

# THE USE OF ECOLOGICAL RESTORATION PRINCIPLES TO ACHIEVE REMEDY PROTECTION AT THE FERNALD PRESERVE AND WELDON SPRING SITES

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Fernald Preserve

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Weldon Spring Site



21<sup>st</sup> Annual NARPM Training Program

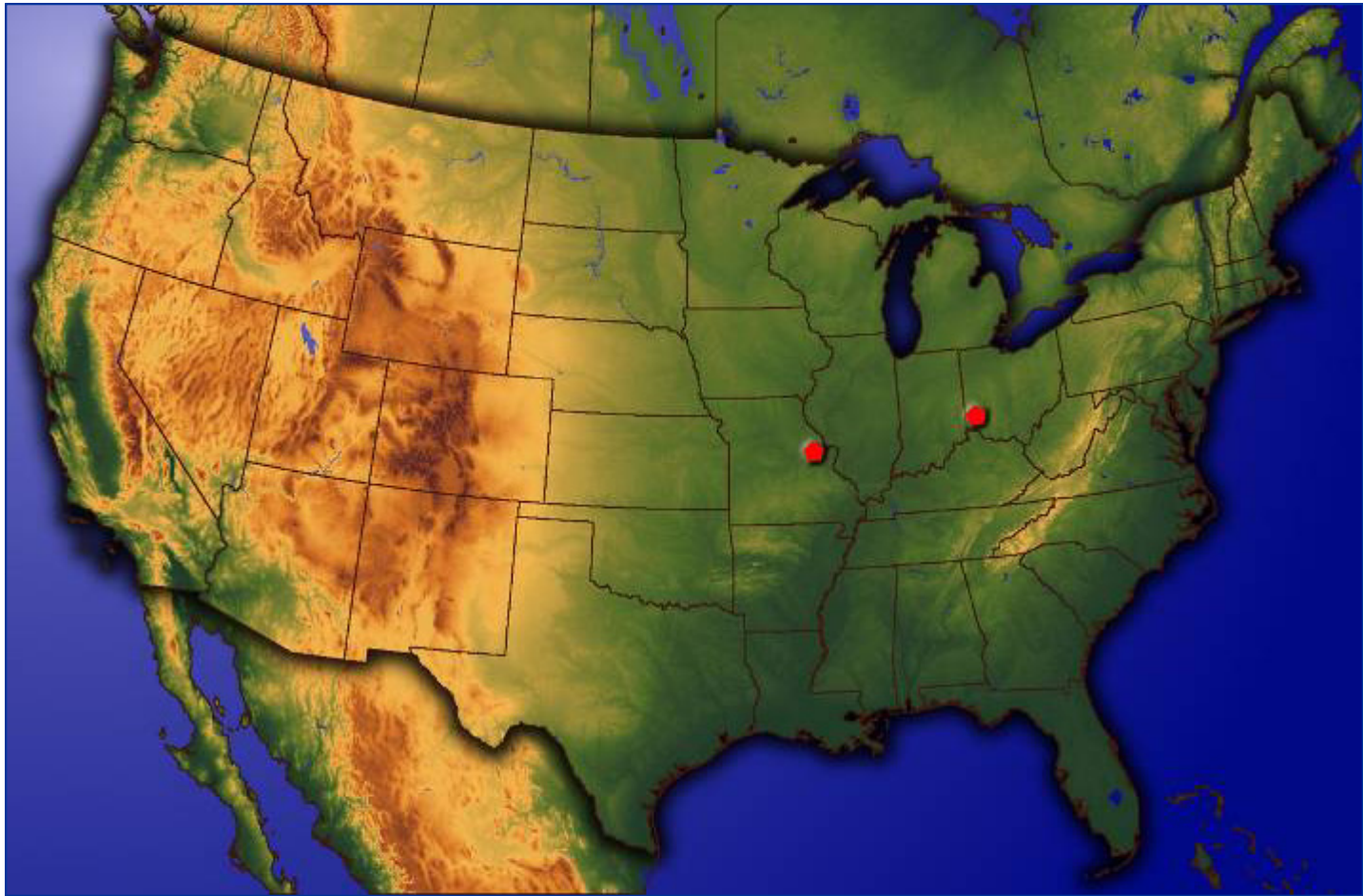
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# Office of Legacy Management



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# Fernald Preserve



October 2007



October 1995

- ◆ 1,050-acre site located in southwest Ohio
- ◆ Produced high-grade uranium metal products
- ◆ \$4.4 billion cleanup completed October 2006



