

### The Conservation Landscape: Land and Partnerships

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### Signs, and logos, of conservation (and several are missing)



### Partnerships





Protecting nature. Preserving life.

















Who would have ever guessed that the tool most important to the salvation of ducks would be caramel, coffee, and conversation? Furtman 1991



# What guides us?

- MN Prairie Conservation Plan
- USFWS Thunderstorm Map
  - Waterfowl densities
- Audubon Important Bird Areas
- TNC Priority Conservation Areas
- Others



### Yesterday Afternoon's Tour Landscape

- Greens Federal
- Oranges State
- Blue MLT easements
- Red TNC
- Yellow DU easements
- (Missing BWSR easements, GIS hiccup)



### 'Clustered' and 'Scattered' Conservation

- Lac qui Parle WMA / Big Stone NWR complex
  - May have a little travel to get there
- More scattered across adjacent areas
  - LqP County More state
  - Pope County More federal
  - Big Stone County Mix
  - Nearby protected land for everyone
- Which arrow is the priority for the next acquisition?



### Where should we focus conservation lands?

- Near metro areas so people can access them easily?
- Farther away from metro areas where there may be better habitats?
- Scattered or clustered?
- Rural or near Metro?
  - There is/are no right answer(s), but there are trade-offs



### Start with Leopold

 The central thesis of game management is this: game can be restored by the *creative use* of the same tools which have heretofore destroyed it – axe, plow, cow, fire, and gun.



### Enhancement = ecological disturbance (resetting succession) Intermediate Disturbance Hypothesis - Connell 1978

• Grasslands are "defined" by fire, grazing, weather extremes

• How can we simulate these?



### When it comes to acquisition, bigger is better, but in context Should we prioritize the 160 or the 60-acre parcel?





# Bigger is better and more diverse

#### One wetland, one wetland type



??? wetlands, wetlands types/sizes/depthsHabitat for several speciesBroods move between wetlands



Subunit of Sagebraaten WPA - 15 acres

Helliksen WPA – 1386 acres

### Each species prefers different wetlands Broods use numerous wetlands over course of summer

- Blue-winged teal shallow marshes and sloughs
- *Gadwall* where marshes or small lakes occur in grasslands...shallow, but permanent
- *Pintail* ponds with dense but low vegetational growth around the shore
- Canvasback shallow prairie marshes surrounded by cattails, bulrushes, and similar emergent vegetation, and which are both permanent and large
- *Lesser scaup* grass-margined ponds and lakes, sometimes where there is a floating shoreline
- *Redhead* potholes and marshes that are usually somewhat alkaline and at least an acre in size,

### Wetland restoration – Prairie Dunes WMA (DNR, PF, MPCS)

#### Before wetland restorations



#### During / After wetland restorations



# Fire and grasslands

### • Remove thatch

- Warms soil (sun later, not the actual fire)
- Stimulates insects overwintering belowground (grasshoppers, etc)
- Increase growth and flowering of grasses and forbs
- Poor nesting cover spring
- Great foraging habitat summer
- Better nesting habitat next spring



## Grazing and wetlands



Water without a loafing spot is not acceptable as territory to these species [dabblers]. Hochbaum 1944

...densely vegetated shores will not attract and hold high populations of surface-feed ducks during the late summer and fall. ...the trampling of edges by cattle destroys the vegetation and creates improved loafing areas for ducks. Sowls 1955

### **Grassland Structure**

### • Paths

- Grass-grown cow <u>paths</u> seemed to be used [blue-winged teal broods] as lanes of travel when they are available...
  Apparently too dense a growth of vegetation made traveling difficult. Bennett 1938
- "The <u>paths</u> and small areas of reduced cover resulting from the activities of the cattle facilitate the movements of young birds [prairie-chickens], and provide places suitable for sunning in times when the grass is wet. Baker 1953



### **Grassland Structure**

### • Foraging/Brood habitat

- "Feeding rates of bobwhite chicks were sensitive to vegetation-influence mobility. Management of...fields for both pheasant and quail chicks can be reconciled by practices that permit more open space at ground <u>level</u>... Doxon and Carroll 2010
- "We suggest that land managers [greater prairiechicken] in the Sandhills region provide brooding habitat in grazed, upland ecological sites... Anderson et al 2015
- Year-round habitat for resident wildlife

![](_page_17_Picture_5.jpeg)

# Managing nesting cover

- Gadwall ...seek <u>tall, dense</u> vegetation for nesting more than do other dabbling ducks.
- Blue-wing <u>Hayfields</u> are used extensively for nesting in the Midwest.
- *Pintail* open areas for their nests where vegetation is either <u>low or</u> <u>sparse</u>.

(Bellrose 1976)

- Henslow's sparrow ...grasslands with well-developed litter, a considerable amount of <u>residual dead vegetation</u>,
- *Bobolink* ...preferably with <u>moderate</u> to high overall vegetation height....
- Upland sandpiper Hay meadows, large pastures, agricultural lands that include stubble, <u>moderately grazed</u> <u>pastures</u>

(Johnsgard 2001)

### Grassland Restoration and Invert diversity Pollinators interesting themselves / food resource for birds

- <u>alumroot</u> flea beetle, <u>iris</u> weevil, <u>leadplant</u> gall-midge, <u>scurf-pea</u> argid sawfly, and <u>Liatris</u> borer moth
- phlox <u>stem</u> borer, spiderwort <u>leaf</u> beetle, *Baptisia* <u>seed</u> weevil, false boneset <u>flower</u> moth
- *Silphium* aphid, *Silphium* leaf-miner, *Silphium* internal stem gall wasp
- (names provided courtesy R. Henderson, WI DNR retired).

![](_page_19_Picture_5.jpeg)

### We all live downstream – OHF projects serve all Minnesotans

- In parts of Iowa, wetland restoration removed up to 85 percent of the nitrate-nitrogen in the water (Woltemade 2000).
- ...we show that, under moderate-high streamflow, wetlands are five times more efficient per unit area at reducing riverine nitrate concentration than the most effective land-based nitrogen mitigation strategies...Our results suggest that wetland restorations that account for the effects of spatial position in stream networks could provide a much greater benefit to water quality then previously assumed. (Hansen et al 2018 in Minn River Valley)

![](_page_20_Picture_3.jpeg)

![](_page_20_Picture_4.jpeg)

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# Thank You!

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