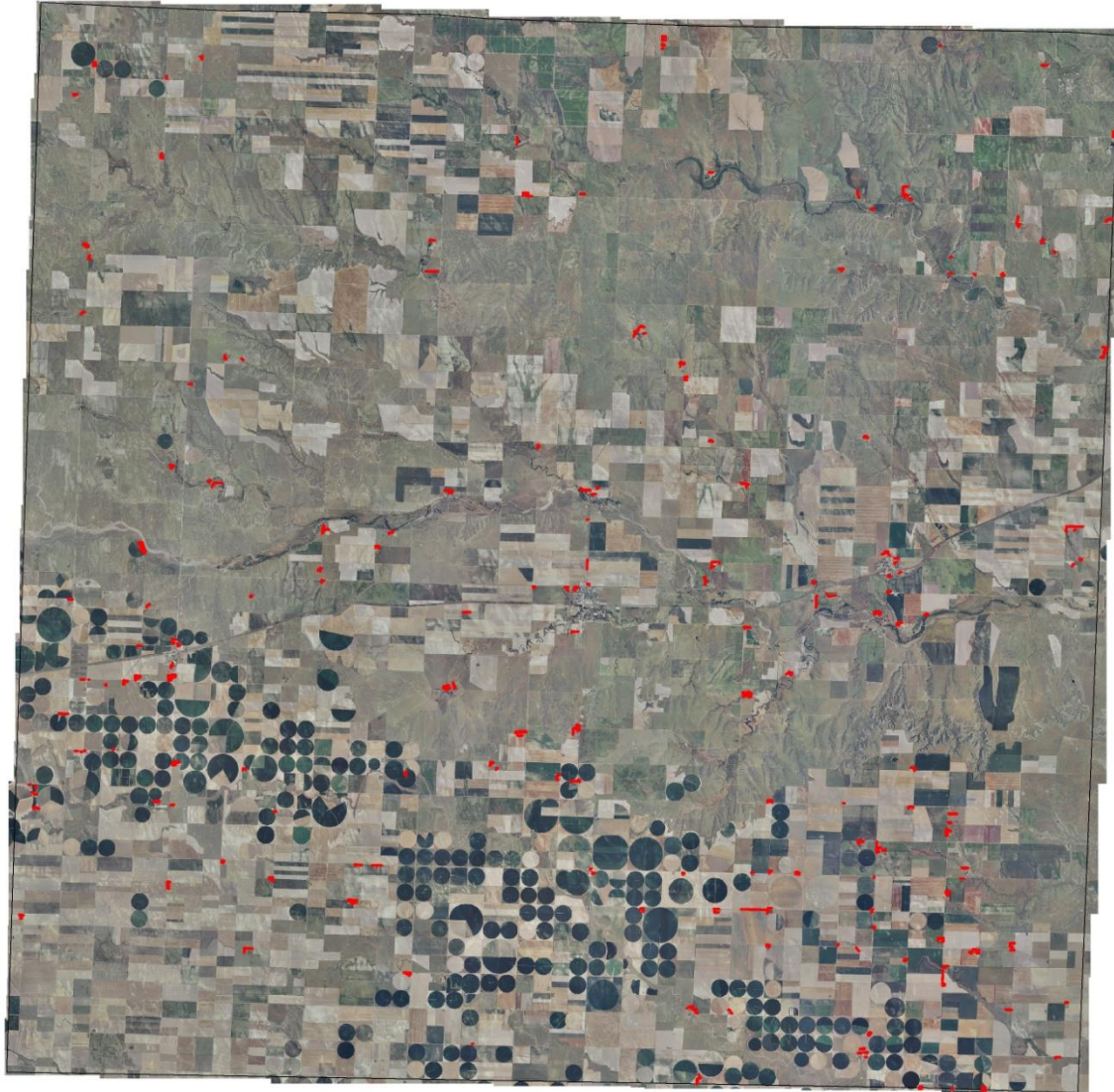
Location of windbreaks Wallace County, Kansas



 Windbreaks
 County Boundary
NAIP Image

7

Miles



Windbreaks in Wallace County, Kansas

