

Iowa Loess Hills Restoration

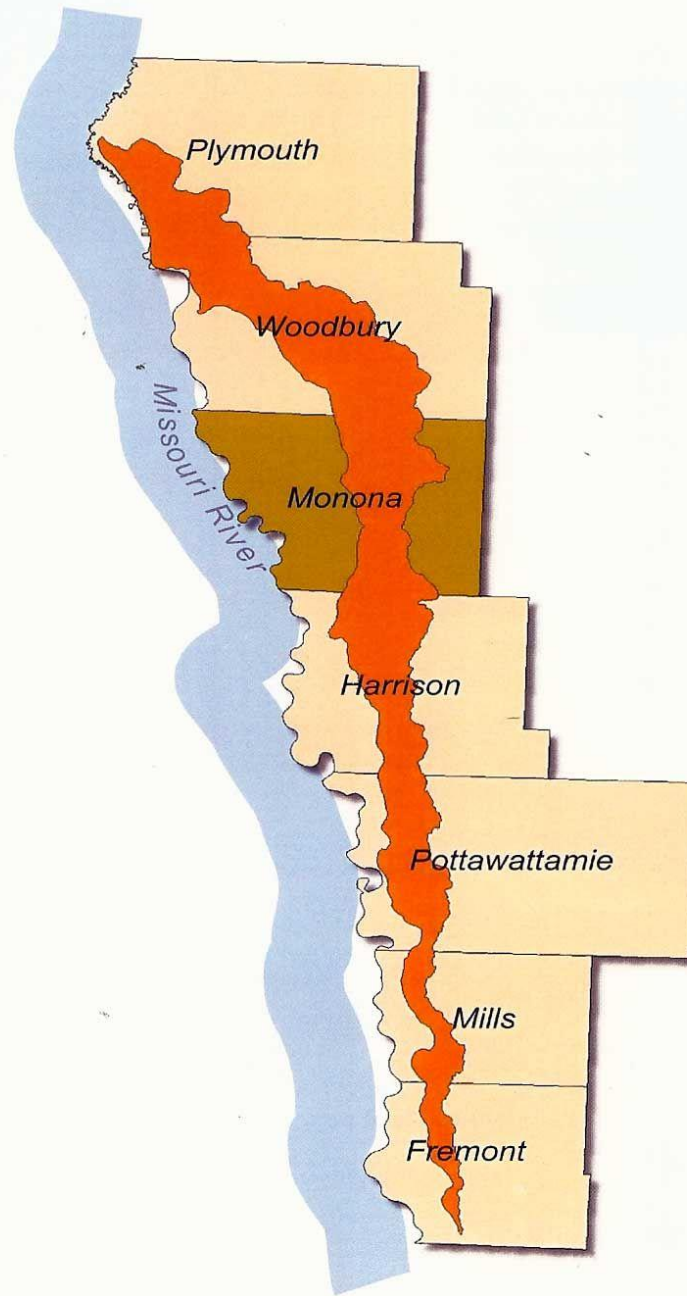
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U.S-China Exchange on Loess Landforms

Northwest Agricultural & Forestry University
Yangling, Shaanxi, China

June 18-21, 2019

Loess Hills of Western Iowa



Restoration Issues

1. Defining goals, plan (use, economics, legal ownership and protection, timeframe)
2. Removing waste, old buildings, machinery
3. Preservation of historical sites, artifacts
4. Erosion control (+ animal, vehicle control)
5. Removal and control of invasive plants and animals
6. Prairie and forest preservation, restoration
7. Wildlife habitat management
8. Property facilities (roads, fencing, park facilities)
9. Area-wide coordination

Small Scale Restoration:

The Green Hollow Center

(Future: Blackburn State Park & Wildlife Management Area)



- 160 acres (65 hectares)
- 16 threatened/endangered species
- Pioneer dug-out sites

