DEVELOPING AND IMPLEMENTING LOCALLY LED WATERSHED RESTORATION AND PROTECTION STRATEGIES: THE KANSAS WRAPS PROGRAM

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WRAPS STEERING COMMITTEE & CO-AUTHORS

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- Kyle Mankin, BAE (Watershed Modeling)
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EXIT

Advantages of Participatory Approaches

- Shared responsibility and local ownership result in greater impact
- Better, more cost effective solutions are identified
- “Co-learning” results in more efficient implementation

Our Goal: Design and Implement a Process

- Relies on stakeholder participation and local leadership
- Meets government requirements for watershed planning
- Provides a framework for collective action

Two Important Aspects

- The PROCESS, in which stakeholders are better informed, engaged, and motivated to action
- The REPORT, a document that summarizes the condition of water resources, the water quality goals, and the actions needed to meet the goals

Four Phases

- Development
- Assessment
- Planning
- Implementation

Local Communities

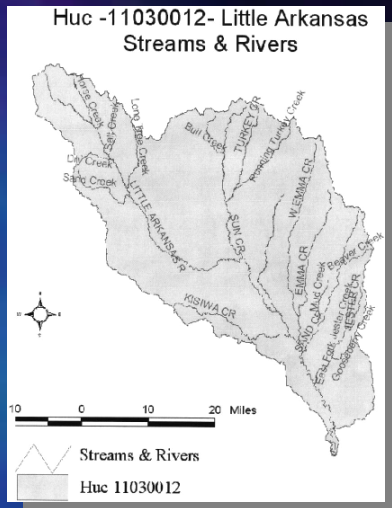
Inputs:
- Leadership
- Responsibility
- Management of Resources

Inputs:
- Science-based information
- Education
- Communication
- Technical Assistance
- Financial Assistance

Agencies
- KDHE
- KWO
- SCC
- NRCS
- KSR&E
- Conservation District
- KFS

Steps Towards Watershed Restoration and Protection:

- Building Awareness and Education
- Local Engagement and Leadership
- Assessment
- Planning
- Implementation
- Monitoring and Evaluation



Ultimate Outcome: Watershed Restoration and Protection "Locally Led and Driven"

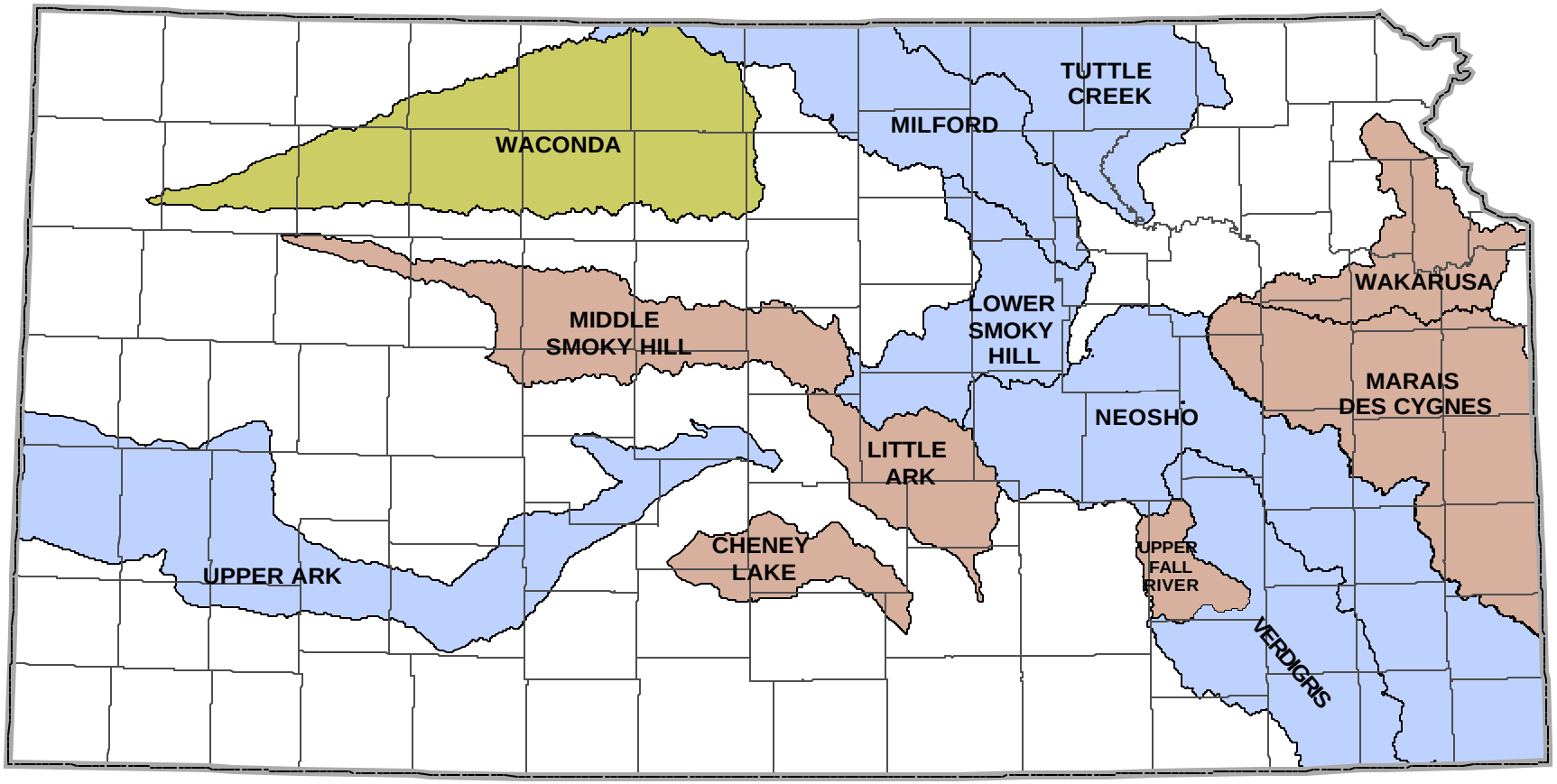
Characteristics
- Sustainable water source for drinking and domestic use
- Recreation opportunities
- Biodiversity
- Sustainable food, fiber, and timber production
- Minimal damage from flooding, urbanization, and industrial production

