

Dear Rep. Sharon Schwartz and the Special Committee on Agriculture and Natural Resources:

Old World Bluestems (Caucasian and yellow bluestems) pose a serious threat to Kansas' native rangelands; both threaten the economic and ecological viability of places like the Flint Hills and Gyp/Red Hills. OWBs are warm-season perennial grasses that are less palatable and nutritious to cattle than native warm-season grasses, and once established are difficult to control. OWBs also release "inhibitory" biochemicals that affect the development and growth of neighboring plants. Both Caucasian and yellow bluestems are considered *transformer species*, plants that can change the character, condition, form or nature of ecosystems over a substantial area relative to extent of ecosystem. Attached is a PowerPoint I thought might be helpful for the committee. Please don't hesitate to contact me if you would like additional information regarding this invasive threat.

Regards, Brian Obermeyer

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Attachment 15  
SCANR 10-22-15



# Old World Bluestems in Kansas Rangelands



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15-2



15-3

Invasive species harm ecological systems, damage economies and threaten human well-being. The estimated damage from invasive species worldwide totals more than \$1.4 trillion.



**Sericea Lespedeza**

*Kansas examples*



**Old World Bluestems**



# Management of non-natives begins with some basic information

4-51

- Where did they come?
- When were they introduced?
- Life history characteristics?
- Where do they grow?
- Are they invasive?
- Can they persist and spread?
- Which pose the greatest threats to ecological systems and human activities?

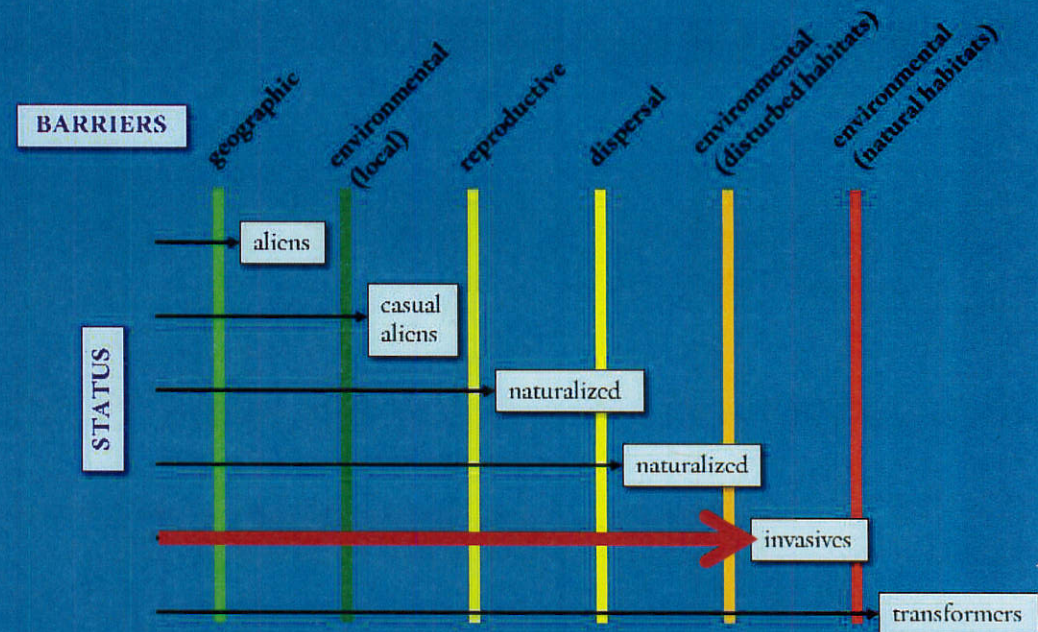


Study of Weeds – Albrecht Dürer (1503)



- Have overcome geographic, environmental, reproductive and dispersal barriers
- Invade disturbed, semi-natural and, sometimes, natural habitats
- Produce offspring, often in large numbers, at large distances from site(s) of introduction

