

Kansas Ducks Unlimited

Wetland Conservation Programs

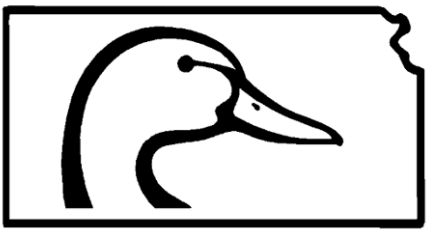


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Grand Island, NE

M.S. Wetland Soils and Hydrology - OSU



Our Mission

Ducks Unlimited conserves, restores, and manages wetlands and associated habitats for North America's waterfowl. These habitats also benefit other wildlife and people.

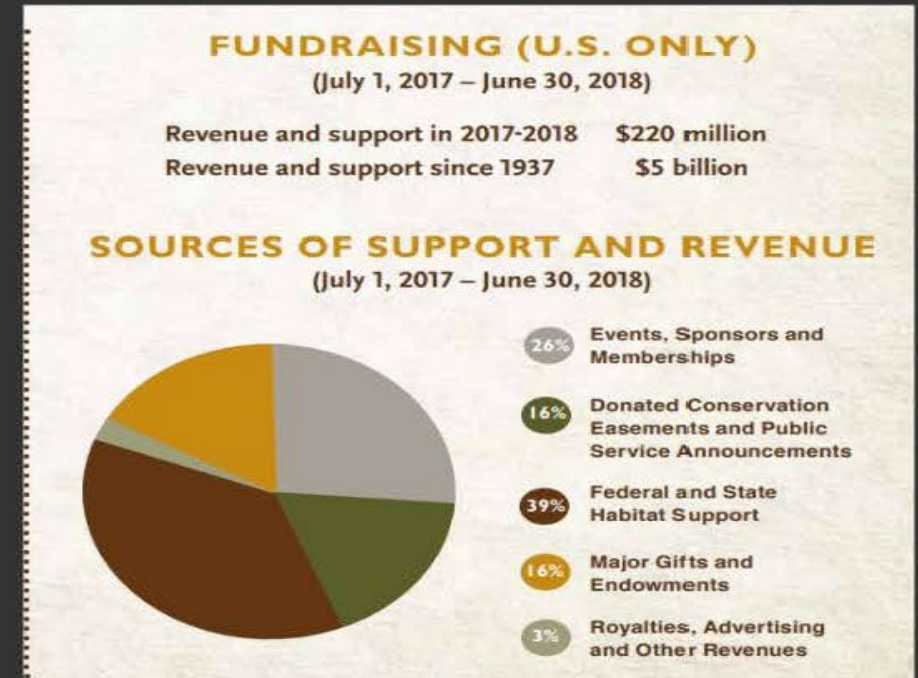
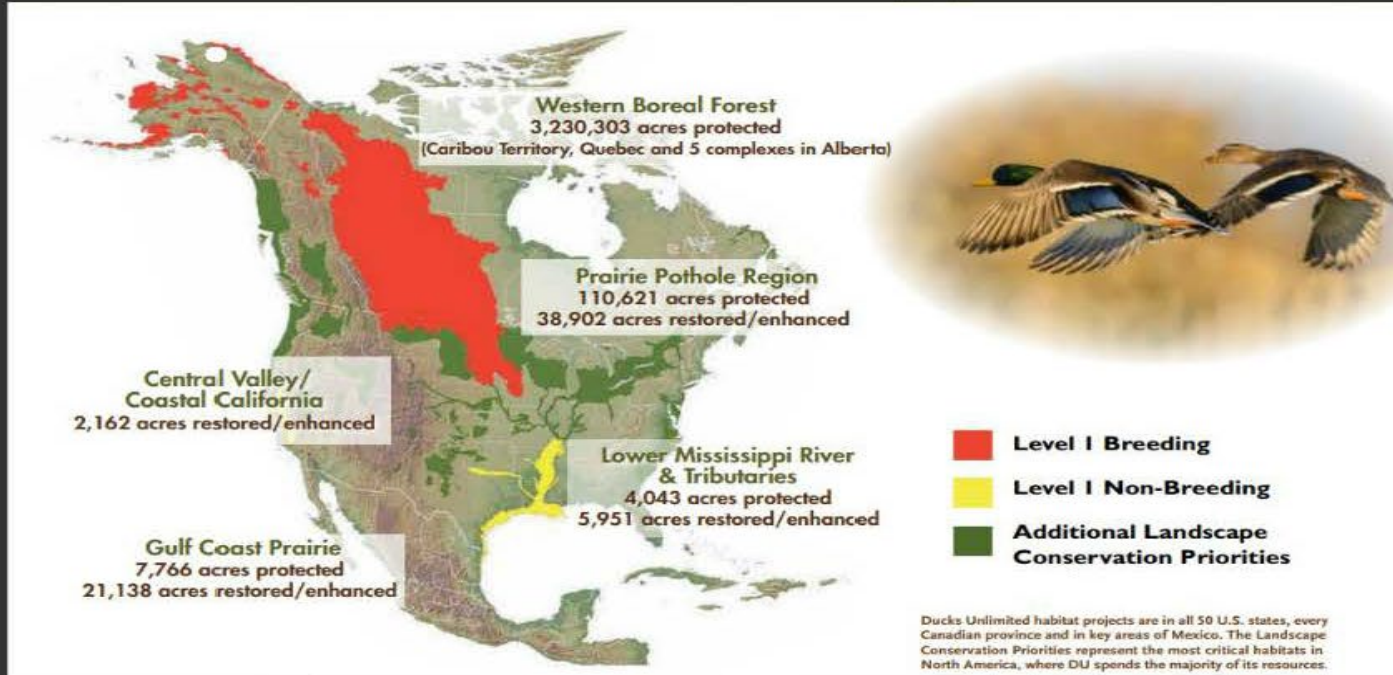
Our Vision

The vision of Ducks Unlimited is wetlands sufficient to fill the skies with waterfowl today, tomorrow and forever.