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# Weldon Spring Site



- ◆ 228-acre site located 30 miles west of St. Louis, MO
- ◆ Uranium refinery operated 1957-1966
- ◆ Site remediation performed 1986-2002



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# Fernald Preserve



**As a community asset, the Fernald Preserve will foster wildlife habitat and provide educational opportunities through environmental stewardship.**

- ◆ Nature Preserve with a visitors center
- ◆ Open to public
- ◆ Continuing groundwater cleanup
- ◆ Ecological restoration
  - Native vegetation
  - Wildlife promotion



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# Weldon Spring Site

**The Weldon Spring Site offers educational and recreational opportunities for the community while maintaining a comprehensive long-term surveillance and maintenance program.**

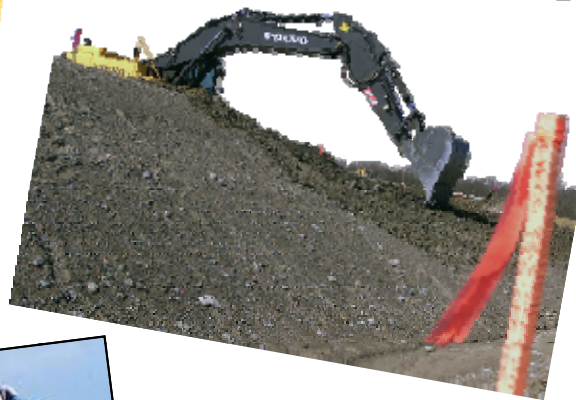


- ◆ Groundwater monitoring, leachate treatment, and disposal-cell inspections conducted
- ◆ Site open to the public 24/7
- ◆ Interpretive Center open 7 days a week; had 25,000 visitors in 2010



# Ecological Restoration RemedyProtection

**Extensive soil removal and grading activities during remediation necessitated a sustainable landscape that resisted erosion and fulfilled the required cleanup remedy.**



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# Ecological Restoration Wetlands



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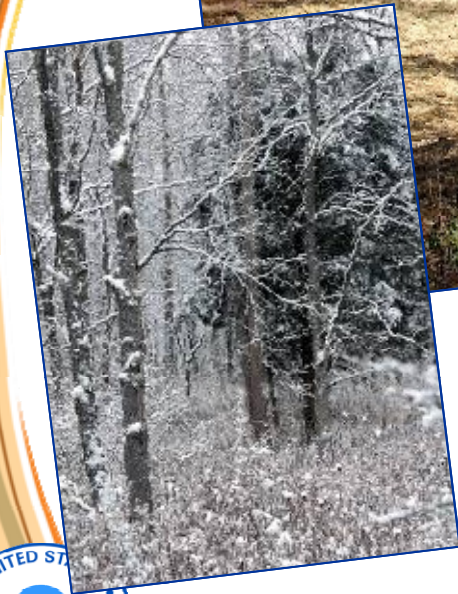
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# Ecological Restoration Forests



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# Ecological Restoration Prairies



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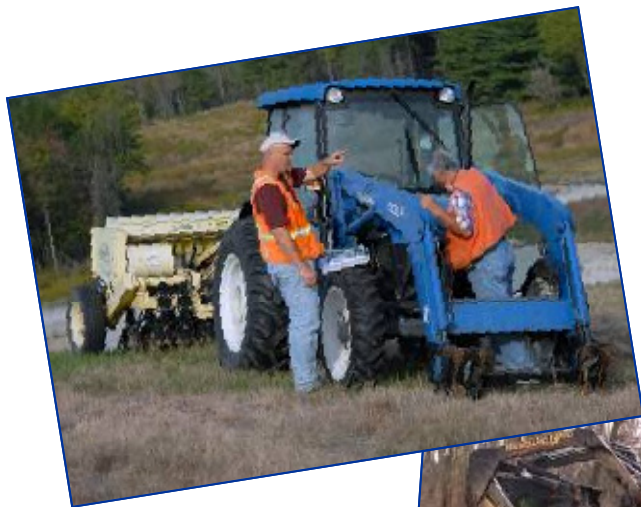
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# Fernald Preserve Experience



- ◆ Seeded approximately 450 acres including On-Site Disposal Facility
- ◆ No-till seed drill
- ◆ Cleanup dictated seeding schedule
- ◆ Noxious weed and animal intrusion