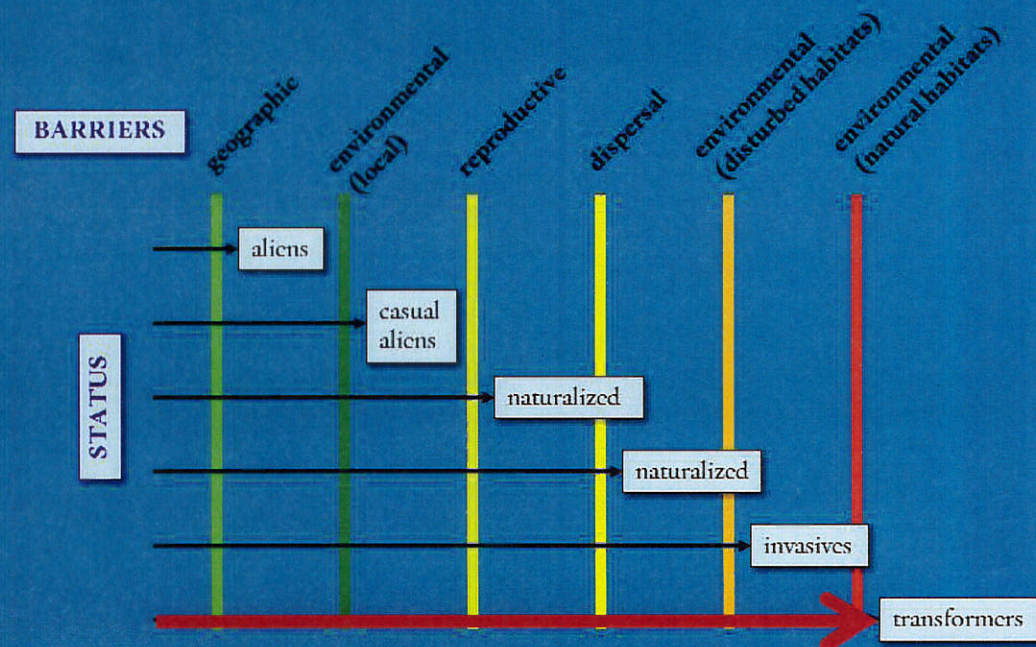
*28.7% of KS non-natives*





- Have overcome geographic, environmental, reproductive and dispersal barriers
- Able to invade and even dominate disturbed, semi-natural and natural habitats
- Can change the character, condition, form or nature of ecosystems over a substantial area relative to extent of ecosystem