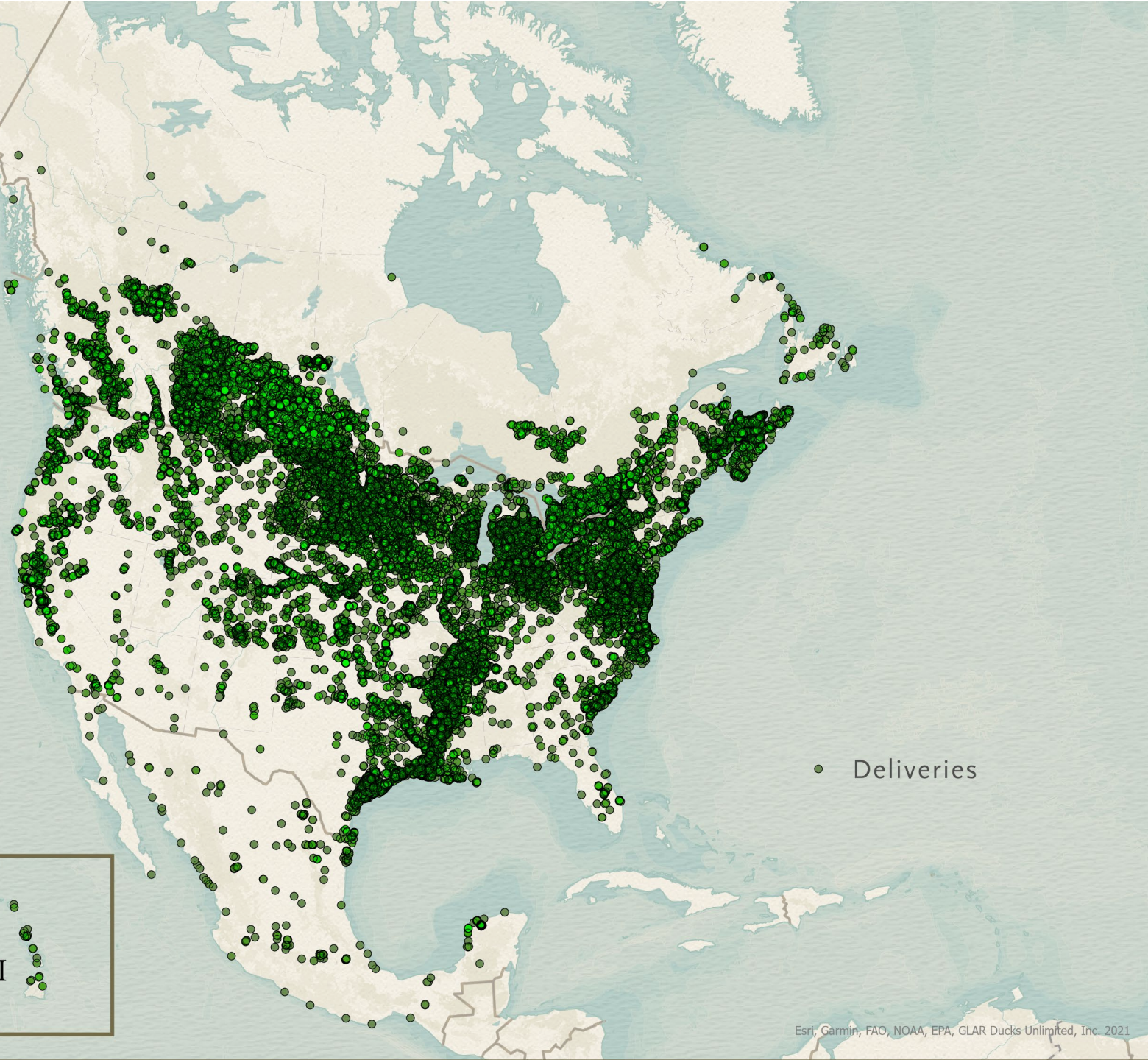
Ducks Unlimited

- The world's leader in wetland conservation
- 501(c)(3) Organization
- 309,000 acres conserved in 2019 (14.5 million since 1937)
- Revenue and Support in 2019 was \$235+ million





84 YEARS
OF
CONSERVATION
15+ million acres



Kansas Ducks Unlimited

Volunteers

17,000 members

>125 annual events

>\$1.4 million annually

Staff

Matt Hough – Manager of Conservation Programs

Jim Pitman – Eastern Kansas Biologist

Joe Kramer – Central Kansas Biologist

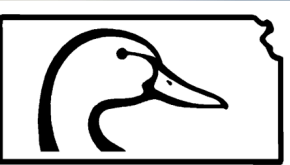
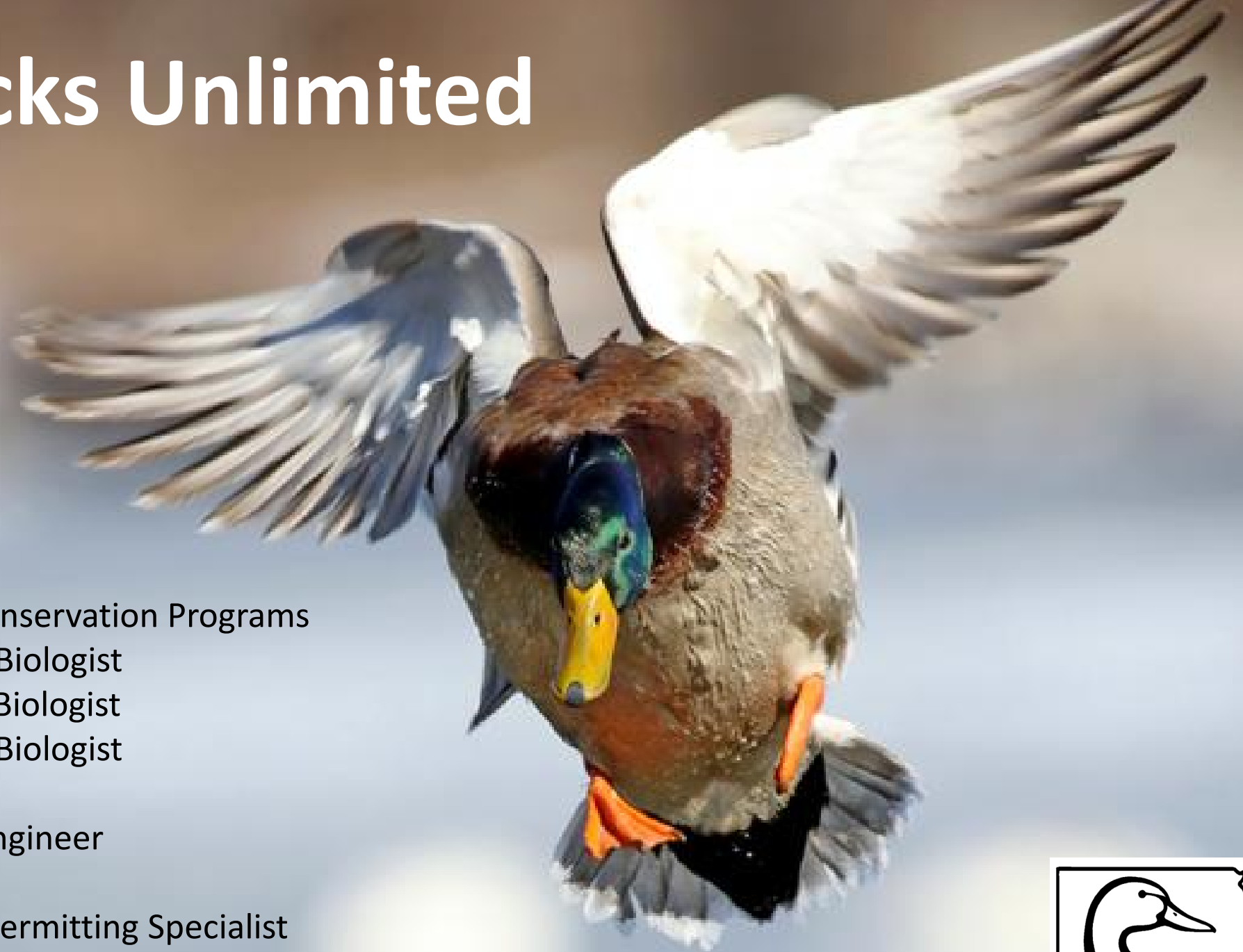
Abe Lollar – Western Kansas Biologist

Craig Roy – Engineer

Mitch Messmer – Regional Engineer

Tim Horst – Land Manager

Angelina Wright – Biologist/Permitting Specialist



Why do we care about wetlands?