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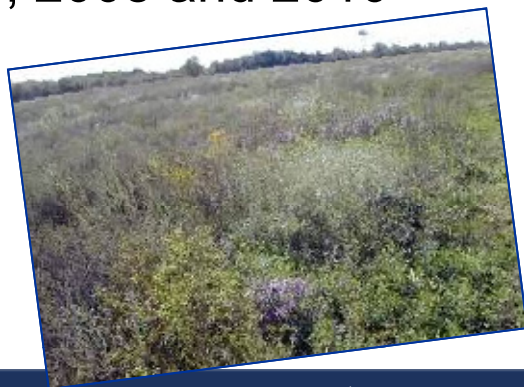
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# Weldon Spring Experience

- ◆ Seeded 150 acres with 80 species (Missouri ecotype)
- ◆ Major seeding events: 2002–2004; isolated seeding: 2005–present
- ◆ Invasive weed control necessary for several seasons; poor soil quality limited significant growth
- ◆ Erosion repair performed early in establishment process; channels currently filling in naturally
- ◆ High mowing performed initially; prescribed burning performed in 2006, 2008 and 2010





# Native Grasses and Forbs

- ◆ Provide excellent erosion control



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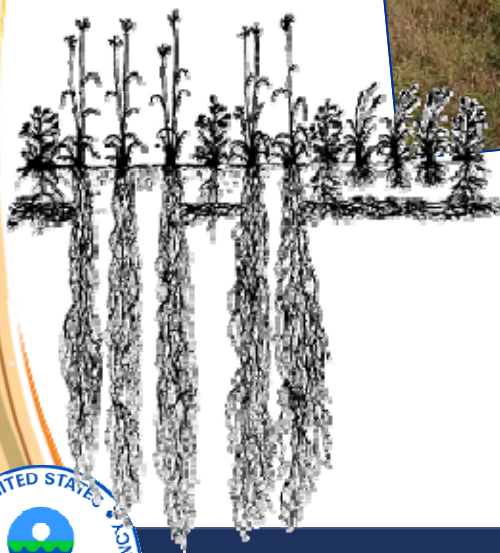
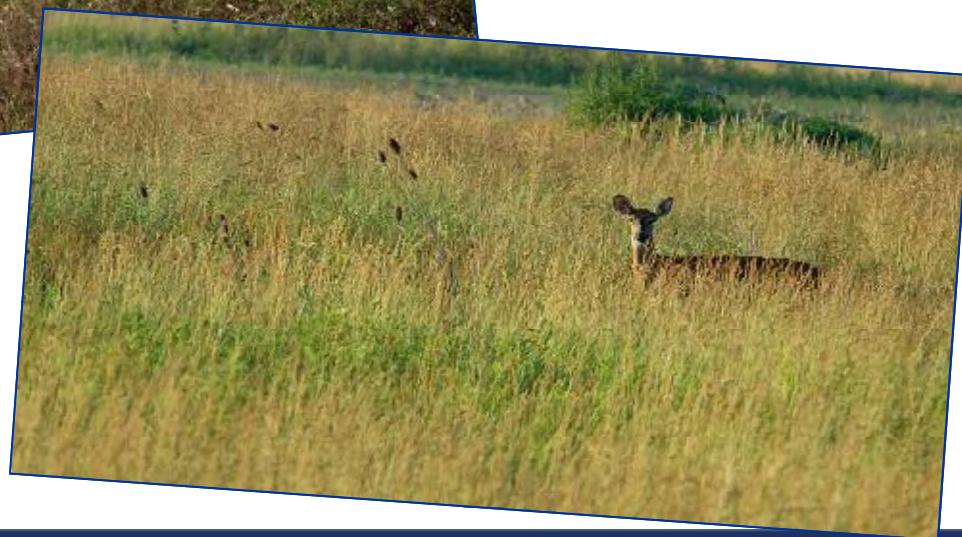
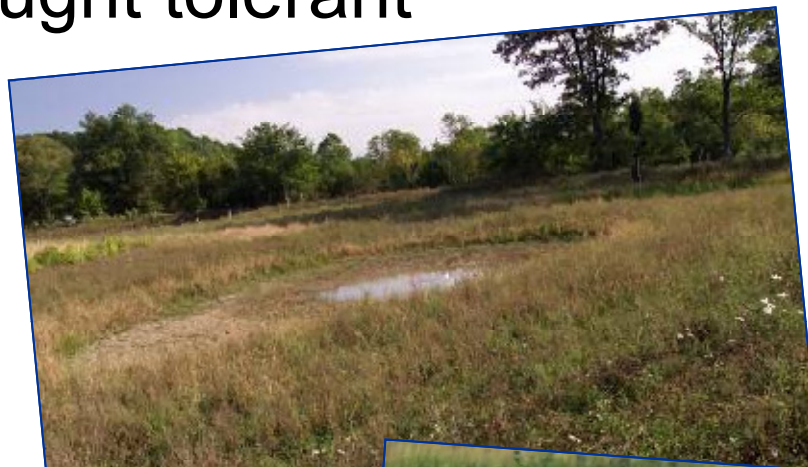
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# Native Grasses and Forbs

