

Improving NEPA Documentation for Objective Decision Making in Ecosystem Restoration and Endangered Species Recovery on the Missouri River: The Benedictine Bottoms Case Study



Tim Fobes



August 2011

Recurring NEPA Document Comment on MO River Restoration Projects

- “Pre-decisional Alternative Selection”
 - Where’s the Science/Engineering?
 - Needs More Objective Evaluation/Comparison

Problems with Ecosystem Restoration NEPA Documents

- Poor Documentation
 - Unclear Goals and Objects
 - Lacking Project Constraints
 - Lacking Full Range of Measures Considered
 - Lacking of Screening Criteria and Screening
 - Unclear Alternatives Formulation Process
 - Lacking Objective Alternative Evaluation/Comparison
 - Lacking Alternative Re-formulation

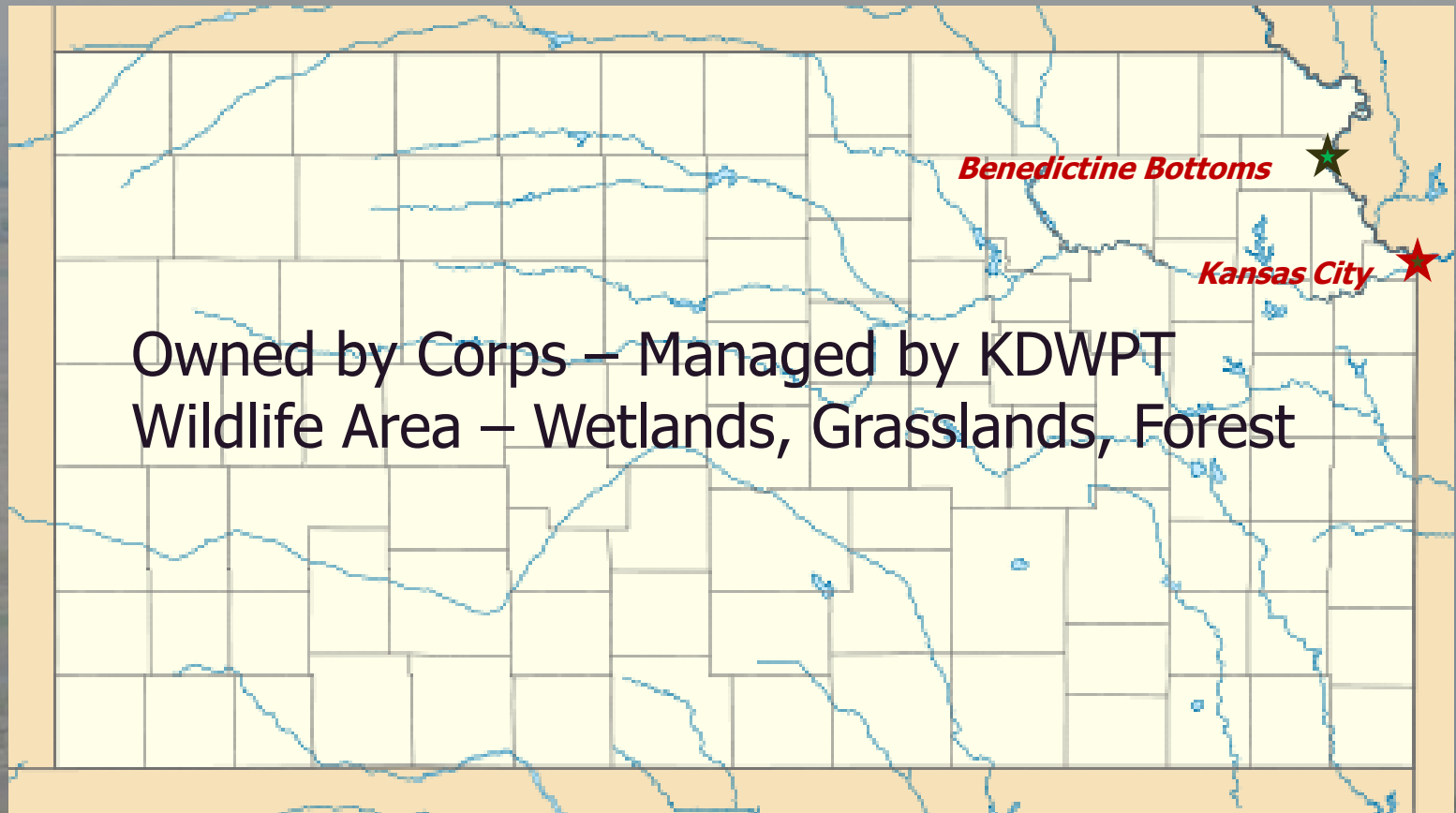
Benedictine Bottoms NEPA Case Study

- Missouri River BSNP Fish & Wildlife Habitat Mitigation
- ESA Compliance - Pallid Sturgeon SWH Habitat



