WETLAND WATERSHED MANAGEMENT PLAN

FOR THE
KINGFISHER CREEK WATERSHED, KINGFISHER COUNTY, OK

September 2005

Preface

Adoption of Wetland Management Plan:
Recognizing the utility of a watershed plan for wetlands management and their role as local decision makers, the Kingfisher County Conservation District Board of Directors endorse this management plan and adopt it as a supplement to their annual work plan.

Introduction

The Kingfisher Creek Watershed, approximately 331 square miles, is located in Kingfisher County in central Oklahoma, about 35 miles northwest of Oklahoma City. Kingfisher Creek is approximately 44 miles in length and flows through the City of Kingfisher to the Cimarron River. Primary land use within the watershed is agricultural (cropland, pastureland and rangeland); water users are landowners, a state vocational-technical school and rural water districts. Elevation in the county ranges from 1,000 feet above sea level along the Cimarron River to approximately 1,500 feet in the southwestern corner of the county.

Flood plains, or alluvial lands make up approximately 16 percent of Kingfisher County especially associated near and around the Cimarron River. The alluvial lands are prime areas for wildlife and wetlands enhancement. Historically, sportsmen and private landowners have worked with state and federal agencies on wildlife habitat enhancement projects such as Partners for Wildlife Program.

This watershed has been under-valued locally due to problems associated with erosion, flooding, infrastructure damages and resulting devaluation of property in an agriculture-based economy. Recent interest among local, state, and federal entities in a watershed management plan includes the City of Kingfisher earmarking $150,000 for watershed management purposes.

The goals of the Kingfisher Watershed Management plan are to build non-traditional watershed partnerships and together show how to maximize long-term conservation benefits on the watershed-based principle. The management plan will demonstrate and illustrate how to improve the Kingfisher Creek Watershed. The watershed will be made better through the reestablishment of riparian corridors, wetland restoration and development of wildlife habitat.

The Kingfisher County Conservation District has experience in watershed planning including eight watershed protection and flood prevention (Public Law 566) projects. These upstream flood control projects included implementation of land treatment practices on at least seventy percent of their watersheds. These practices included, but were not limited to, riparian corridor restoration to minimize erosion. The conservation district understands the need for district support and involvement in planning and management of local wetland resources. There are a number of local groups whose interests span the spectrum from flood loss reduction to waterfowl habitat enhancement.

The Wetland Watershed Management Plan has been developed as a dynamic document that will be revised, when necessary, to incorporate the latest information, address new strategies, and define new partnerships between watershed shareholders. Also, it is understood that the wetland goals set forth in this management plan, as well as the technical approach to address the goals, may not be comprehensive and it may be necessary to revise or expand them in the future.

Federal and state funding allocations for future wetland projects designed to address Kingfisher Creek watershed problems should not be based solely upon their inclusion in this management plan, rather the management plan should be considered a "focal point" for initial planning and strategy development.

In order for this Wetland Watershed Management Plan to become an integral part of the entire watershed protection and restoration ideal, it must be amenable to revision and update. It is anticipated that at least biannual revisions may be necessary, and that the responsibility for such revisions will rest primarily with Kingfisher County Conservation District with support from the Oklahoma Conservation Commission and the Kingfisher County Work Group.

I. Public Outreach:

The Kingfisher County Conservation District (KCCD) was founded on the principles of locally led conservation and the notion that local land users have a better understanding of and greater concern for local resource issues than anyone else. The KCCD is committed to achievement of long-range conservation by empowering landowners with the knowledge and information to make wise decisions about the best use of their natural resources.

A. Development of Wetland Management Plan:

The KCCD enlisted the help of partner agencies and landowners to form a wetland advisory committee that would provide input into the development of a watershed based wetland management plan. This plan is intended to guide all conservation planning related to wetland resources that is provided through the KCCD. Members of the committee included KCCD staff, the Oklahoma Conservation Commission (OCC) Wetland Programs Coordinator, Natural Resources Conservation Service (NRCS) local field office staff, the Oklahoma Department of Wildlife Conservation (ODWC) Wetland Habitat Coordinator, the City of Kingfisher, and local landowners with diverse wetland interests. By cooperating with technical specialists with a broad range of expertise, the KCCD hopes to provide its cooperators with the most comprehensive, science-based conservation planning possible.