*5.3% of KS non-natives*

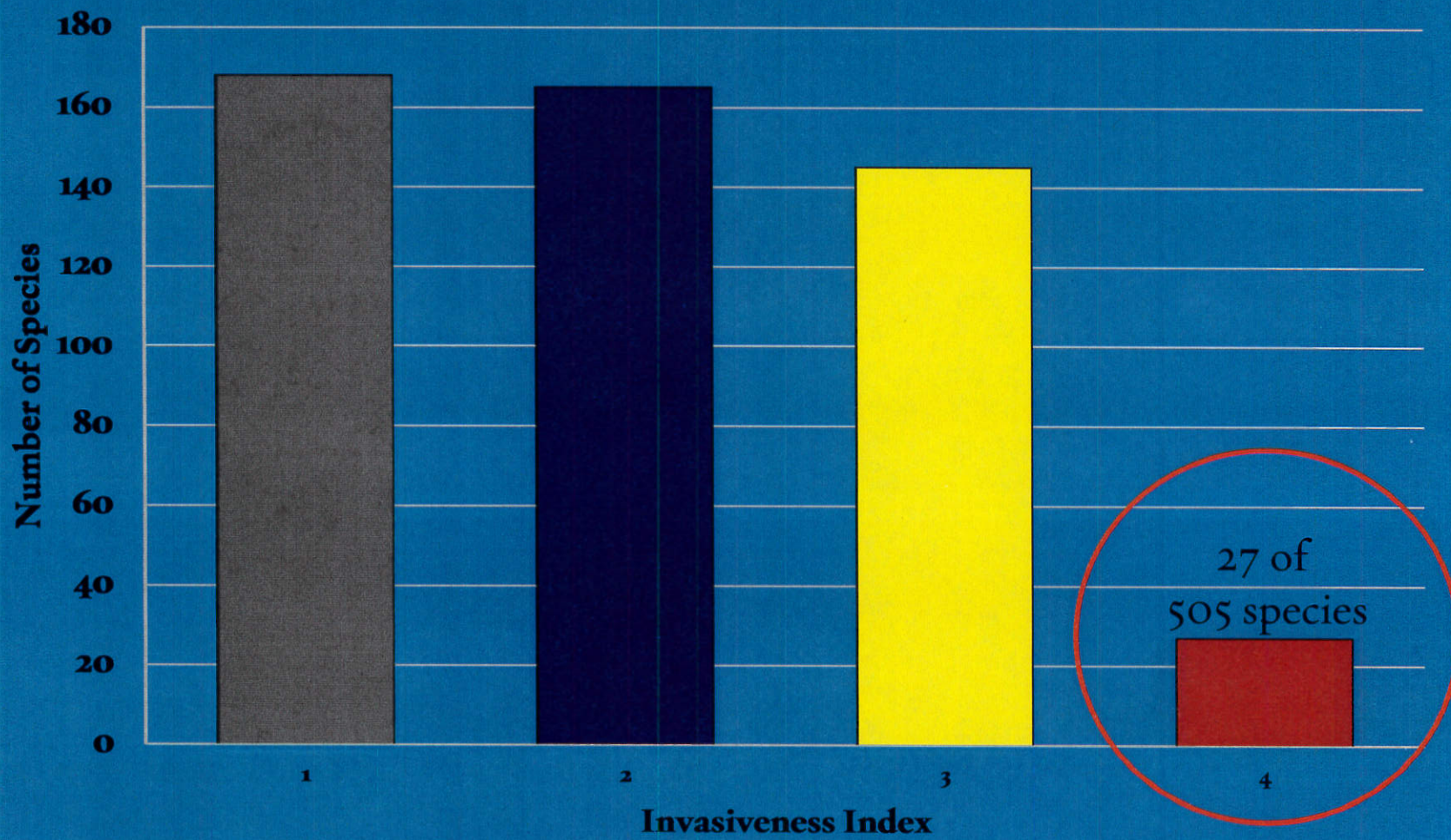






# Estimated invasiveness of over 500 non-native species documented in Kansas

15-7



1 = casual aliens; 2 = naturalized; 3 = invasive; 4 = transformers





15-8  
8-91

### **Old World Bluestems (OWB):**

Caucasian and yellow bluestems are warm-season perennial grasses brought to the United States in the early 1900s for use as forage and to control erosion.

These grasses are less palatable and nutritious to cattle than native warm-season grasses, and once established are difficult to control. Both are considered *Transformer* species.