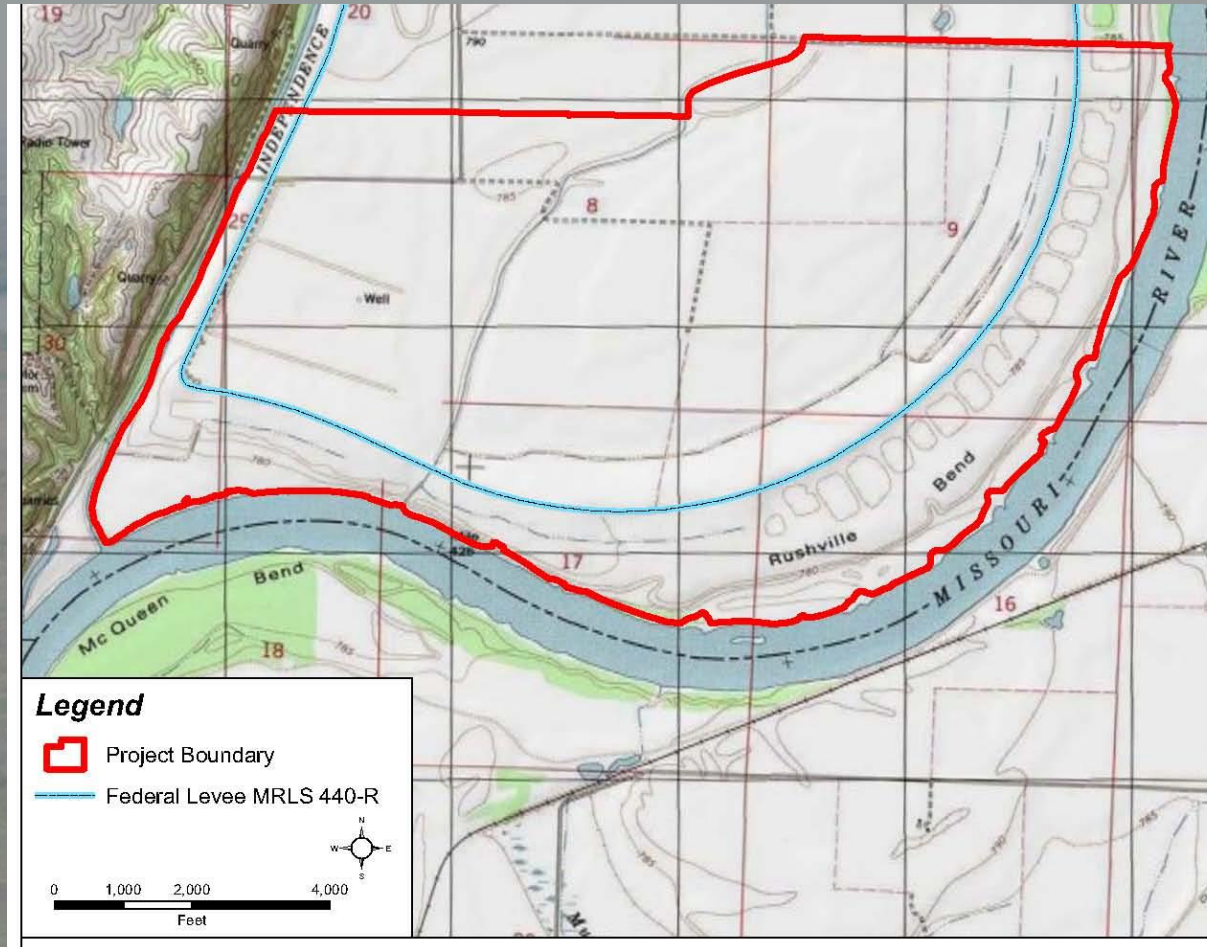
Photo courtesy of USFWS

Benedictine Bottoms Overview



Owned by Corps – Managed by KDWPPT
Wildlife Area – Wetlands, Grasslands, Forest

Benedictine Bottoms Overview



Benedictine Bottoms Overview



Improving NEPA Documentation

- Tell The Story
 - Clear Program/Project Goals and Objectives
 - Constraints - Technical, Social, Cost
 - Full Range of Measures
 - Screening Criteria and Measure Screening
 - Alternative Formulation
 - Objective Alternative Evaluation and Comparison
 - Alternative Re-formulation

Benedictine NEPA Documentation

- Program Objectives (BSNP Habitat Mitigation)
 - Species and Habitat Diversity
 - Reconnect River to Floodplain
 - Optimize Habitat Conditions for Each Site
- Project Objective (ESA BiOP Requirements)
 - Maximize Shallow Water Habitat Pallid Sturgeon
 - Native MO River Fish Habitat Research

Benedictine NEPA Documentation

- Constraints
 - Federal Levee/Underseepage Considerations
 - Existing Habitat
 - Navigation Channel
 - Adjacent Private Property

Benedictine NEPA Documentation

- Full Range of SHW Measures
 - Single Flow-through Chute
 - Independence Creek Flow-through Chute