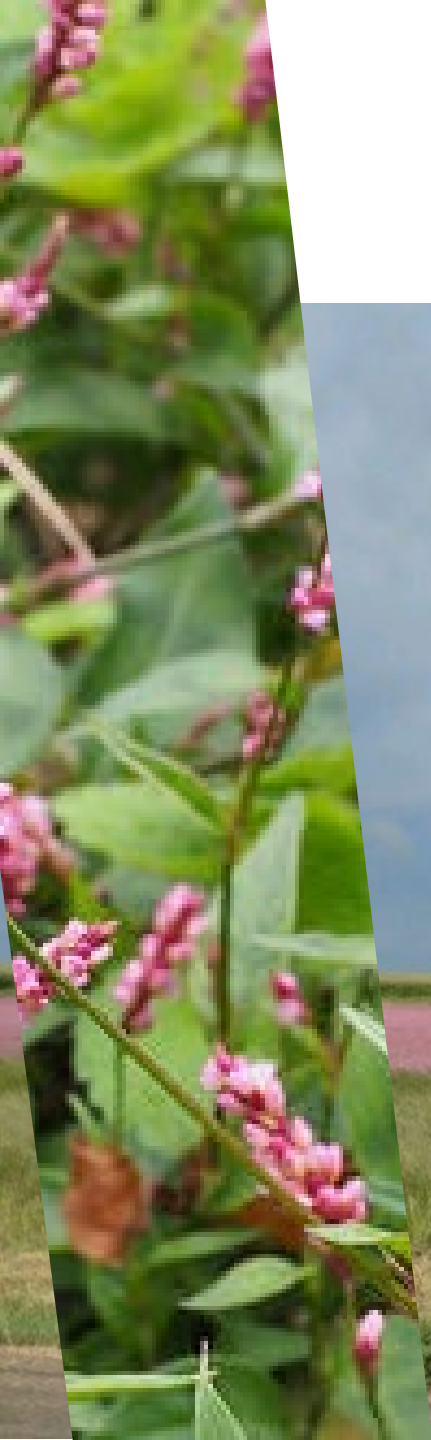
- Habitat
- Recreation
- Flood protection
- Water quality and quantity
- Erosion control
- Aesthetics



Shallow, Ephemeral, “Food Rich” Wetlands in Kansas Help Ducks Maintain Good Physical Condition During Spring Migration



“Weedy” Annuals



Percentage of Wetlands Acreage Lost, 1780's-1980's



Twenty-two states have lost at least 50 percent of their original wetlands. Seven states—Indiana, Illinois, Missouri, Kentucky, Iowa, California, and Ohio—have lost over 80 percent of their original wetlands. Since the 1970's, the most extensive losses of wetlands have been in Louisiana, Mississippi, Arkansas, Florida, South Carolina, and North Carolina.

Source: Mitch and Gosselink. *Wetlands*. 2nd Edition, Van Nostrand Reinhold, 1993

The US has lost 60 acres of wetland per hour over the last 200 years!



What services does Ducks Unlimited provide?

- Technical assistance
- Professional services
- Cost-share programs
- Land acquisitions
- Conservation Easement delivery





Technical Assistance

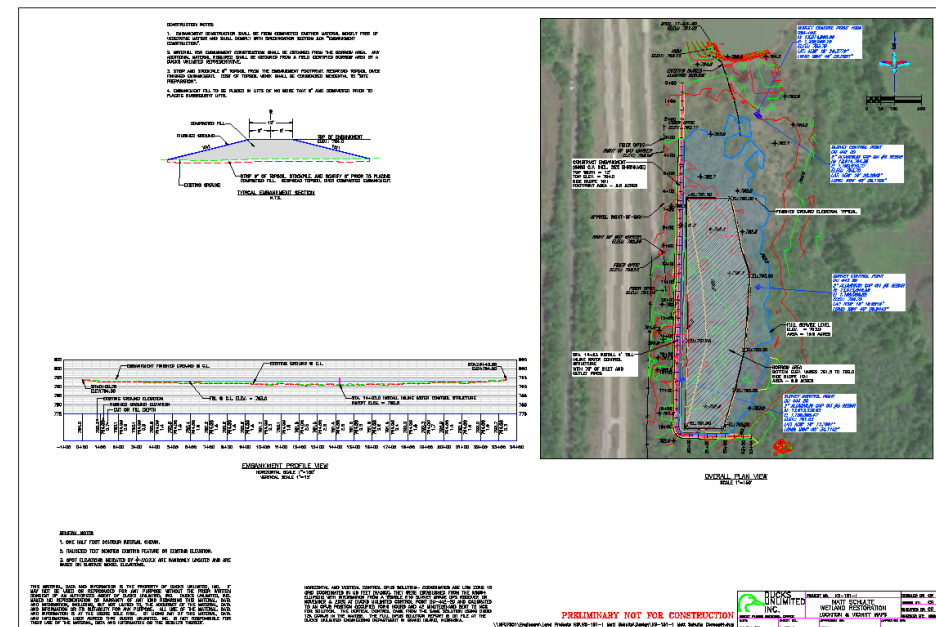
- Public and Private Lands
- Provide habitat recommendations
 - Invasive species treatments
 - Water control decisions
 - Seedings
 - Management
- Explain applicable financial assistance programs
 - DU, KDWPT, NRCS, FSA, PFW, DOC, KAWS, etc.
- Assist with program applications and fundraising for projects
- >400 landowner contacts and site reviews over last 3 years.