The Kingfisher County Conservation District organized the first Kingfisher Creek watershed partners meeting on August 19, 1998. The purpose of the meeting was to discuss alternative funding and treatment for flooding, water quality problems and wildlife habitat enhancement. There were approximately 30 in attendance representing the following partners: Kingfisher County Commissioners, The City of Kingfisher, Natural Resources Conservation Service, Oklahoma Conservation Commission, Oklahoma Dept. of Wildlife Conservation, Ducks Unlimited, Bureau of Indian Affairs, Oklahoma Water Resources Board, U.S. Army Corp. of Engineers, U.S. Fish and Wildlife Service, Blaine County Conservation District, Oklahoma Dept. of Environmental Quality, Cimarron Valley Conservation District, Blaine County Commissioners, East Canadian Conservation District, Chisholm Trail Vo-Tech, Oklahoma Wildlife Federation and local landowners. Many of the partners represented at meeting have worked together for numerous years on varied projects, but this is first time all have partnered to work on a joint project.

Through a series of meetings, the committee considered wetland protection priorities, identified major concerns, and laid plans for extensive outreach efforts. In addition to the management plan, the committee recognized a strong need to educate current and potential landowners about wetland management issues, as well as success stories and program information.

B. Implementation of Wetland Management Plan:

Due to the interrelatedness of the various agencies and similar program objectives, this management plan affords local decision makers the flexibility needed to assist customers with alternatives. An integrated approach means wetland resources receive equal treatment toward common objectives. Plan development is futile without successful broad-based implementation. Concerted plan implementation by cooperating agencies will be carried out as follows.

KCCD – Serves as local landowner point of contact for assistance with wetland issues. Also serves an advocate role, providing local resource concern assessment, program planning and implementation guidance, and outreach.
OCC – Provides funding for basic district functions, assists local conservation districts in providing quality customer assistance and programs, guides educational activities including grants management. Through OCC, USEPA has provided educational materials and funding for wetland projects within the county.
NRCS – Works through local conservation districts to provide primary technical assistance with resource concerns to customers. Also provides program (WRP) implementation and outreach.

U.S. Fish & Wildlife Service (USFWS) – Offers Partners for Fish & Wildlife Program implementation to landowners and assists LCCD on wetland projects, including youth education.
ODWC – Works with USFWS to provide matching funds for Partners and other special projects through implementation of its Wildlife Habitat Improvement Program (WHIP). Provides technical assistance to LCCD on special projects and youth education.
Local Work Group (wetland advisory committee) – Provides input to KCCD on current resource concerns and wetland protection priorities. Periodically meets to reevaluate and update management plan and/or other special projects related to wetland resources.
Other Partners –
The following organizations and individuals have expressed interest and are eager to participate in the proposed Kingfisher Creek Wetland Enhancement Demonstration Project.
Blaine County Conservation District
Cimarron Valley Conservation District
East Canadian Conservation District
Blaine County Commissioners
Kingfisher County Commissioners
Canadian County Commissioners
Oklahoma Wildlife Federation
U.S. Army Corp. of Engineers
Oklahoma Dept. of Environmental Quality
Bureau of Indian Affairs
Oklahoma Water Resources Board
Chisholm Trail Vo-Tech
Local landowners

II. Wetland Assessment and Mapping:

A. Assessment

Local government-wide wetland and watershed protection efforts to date have been based upon overall, general assessment of wetland functions and values, natural hazards, soil suitability for development, costs of public services, and other factors. More detailed analyses of the functions and values of specific wetlands are typically undertaken by local governments only if fills or drainage are proposed for specific wetlands and such activities are conditionally permitted under regulations. It would be time consuming and impractical to assess every wetland in a watershed just for the sake of assessment. However, it is important to use an accredited assessment method to determine the functions and values of

reference wetlands. For instance, when alterations are proposed for a wetland, an assessment would be important to determine potential losses so that proper mitigation could be conducted.

Functional assessment methods are used to represent the relationship between functional capacity and characteristics of wetlands. Wetland assessment approaches can help determine the role a wetland plays in its environment and the importance of its protection. A desire for improved wetland assessment methods has resulted in the development of many rapid assessment approaches in the United States and around the world since 1990. A trend has developed among these methods where specific functions are not evaluated and a smaller number of indicators are used to evaluate functions. However, none of these methods are used on a widespread basis. The validity of wetland assessment methods is limited by several factors, including complex processes that support wetland function; lack of information about these processes; large variability among wetlands; many components of wetland value that must be accounted; and diversity of assessment objectives.

Currently, an assessment method has not been selected for use in Kingfisher County. The adoption of an accepted assessment method by the state may be necessary before one is used on a widespread basis.

B. Mapping

Many government agencies, consultants, and others are using Geographic Information Systems (GIS) and computer-based hydrologic models to assist the analysis of water regimes, the mapping of wetlands (where digital data is available), the assessment of the functions and values of wetlands, and the design of projects including assessment of alternative designs. Such systems are proving useful as more digital data becomes available and the costs of data storage and analysis are reduced. However, there are financial and other limits to accuracy and types of ecosystem and hydrologic data typically available for GIS analysis. GIS analysis must, therefore, be combined with some measure of continued on-site data gathering and analysis.