# Multiple Modes of Reproduction

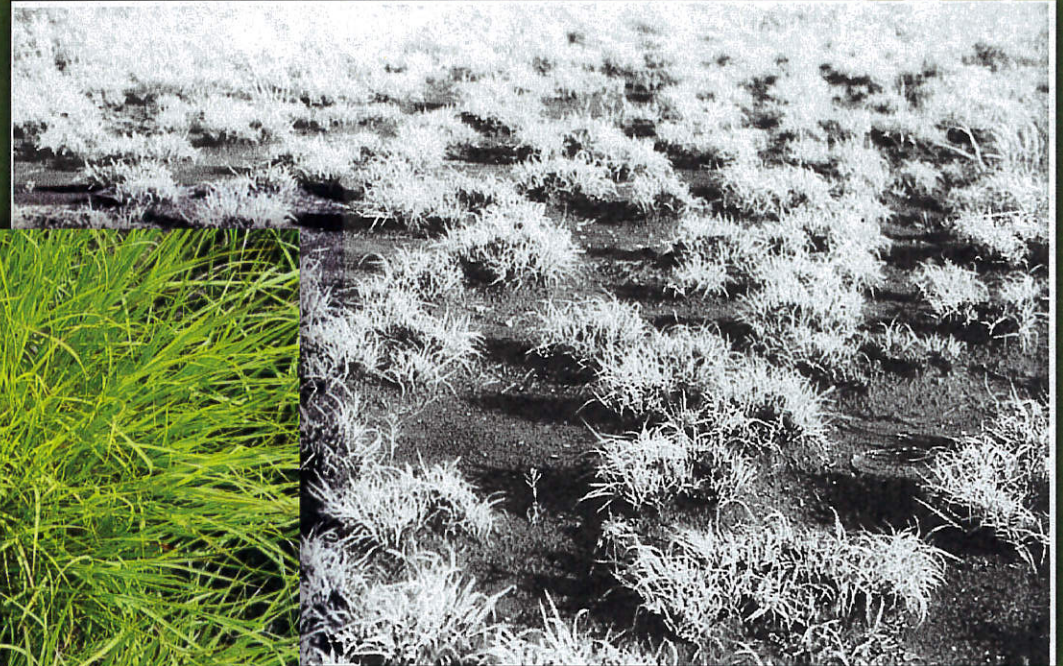


Rhizomes  
Stolons  
Seed production



# OWB's produce biochemicals that inhibit competition

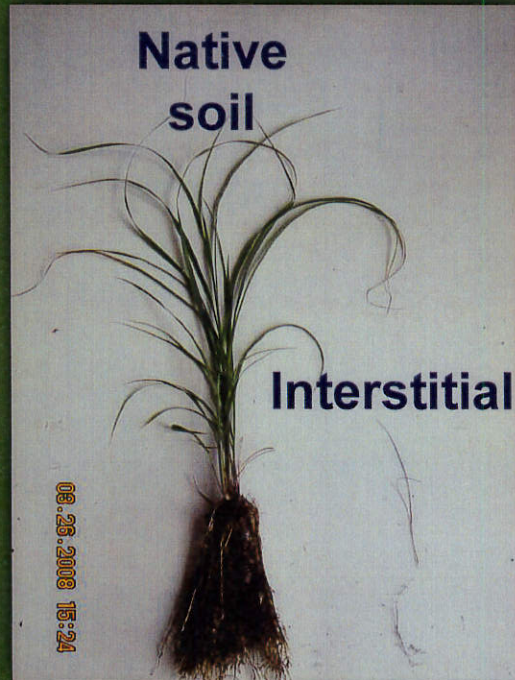
Interstitial areas:



**Allelopathy** refers to the chemical inhibition of one species by another. The "inhibitory" chemical is released into the environment where it affects the development and growth of neighboring plants.