Professional Services

- Surveying
- Engineering
- Wetland Permitting
- Construction Bidding
- Construction Management
- Wetland Mitigation



Permits Needed for KS Wetland Work:



ENDANGERED SPECIES
REVIEW (US FISH AND
WILDLIFE SERVICE)



CULTURAL RESOURCES
REVIEW (STATE HISTORICAL
PRESERVATION OFFICE)



CLEAN WATER ACT PERMIT
(ARMY CORPS OF
ENGINEERS)



FLOODPLAIN FILL PERMIT
(KANSAS DEPARTMENT OF
AG)



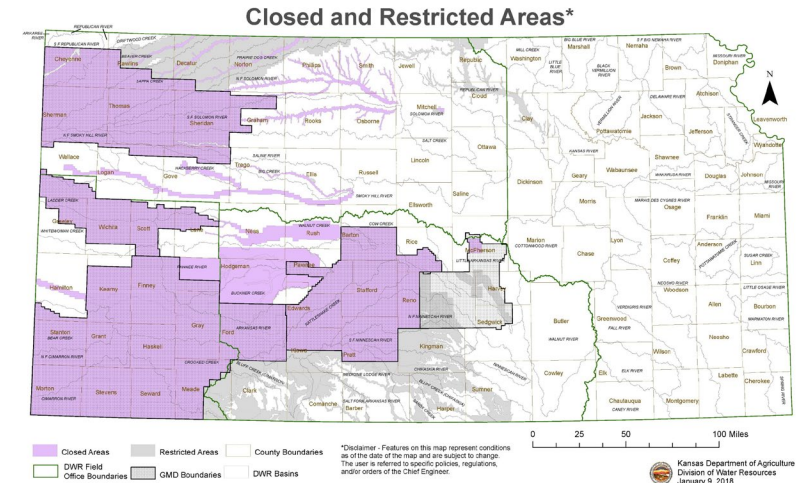
COUNTY FLOODPLAIN FILL
PERMIT (COUNTY)



STORMWATER PERMIT
(KANSAS DEPARTMENT OF
HEALTH AND
ENVIRONMENT)



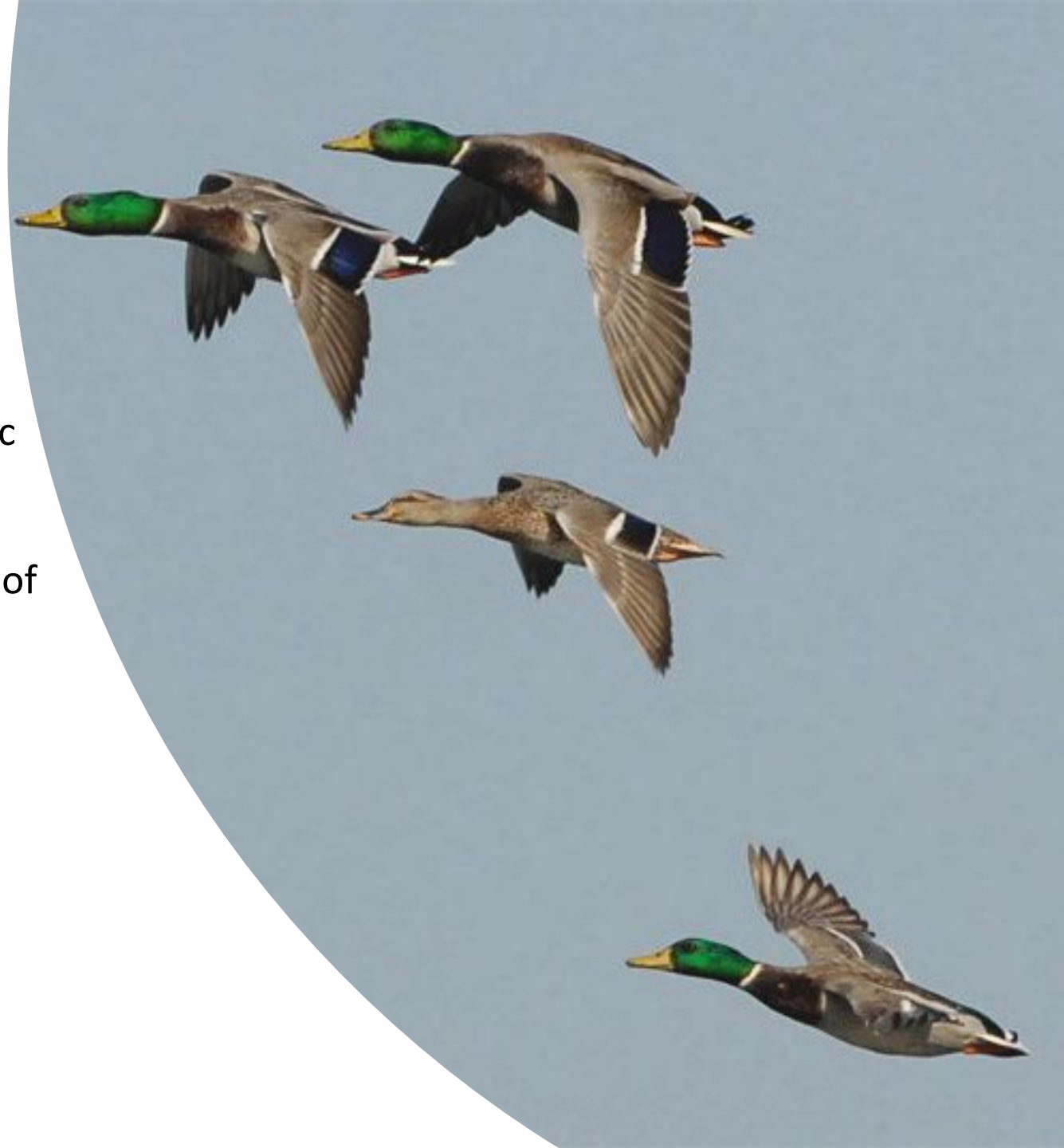
WATER RIGHTS (DIVISION
OF WATER RESOURCES)





Cost-Share Program

-
- Wetland restoration funding for private and public land projects.
 - Professional services, levees, grass buffer seeding, water control structures, treatment of invasive species, etc.
 - Requires contributions of cash &/or in-kind matched 1:1 with NAWCA grant funds.
 - Often piggy-back on other programs like Habitat First, EQIP, or WIHA.