An inventory of watershed resources of Kingfisher Creek was the first request of the working group. GIS technology was determined to be the best way to show the spatial relationship and inter-relationship of the inventoried resources. Those items that need to be inventoried include but are not limited to land use, hydric soils, surface waters, hydrologic drainage patterns, subwatershed boundaries, flood control structures, Wetland Reserve Program sites, Partners for Wildlife Program sites, designated wetlands from the National Wetlands Inventory, and NRCS wetlands inventory. Note that not all of this information is available digitally.

Maps prepared with GIS technology will be used as the primary planning tools. Organizing and manipulating data for use as a visual tool will be beneficial to show all advisory group members the issues in the watershed. In addition to information, the maps may serve as catalysts to individual landowners discussing issues as a watershed community rather than individually.

III. Define Wetland Problems:

The watershed has been under-valued locally due to problems associated with erosion, flooding, infrastructure damages and resulting devaluation of property in an agriculture-based economy. There are many problems in the Kingfisher Creek watershed ranging from flooding to wildlife habitat loss in part due to wetlands loss.

A. Problems to address:

By drawing from a host of different perspectives and both positive and negative management experiences, the wetland advisory committee identified wetland resource concerns and management problems common to Kingfisher County as follows:

- Loss of wetland acreage
- Erosion and sedimentation
- Increased flooding intensity, duration and frequency
- Loss of wildlife habitat
- Elevated nutrient concentrations degrading aquatic health
- Poor grazing/planting practices
- Urban growth
- Streambank stabilization
- Salt cedar control

B. Sources and their Contributions:

Wetland advisory committee members agreed that the common thread among the problems they identified was drainage. Achieving and maintaining proper drainage through efficient management is essential to alleviating these problems.

1. Wetlands have been lost in the past by conversion for agricultural purposes or development.
2. Erosion problems can be caused by several factors, including the loss of wetlands and riparian vegetation, runoff from urban development, and improper land management.
3. More runoff is caused by concrete/urban development upstream. Excess runoff doesn't filter into the ground, contributes to nonpoint source pollution and water quality problems. Also since some wetlands have been lost, there is less flood storage.

4. Loss of wetland and riparian vegetation decreases the available habitat for wildlife.
5. Over fertilization in both agriculture and urban settings, cattle in streams and wetlands, and lack of riparian buffers can lead to elevated nutrients in streams and wetlands degrading aquatic health through excess algal growth and death, decreasing dissolved oxygen levels.
6. Planting practices that remove all vegetation that can slow surface water runoff and grazing practices that overgraze, allow cattle access to streams and destruction of riparian areas increase the amount of surface water runoff, sediment, and nutrients entering streams and wetlands.
7. As cities and towns grow more land area becomes developed, this not only decreases the amount of habitat available to wildlife but also increases the amount of impervious surface, increasing surface water runoff and flooding.
8. Loss of riparian vegetation has resulted in increased erosion and destabilized streambanks. This can lead to the loss of land and clog streams with excess sediment, decreasing habitat for aquatic species.
9. Salt cedars are a hardy, introduced species that are able to inhabit areas that have been disturbed, displacing native vegetation.

IV. Action Plan:

A. Conservation Planning:
With interest in wetland programs increasing over the last few years, the LCCD and local NRCS field office staff have been preparing conservation plans according to NRCS standards and specifications, state technical committee recommendations, and program objectives and guidelines. This management plan is an additional tool to assist in more comprehensive planning efforts. Conservation planners can consult the problems described in Section III and implement solutions on a case-by-case basis when developing wetland conservation and restoration plans. Since these programs are implemented on a voluntary basis, it is difficult to identify specific sites that will be targeted for future implementation. However, after a wetland prioritization map is completed, it can be used as a guide show where wetland conservation efforts would be most beneficial.

B. Designate Priority Areas Based on Degree of Problems:
Development of digital data for maps, especially wetlands maps, will be vital for performing GIS manipulations to designate priority areas. For instance, flooding is not necessarily an isolated problem along Kingfisher Creek, but in one particular location it may be especially severe. By examining the factors that differentiate that location from others that have a lesser degree of flooding, such as soil conditions, historic uses, slope, sub-watershed size, etc., planning assistance can be more narrowly focused.

C. Public Education and Outreach:

The most critical obstacle to overcome in wetland protection is lack of knowledge. Historically negative attitudes coupled with lack of proven, science-based knowledge necessitate considerable outreach efforts. A recommendation of the wetland advisory committee is to publish a wetland resource guide for Kingfisher County intended for distribution to those who make decisions that affect our wetland resources, including current and potential landowners. Kingfisher County's location in the center of the state and its close proximity to a major metropolitan area attracts many investors with hunting and other recreational interests. By providing this publication to realtors, investment groups, hunting clubs, recreational organizations, and other such entities, we hope to reach potential landowners and/or land users.