 - Independence Creek Braided Mouth
 - Full Excavation of River Bank
 - Removal of River Training Structures
 - Perpendicular Secondary Tieback Chutes
 - Secondary Tieback Chutes
 - Levee Setback
 - Backwater Areas
 - Oxbow Lake
 - Bench Cuts

Benedictine NEPA Documentation

- Screening Criteria
 - Maximize Shallow Water Habitat (Pallid Sturgeon)
 - Reflects Native Fish Habitat Development Research
 - No SWH Development within 1,000' Levee
 - Avoid/Minimize Impacts to Existing Mitigation Habitat
 - No Adverse Effects to Navigation
 - No Adverse Effects to Adjacent Private Property

Benedictine NEPA Documentation

■ Screening

- Single Flow-through Chute - > 1,000' from levee
- Independence Cr. Flow-through Chute – habitat recomm.
- Independence Cr. Braided Mouth – uncertain SHW benefits
- Full Excavation of River Bank – nav. channel impacts
- Removal of River Training Structures - nav. channel impacts
- Perpendicular Secondary Tieback Chutes – hydraulic/habitat
- Secondary Tieback Chutes – habitat recomm.
- Levee Setback –don't provide SWH; costs
- Backwater Areas – habitat siltation concerns
- Oxbow Lake – levee and connectivity challenges
- Bench Cuts – habitat recomm.