Wetland Management

- Grazing
 - We love grazing!
 - Fence and livestock watering facilities
 - Workshop in southcentral NE September 6th.
- Water control structures
 - Moist soil management
 - Drought is good
- Pumping infrastructure
- Invasive species control
 - Cattails, phragmites, and woody trees are the main targets
 - Mechanical, physical, chemical, & aerial spraying,





Land Acquisitions

- Primarily for wetland protection, wetland restoration, and/or increased public access
 - Try to divest property in <5 years
- Restore natural habitat and sell to private or public interests
- Mostly acquired with NAWCA funds & matching contributions (cash & in-kind)
- Some acquired via donations or planned gifts
 - Full and partial donations
 - Leave a legacy and benefit from tax deductions
 - Benefit now and continue using property until death (reserved life estate)
- DU has ~6-7 properties in KS annually
 - Focus around Cheyenne Bottoms and Quivira





Conservation Easements

- Held by partner 501c(3) entities in KS
 - TNC, PF, KLT, RTK, and more.
- Must protect conservation values (terms negotiable)
 - Limit development and subdivision
 - No destruction of wetlands and native grasslands
 - Landowner makes management decisions, controls access, & maintains right to sell or lease
- Options
 - Purchased, donated, or partially donated
- Many potential benefits
 - Income tax deduction (perpetual donations)
 - Estate tax benefits
 - NAWCA match (perpetual donations)
 - 1031 land exchange
- We also assist in promotion of WRE and ALE through NRCS

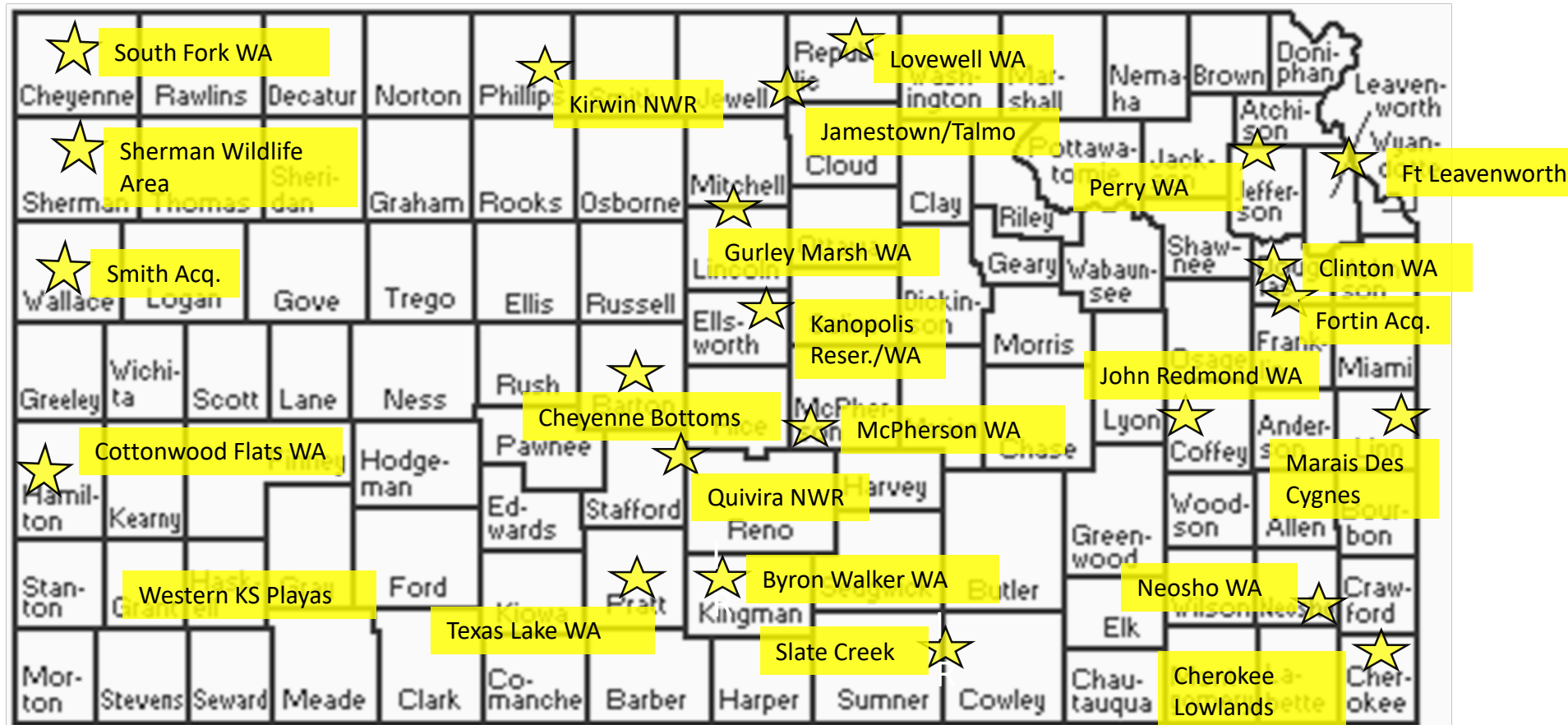


Partners and Programs

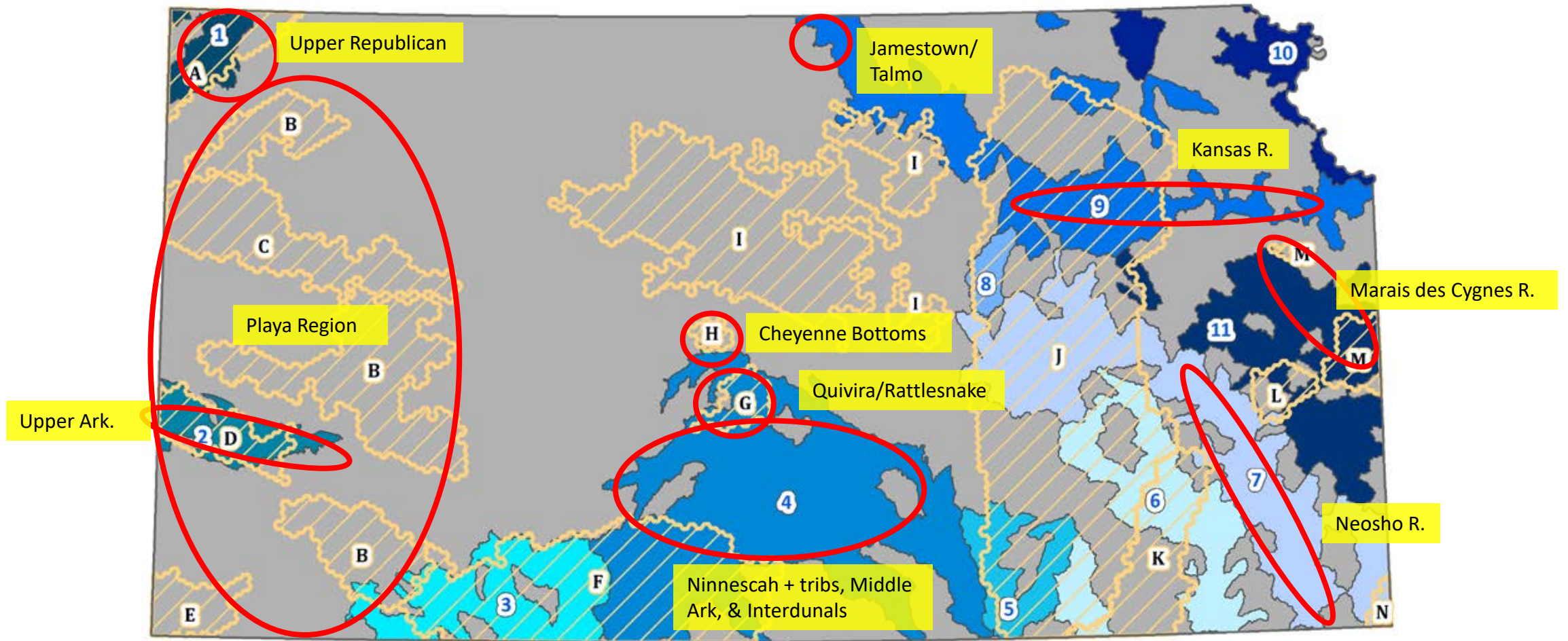
- ▶ Grants: NAWCA, NFWF, foundations
- ▶ NRCS – EQIP; WRE; ALE; RCPP
- ▶ FSA – CRP; SAFE
- ▶ KDWPT – Habitat First; Pittman Robertson; WIHA
- ▶ Kansas Forest Service
- ▶ USFWS PFW
- ▶ Department of Conservation
- ▶ Conservation Districts
- ▶ Other NGOs
- ▶ KDHE/KAWS/WRAPS – watershed programs