# Soil Alterations

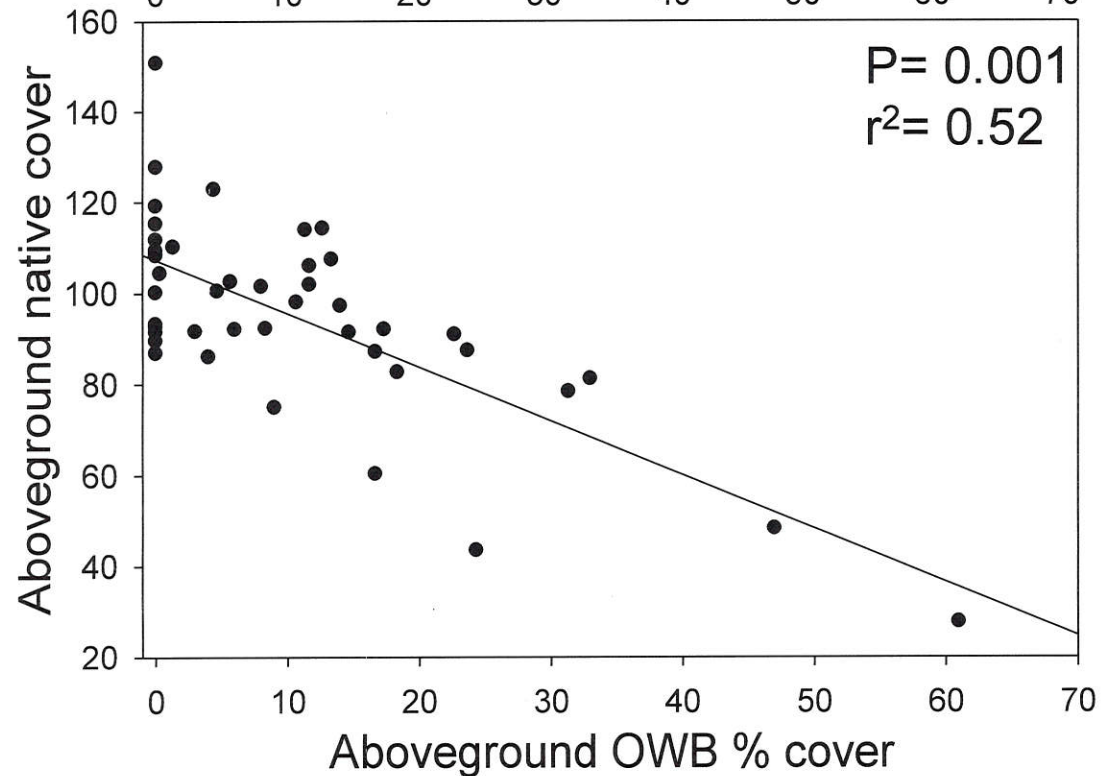
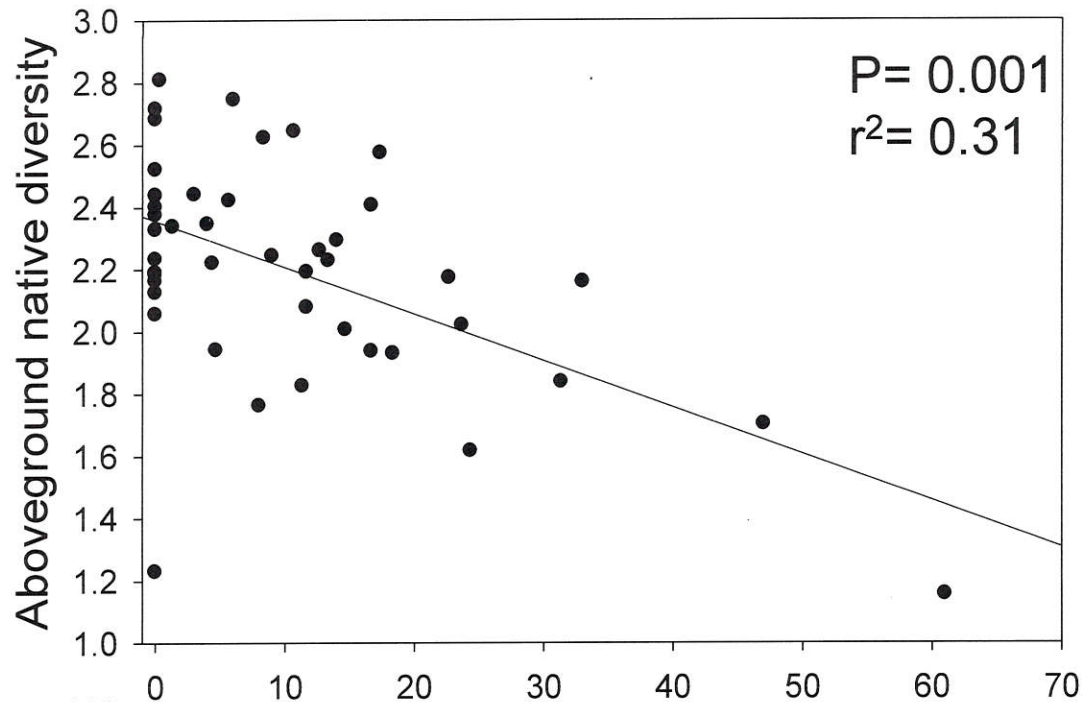