1. Goals, Planning

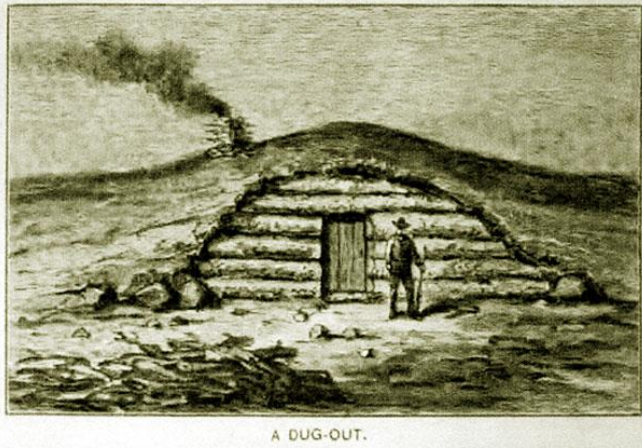
- Use:** Farming, hunting, other recreation, etc.
- Economics:** Individual-funded, public-funded, foundation, grants, charity events
- Legal ownership and protection:** Protective org., env. conservation easement, etc.
- Timeframe**



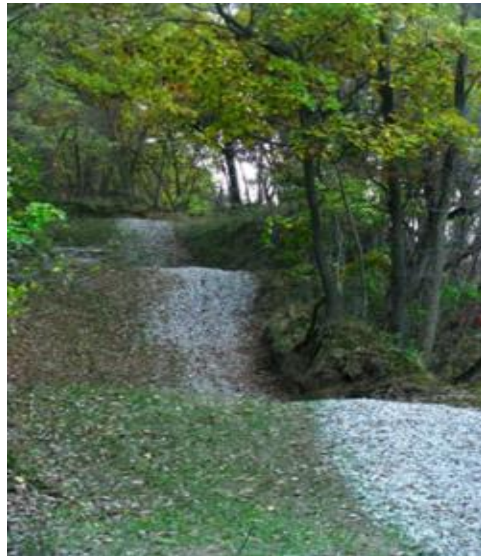
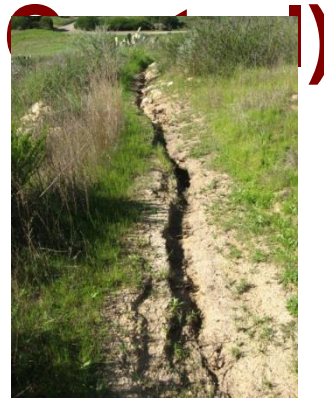
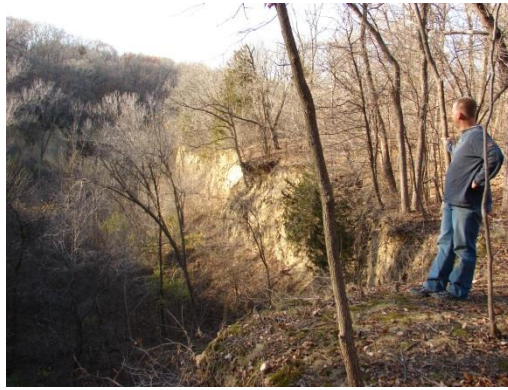
2. Removing Waste, Old Items



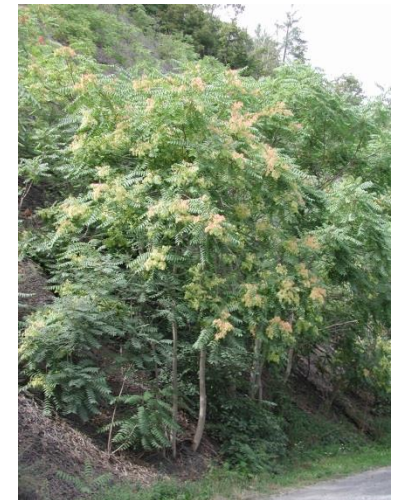
3. Preservation of Historic Sites, Artifacts