Public Lands Projects



Private Land Hotspots



Ecological Focus Areas

-  **Kansas Boundary**
-  **Aquatic Focus Areas**
-  **Terrestrial Focus Areas**

- | | |
|-------------------------------------|--------------------------------|
| A - Arikaree Breaks | H - Cheyenne Bottoms |
| B - Playa Landscape | I - Smoky Hills |
| C - Smoky Hill River Breaks | J - Flint Hills |
| D - Arkansas River Sandsage Prairie | K - Chautauqua Hills |
| E - Cimarron Grasslands | L - Eastern Tallgrass Prairies |
| F - Red Hills | M - Eastern Forests |
| G - Quivira | N - Ozark Plateau |

Terrestrial

Aquatic

- | | |
|----------------------|------------------------|
| 1 - Upper Republican | 7 - Neosho |
| 2 - Upper Arkansas | 8 - Smoky Hill |
| 3 - Cimarron | 9 - Lower Republican |
| 4 - Lower Arkansas | 10 - Missouri |
| 5 - Walnut | 11 - Marais des Cygnes |
| 6 - Verdigris | |

Wetlands and Water

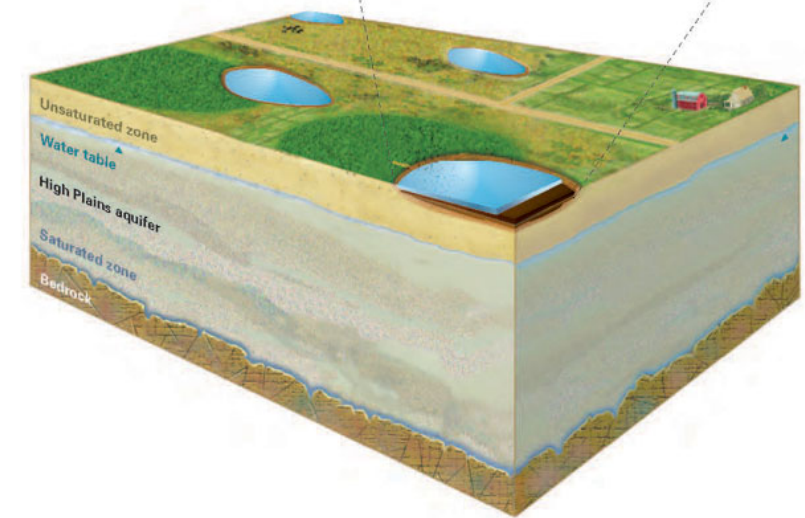
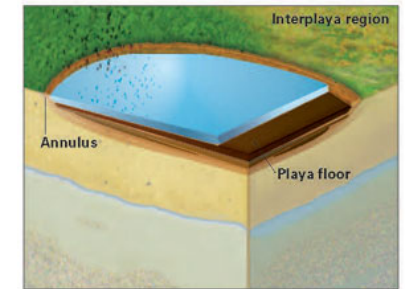
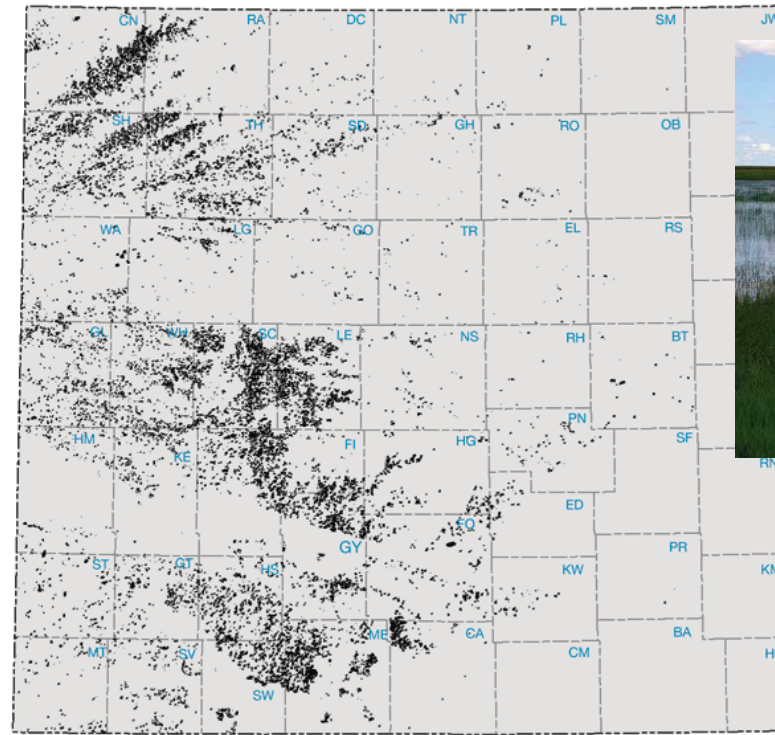
- Overview of our wetland programs and how they relate to water issues across Kansas.





Playas & Recharge

- Playas are depressional, ephemeral wetlands in the western third of Kansas
- They are the #1 source of recharge to the Ogallala Aquifer
- Restoration
 - Sediment removal
 - Upland buffers – shortgrass prairie
 - Hydrologic restoration (pits, ditches, roads, terraces, etc.)
- Focus on Kansas communities
 - Greely and Wichita Counties for recharge – PLJV RCPP
 - Copeland Kansas for nitrate reduction - KDHE
- DU has cost-shared on over 2,000 playa wetland acre restorations to date and counting
- FSA's CRP-38B has enrolled over 11k playa acres & buffers.
- Workshop January 11-12 in Dodge City, KS



By The Numbers (best estimate)

Number of playas in KS	22,046
Total number of acres	81,495.74 acres
Average size of playa	3.70 acres
*Average recharge to aquifer (acre foot)	20,373 acre/ft
*Average recharge to aquifer (gallons)	6,621,225,000 gallons

- Average recharge: is base off average rainfall with a properly functioning playa. Over 90% of KS playas are not functioning properly due to sedimentation and other factors.