The issue of assuring future protection of our wetland resources begins with youth education. The KCCD will continue to provide assistance to the six public school districts in Kingfisher County through the use of permanent outdoor classrooms, field days, traditional classroom curricula supplements, and teacher training.

Public education and outreach will also continue through the KCCD's conventional outreach methods including publication of quarterly newsletter, news articles, information dissemination at public events, and other special outreach activities.

D. Program Participation:

Objectives

1. Decrease peak flooding events in Kingfisher Creek by 15% within 10 years.
2. Decrease nutrients loading in Kingfisher Creek watershed by 30%.
    a. Includes agricultural runoff, treated wastewater, etc.
3. Increase habitat for native fish and wildlife by 20%.
    a. Including wetland restoration, riparian areas, open range, healthy stream ecosystems, etc
4. Increase riparian acreage by 50%.
5. Increase wetland acreage by 25%.
6. Increase streambank stability, thereby decreasing soil erosion along banks and decreasing sediment transport requirements by the stream.
7. Increase enrollment in conservation programs by 20%.
    a. Ex: Conservation Reserve Program, Wetlands Reserve Program, etc.
8. Increase number of watershed residents involved in conservation education by 200%.

Coordinated outreach efforts should encourage landowner use of the various wetland programs, and demonstrate the benefits of voluntary participation. A committee led by the project manager will seek interested landowners with sites appropriate for demonstration purposes. The sites should be ones that will:

1. Improve water quality by breaking down, removing, using or retaining nutrients, organic waste and sediments carried by runoff within the watershed.
2. Reduce the severity of flooding downstream by retaining water and releasing it during drier periods.
3. Protect streambanks and shorelines from erosion by slowing runoff.
4. Recharge groundwater potentially reducing water shortages during dry periods.
5. Provide fish and wildlife (including some rare and endangered species) food habitat, breeding ground, and resting areas.
6. Increase opportunities for recreation such as bird watching, waterfowl hunting, fishing, and outdoor education.

The Natural Resources Conservation Service will do the technical planning for the Kingfisher Creek management plan using the expertise of the Area Engineer and various personnel from Oklahoma Department of Forestry, U.S. Fish and Wildlife Service and from the Conservation Districts involved.

A meeting and tour will be held so that the watershed partners have a chance to view problems in the watershed prior to implementation of conservation practices.

A budget committee consisting of the partners who will have money, in kind products or services involved will meet and outline a budget and cost-share levels for the cost-share portion of the plan.

Implementation of all watershed management components on the selected projects will be done by a combination of private contractors, conservation district employees, landowners and other partners involved.

Partnership meetings will be held to review progress of the projects and to set goals for the next year.

Involved partners will continue to use the demonstration sites for outdoor classrooms where students and adults can learn about the benefits of proper watershed management and a variety of other natural resource topics.

V. Current and Past Projects:

- Completed tasks and resulting project activities under the EPA grant project entitled “Watershed-Based Planning and Implementation for the Kingfisher Creek Watershed, Kingfisher County, Oklahoma.” (1999-2004)

- Since 1999, KCCD has held wetland field days at a privately owned wetland site in Kingfisher County. (1999-2004)

- KCCD has held natural resource days so landowners and stakeholders from the Kingfisher Creek watershed and other watersheds can to view the benefits of wetlands and conservation planning within a watershed. (1999-2004)

- U.S. Fish and Wildlife Service's Partner's for Fish and Wildlife Program has constructed three permanent wetland outdoor classroom sites in Kingfisher County. (2000)

VI. Future projects:

- Youth education will continue to focus on wetland resources. Local teachers, school administrators and students are very passionate about this type of innovative hands-on learning. This program has become a fundamental part of school curriculum and earned notoriety among the students. The KCCD has been pleased with the success of this program and the guidance it is offering to the future stewards of our wetland resources. The addition of educational tools and supplies will enhance these efforts.

- Public outreach efforts will continue to address wetland protection priorities through public information, education, and other conventional methods, including development, promotion, and distribution of a Wetland Resource Management Guide for Kingfisher County Landowners.

- NRCS and USFWS will continue to promote their respective programs to increase wetlands acreage in the Kingfisher Creek watershed to increase floodwater storage and wildlife habitat while decreasing erosion and sedimentation and also improve water quality.

- The wetlands watershed advisory committee will continue to work with the KKCD in order to implement the objectives set out in this management plan.