4. Erosion Control (+ Animal, Vehicle)



5. Invasive Plant & Animal Removal



6. Prairie & Forest Restoration



7. Wildlife Habitat Management



8. Property Facilities



9. Area-wide Coordination



Iowa
Natural Heritage
Foundation



Restoration Across the Iowa Loess Hills



Agriculture in Iowa's Loess Hills

- Historically, used for livestock production/grazing
- Increase in commodity prices (1990-2012) led to large-scale conversion to row crop agriculture (corn & soybean)
- Marginally profitable crop ground when commodity prices decline
- Statewide average: \$7,300/ac (\$18,000/ha) – Loess Hills farm ground generally less (approx. 75%), but land values fairly static



Restoration in Iowa's Loess Hills – WHY?

- 640,000-acre (260,00ha) landform containing 50-75% of Iowa's remaining native prairies
- Recent impacts to the Loess Hills prairie¹
 - 51,000ac (20,638ha) converted from perennial cover to crops
 - 31,255ac (12,648ha) of new development
 - 46,487ac (18,812ha) of new forested land
 - **But...2,086ac (844ha) of eastern red cedar removed 😊**

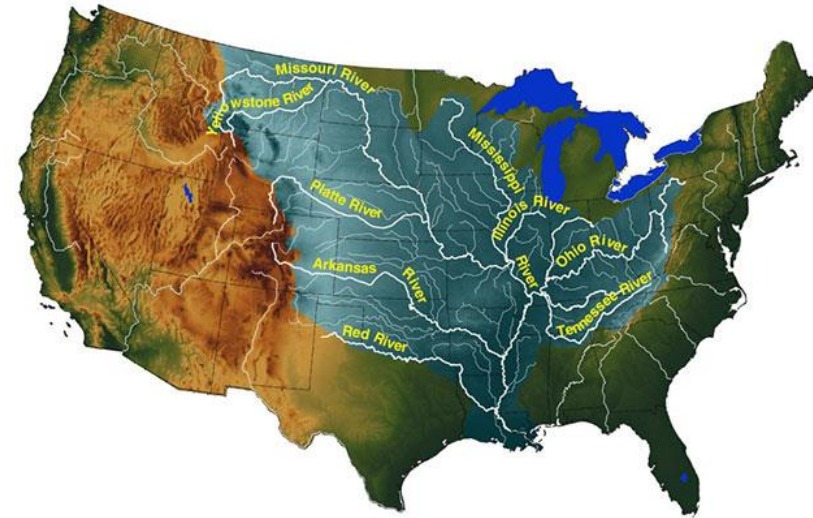


¹Loess Hills Comprehensive Plan, 2011; data 1992-2006

Restoration in Iowa's Loess Hills – WHY?

Soil Health & Water Quality

Not just a Loess Hills problem, or even an Iowa one...
nutrient loading & Gulf of Mexico Dead Zone



- Soil loss and excess sedimentation
- Loss of CO2 sequestration through conversion & tillage