Phreatophyte Control

- Invasive woody species removal
- Focused on removal of species that use alluvial groundwater
 - Tamarisk, olive, ERC
- Estimated 1-acre foot of water can be returned for each 1.85 acres controlled or 0.54 acre-feet/ac
- Focal Areas
 - Rattlesnake Creek
 - Republican River (Cheyenne Co.)
 - Western Arkansas
 - Ninnescah River
- Chemical/mechanical
- Win-win scenario with cattle producers/conservation
- Workshop March 18th, Syracuse, KS

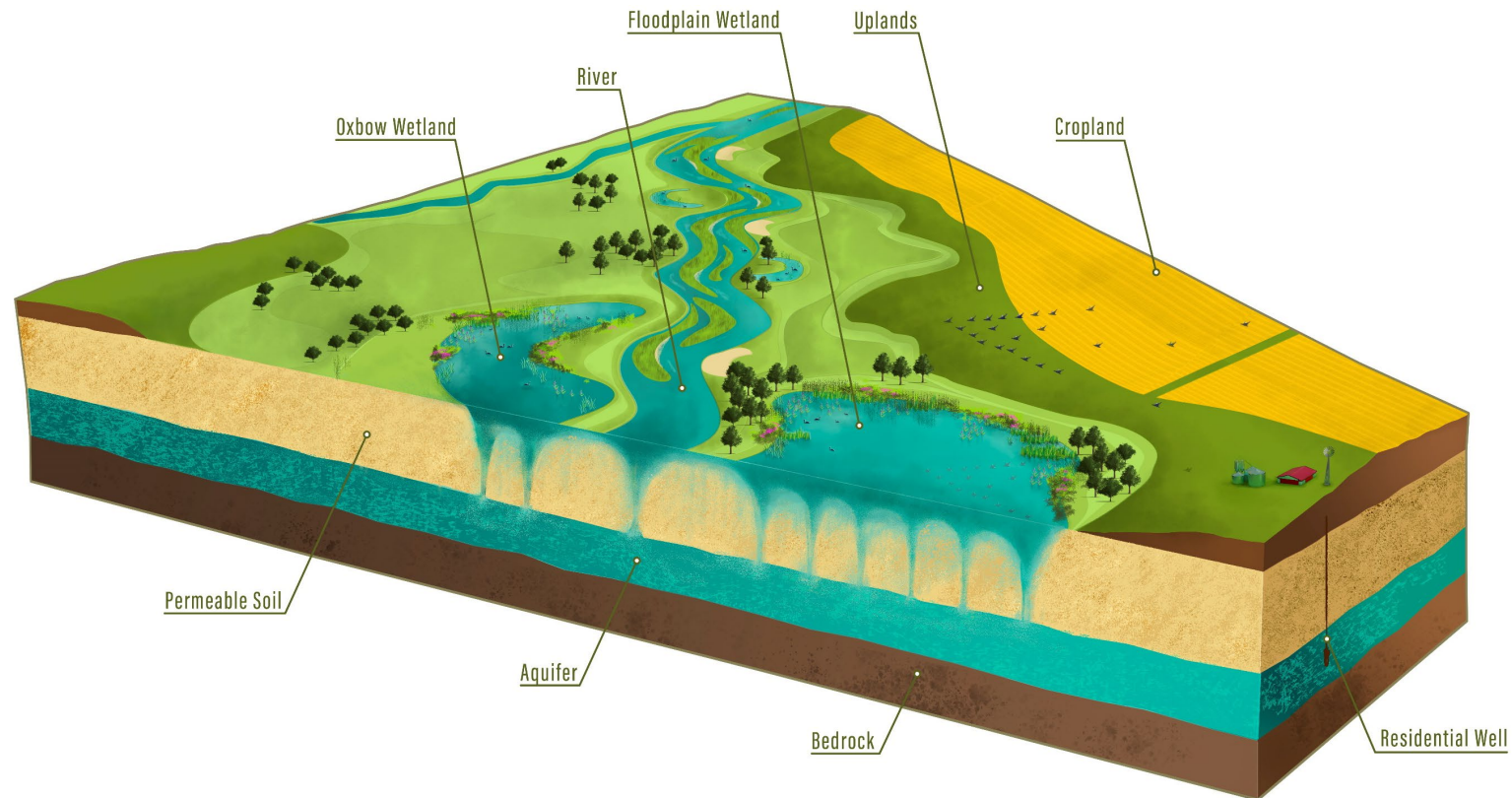


Courtesy: Aron Flanders, PFW



Flood Abatement

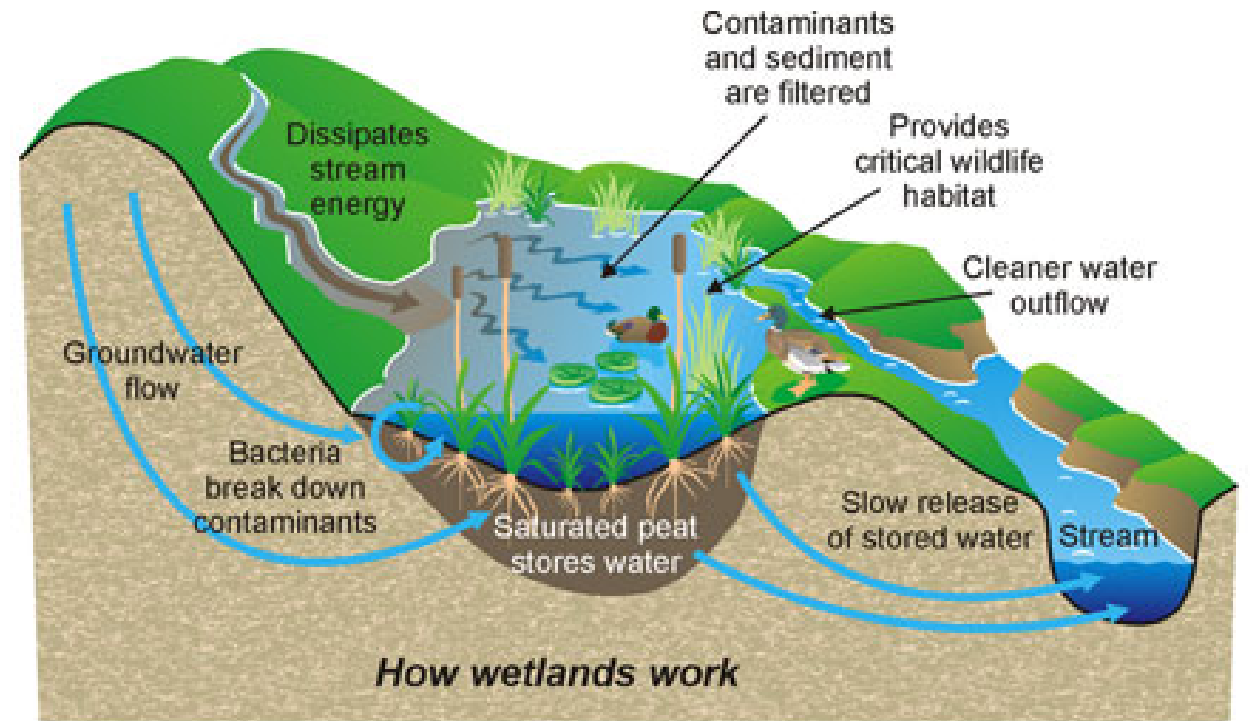
- Wetlands are Earth's sponge
- An acre of wetland, 1' deep, can hold **330,000 gallons** of water, reducing the magnitude of downstream flooding.
- Retimes flooding and slows it, increasing recharge
- Restorations
 - Ditch Plugs
 - Sediment removal
 - Levees & WCS
 - Pumping infrastructure
- Case study - Paxico, KS