## ◆ Drought tolerant



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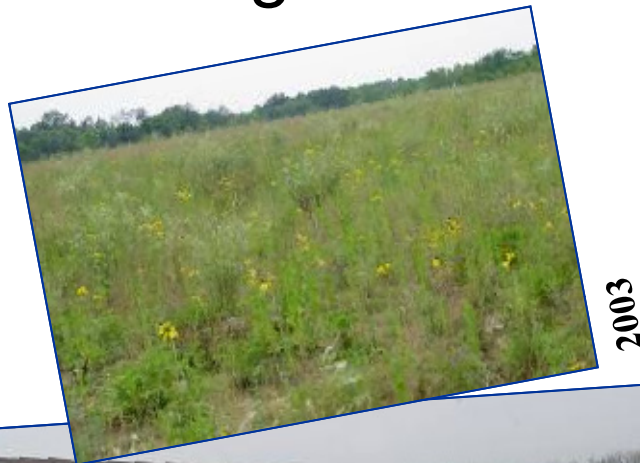
# Native Grasses and Forbs

- ◆ Optimized for existing nutrient conditions



# Native Grasses and Forbs

- ◆ Take longer to establish



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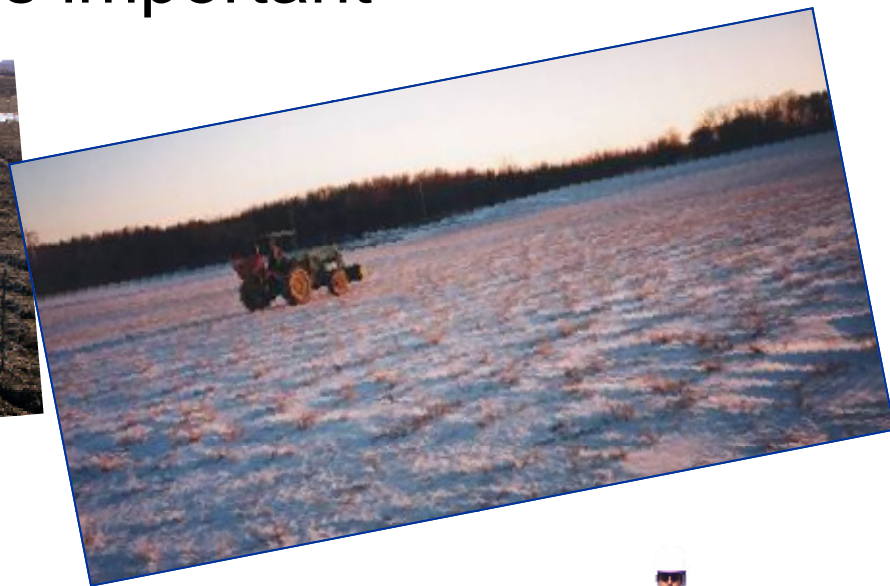
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# Native Grasses and Forbs

- ◆ Timing of seeding is important



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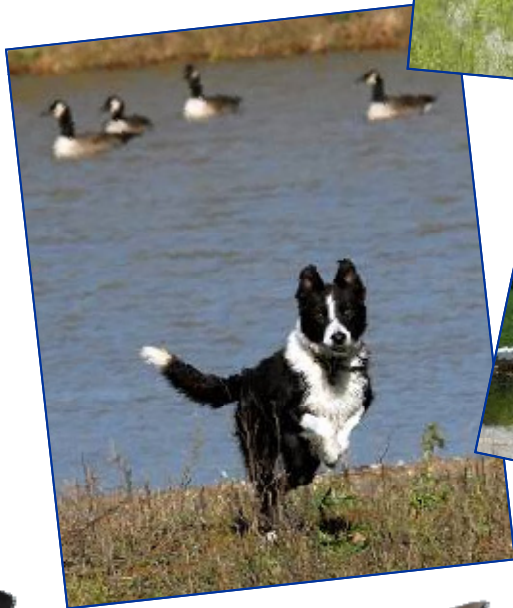
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# Native Grasses and Forbs

- ◆ Additional maintenance required until established



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# Native Grasses and Forbs

- ◆ Higher seeding and establishment costs are offset by lower long-term maintenance costs



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# Conclusion

- ◆ Ecological restoration goals have proven to be complementary to remediation goals





# Contact Information

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