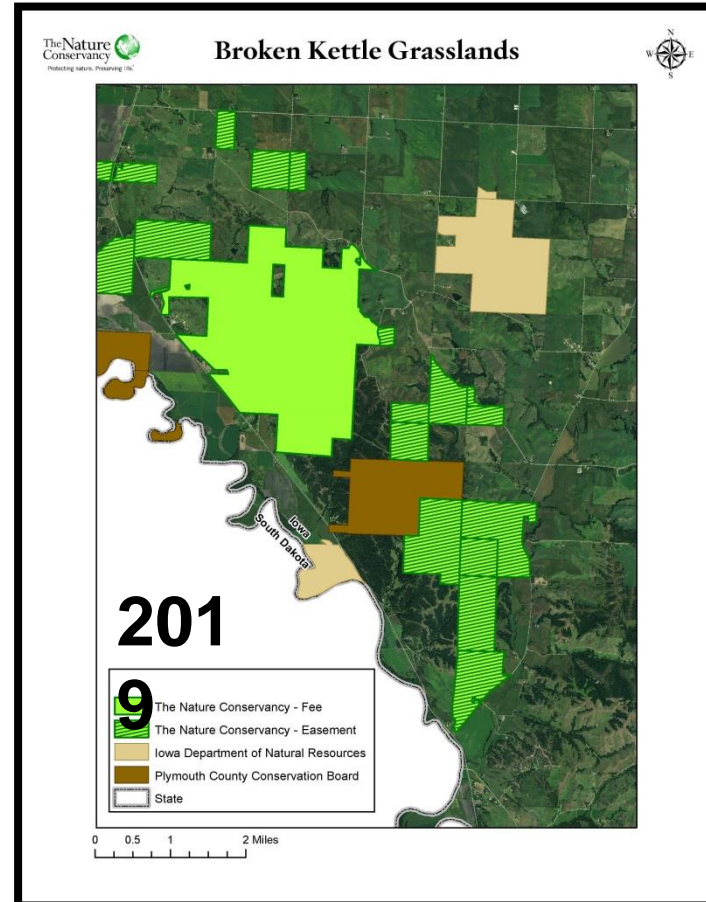
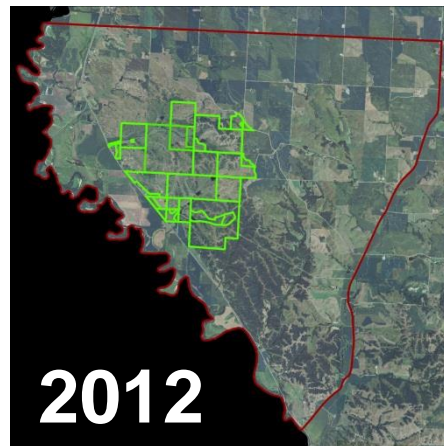
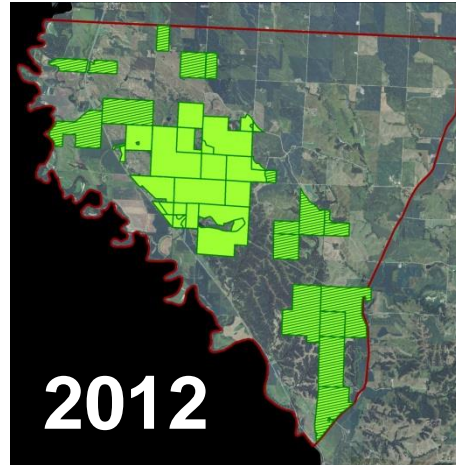
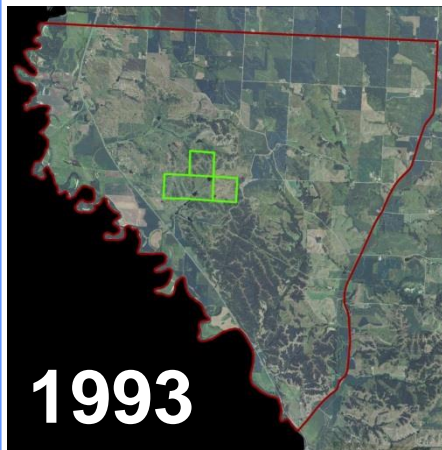
Restoration in Iowa's Loess Hills – HOW?

Project Example: Loess Hills Cooperative Burn Week



Restoration in Iowa's Loess Hills – HOW?

Project Example: Broken Kettle Grasslands Preserve



Restoration in Iowa's Loess Hills – Soil Health

Managing for soil health

- Terracing
- Grazing



Restoration in Iowa's Loess Hills – Working Together

Project Example: Green Hill Ranch



QUESTIONS