INPUTS FROM K-STATE: TECHNICAL SUPPORT TEAM

- Community Organizer/Planner – support for development and planning
- Information Specialist – GIS support, technical information, report preparation
- Watershed Modeler – watershed assessment, targeting, scenario testing
- Watershed Economist – cost/benefit analyses of BMPs, market based approaches
- Urban BMPs – support for cities in assessment and implementation

EXTENSION WATERSHED SPECIALISTS

- Seven full-time extension watershed specialists located in high priority watersheds facilitating process, working on implementation, and being a local resource
- All are former county agents



Development Projects

Assessment Projects

Implementation Projects

WRAPS Projects With K-State Involvement

Development (1-3 months)

- Identifying key stakeholders
- Evaluation of stakeholder interest, commitment, needs
- Identifying and organizing a local leadership team
- Generating public interest and recruiting participation

Generating Public Interest

How do local people VALUE water?

Engaging the Public

- Public Education
- Public Participation
- Public Relations

Assessment (3-24 months)

- Identifying important local water resources and threats
- Compiling existing information on water resources and threats
- Determining condition of water resources and causes/sources of impairment
- Watershed modeling
- Identifying information needs

Water Quality Impairments Due to Cattle

Adaptive Management Modeling

First Approximation
Simple, Coarse Scale Model

Second Approximation
Same or Different Model

Third Approximation
Identify Target Areas

Fourth Approximation
Test Implementation Scenarios

Fifth Approximation
Compare Observed Results to Model

Planning (3-12 months)

- Soliciting stakeholder involvement and input
- Identifying water quality goals
- Identifying actions/interventions
- Developing an implementation plan
- Evaluation of stakeholder commitment

Means of Getting Stakeholder Input

- Tour
- Workshop or Public Meeting
- Focus Groups
- Water Festival

Goal 1a: Reduce cropland and streambank erosion to reach water quality goals of DO> 5mg/L, BOD< 3.5mg/L, TDS< 808mg/L, and TSS< 101mg/L in rivers and lakes

- 786,111 acres cropland in Big Creek and Middle Smoky Hill watersheds that can use additional BMPs
- 975 stream miles in Big Creek and Middle Smoky Hill watersheds that can use additional erosion protection

Implementation of BMPs	Actions in support of BMP implementation	Time frame	Estimated costs	Implementation Targets	Percent P, N, and TSS Reduction in Runoff [a]	Cooperating Agencies
1a.1 Establish vegetative buffer strips for general erosion control.	Cost share programs	2005-2015	$6,288,880.00 ($80.00 per acre [b])	**Target:** Increase use of BMPs by 78,611 acres/year	50% P 35% N 50% TSS	CD, KDHE, NRCS, KSRE, SCC
1a.2 Move seasonal and/or concentrated feeding and watering sites away from streams.	Cost share programs	2005-2015	$48,000.00 (Average cost per site= $4,000.00 [b])	**Target:** 55 contacts per year resulting in 12 contracts per year	NA	CD, KDHE, NRCS, KSRE, SCC
1a.3 Relocating confined feeding facilities including seasonal sites	Cost share programs	2005-2015	$372,000.00 (Cost per site=$12,000 to $50,000 depending on size of facility to be moved [b])	**Target:** 55 contacts per year resulting in 12 contracts per year	NA	CD, KDHE, NRCS, KSRE, SCC

Implementation (1-10 years)

- Maintaining local leadership and interest
- Identifying and securing collaboration
- Identifying and securing funding sources
- Implementing actions
- Evaluating progress
- Recognition and celebration

Alternate Water Supply

- 60 alternative water supplies
- 6 riparian areas fenced
- 16 moved or changed winter feeding practices

Improvements in Confined Cattle Feeding

- 130 new constructions, renovations, or moved to better site
- 52 vegetative filter strips adjacent to confined feeding areas
- 10 improvements in manure storage
- 7 improvements in land application of waste

CROPLAND BMP IMPLEMENTATION

- 42 Producers implemented atrazine BMPs on 4,883 a in one watershed; this represented about 60% of the grain sorghum producers in the watershed, and about 80% of the acreage
- 6 grassed waterways
- 5 terraces
- 4 vegetative filter strips

WRAPS Report

- Water quality conditions
- Water quality goals
- Implementation plan
- Process description
- Appendix

Summary

- The key to sustainable water resources is watershed restoration and protection strategies that are locally led and driven
- The process is nonlinear and includes local awareness and education, local engagement and leadership, assessment, planning, implementation and monitoring and evaluation
- Key local inputs include leadership, responsibility, management, time, and financial resources
- Key university or government inputs include science-based information, education, technical assistance, and financial assistance

Success Depends On:

- Identifying and supporting strong local leadership
- Integrating local and “outside” inputs
- Adequate resources

  - knowledge

  - organization

  - finances

  - time