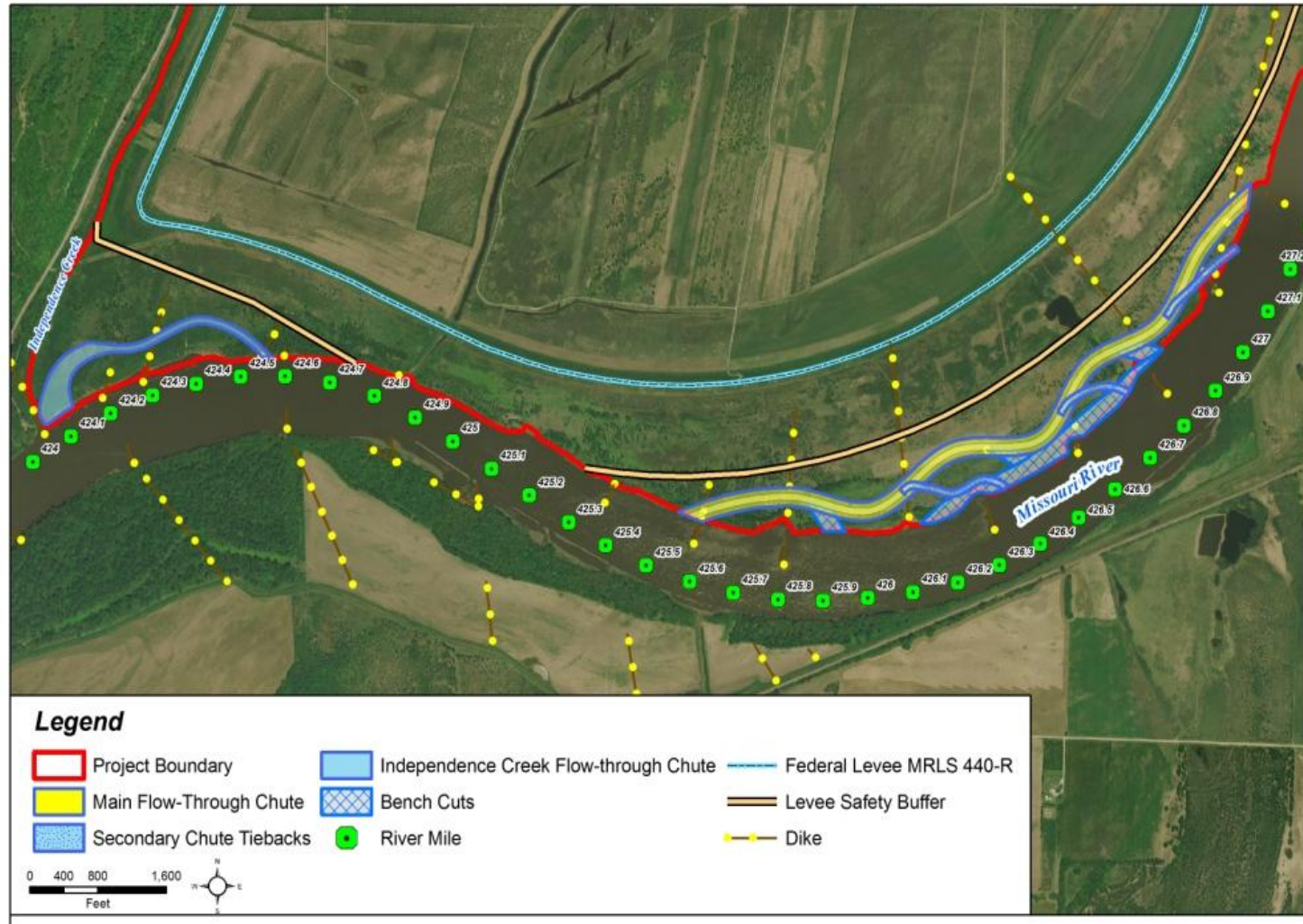
Benedictine NEPA Documentation

- Alternative Formulation
 - Single Flow-through Chute
 - Independence Creek Flow-through Chute
 - Single and Independence Creek Flow-through Chutes
 - Single Flow Through Chute w/ Bench Cuts
 - Single Flow-Through Chute w/ Secondary Tieback
 - No Action

Benedictine NEPA Documentation

- Objective Alternative Evaluation and Comparison
 - Meet Program and Project Objectives
 - Meet Native Fish Habitat Development Research Recommendations
 - Compatibility with Project Constraints
 - Maximizing Shallow Water Habitat Outputs
- Alternative Re-formulation

Benedictine Final Alternative





QUESTIONS??

Contact: tim.fobes@hdrinc.com