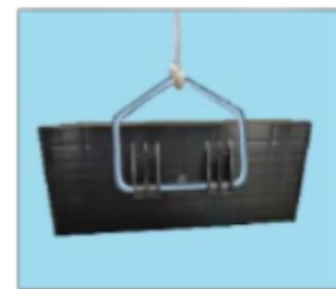


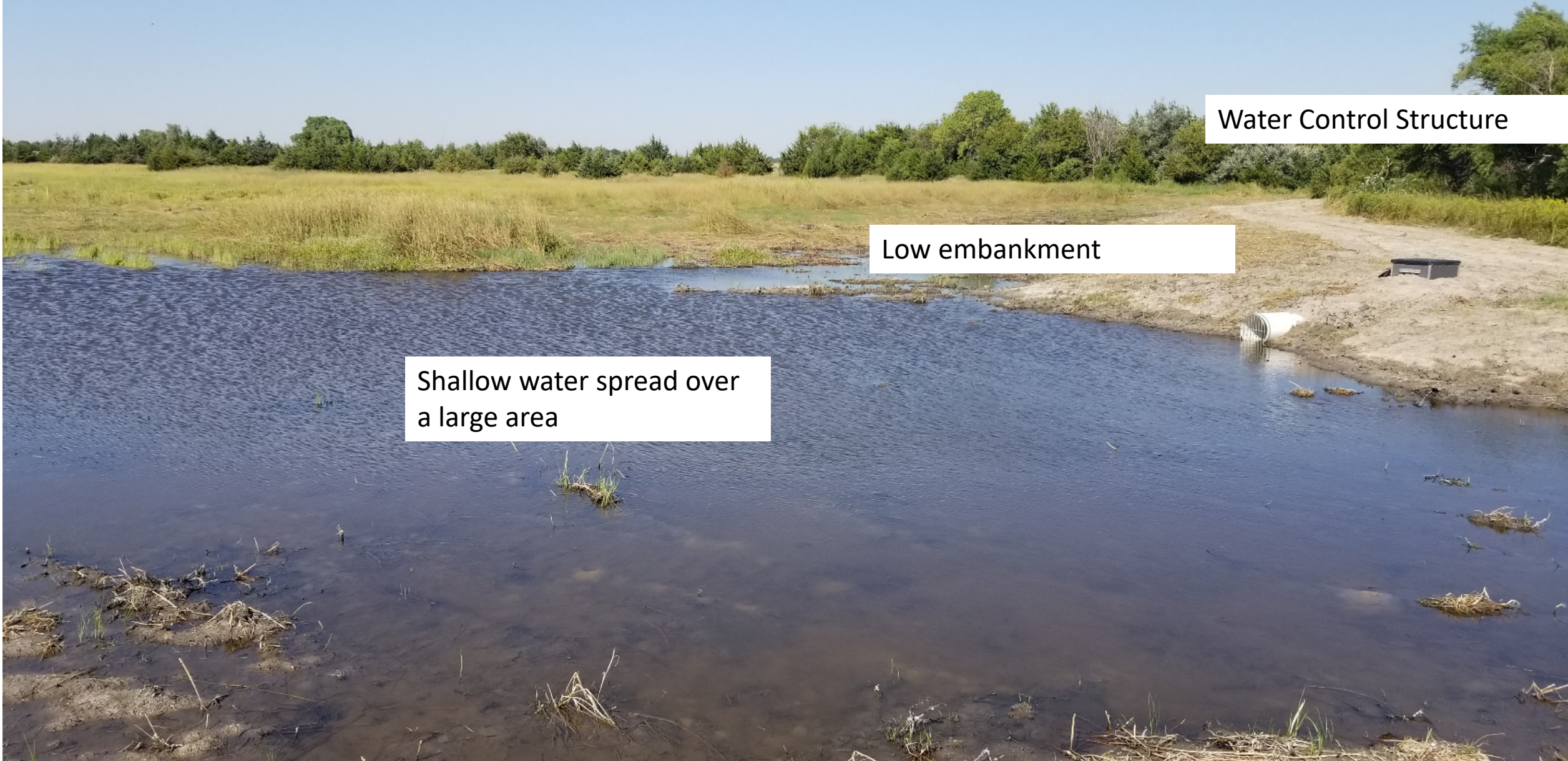
Wetlands & Water Quality

- Wetlands are Earth's kidneys
- On average, an acre of wetland can remove 40-70%* of excess nitrate loads from 100 acres of cropland runoff.
- It can also trap a dump truck load (13 tons)* of sediment annually before it enters rivers or reservoirs.
- Wetlands can remove up to 80%* of phosphorus & can also cycle out many pesticides.
- This is really gaining traction in IA, OH, MN, and more.
 - Less so in Kansas...YET!!!
- Case Study - Clinton WA
 - Study with City of Lawrence, KDHE, KDWP & KAWS
- Opportunities abound in KS
- Expensive? - Not really, and it's long-term!
 - Demand is only growing



*These ranges are from several international studies, and we are looking to assemble more local information for Kansas wetlands.





Water Control Structure

Low embankment

Shallow water spread over
a large area





Beaver Dam Analog

- BDAs and PALS (Post Assisted Log Structures)
 - Beaver dams without beavers?
 - New low-tech stream and wetland/stream restoration technique
 - Popular in western US (UT, CO, OR, etc.).
 - Recently approved in KS as an EQIP practice.
- Conservation Innovation Grant (submitted July 2021) to study...
 - KS and NE Sites
 - Groundwater recharge
 - Water quality
 - Sediment storage
 - Stream morphology
 - Fish and invertebrates
 - Flooding impacts and floodplain reconnection
 - Workshops TBD
 - NAWCA grant submitted for equipment



Courtesy: Pollock; Bouwes, et al.

Questions?

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