Big bluestem



Little bluestem





## OWB Effects on Native Plant Diversity

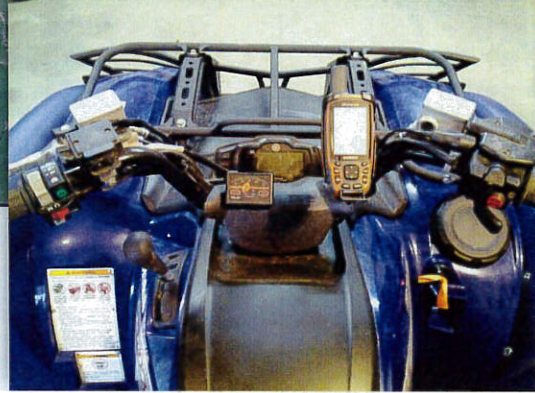
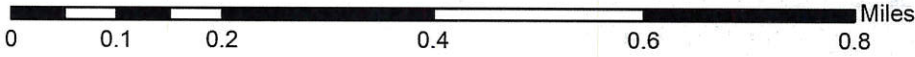
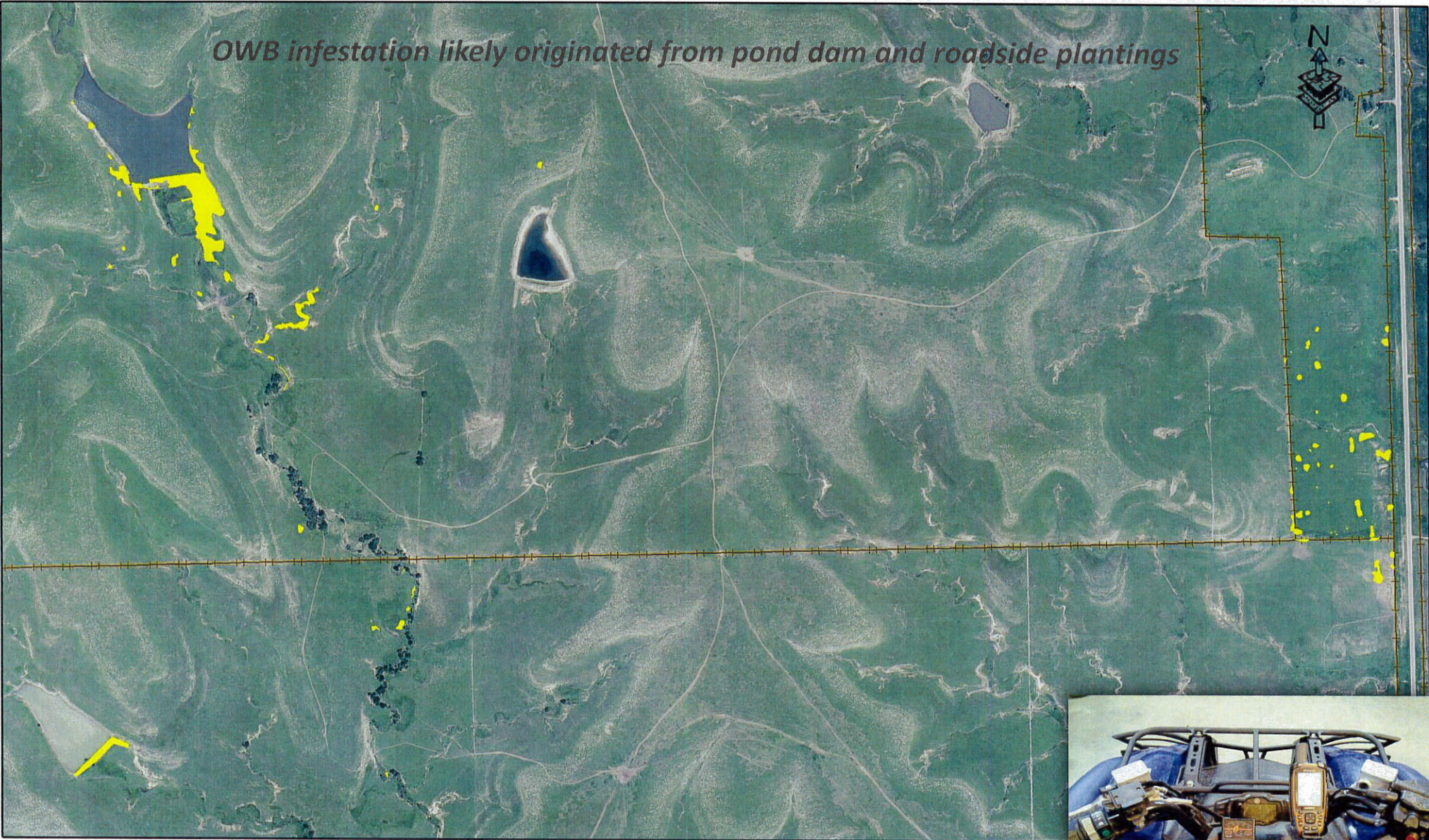
- Native species diversity reduced with increasing OWB cover
- Native species cover reduced with increasing OWB cover



# Mapping of Caucasian Bluestem at the Tallgrass Prairie National Preserve

15-13

*OWB infestation likely originated from pond dam and roadside plantings*





# Spot spraying Caucasian Bluestem at the Tallgrass Prairie National Preserve

*Using low rate of Imazapyr (Arsenal)*

15-14



**Water**

**Arsenal  
(Imazapyr)**

**NIS**

50 gal.

25 oz.

4 oz.



# Strategies for landowners to deal with OWBs

- Early detection
- Map during dormant season
- Spot treat with appropriate herbicide/rate
- Monitor treatment
- Repeat treatment as needed
- Educate others about risk and treatment option