

# Kansas Water Plan

## Wetland and Riparian Management Policy and Institutional Framework January 2009

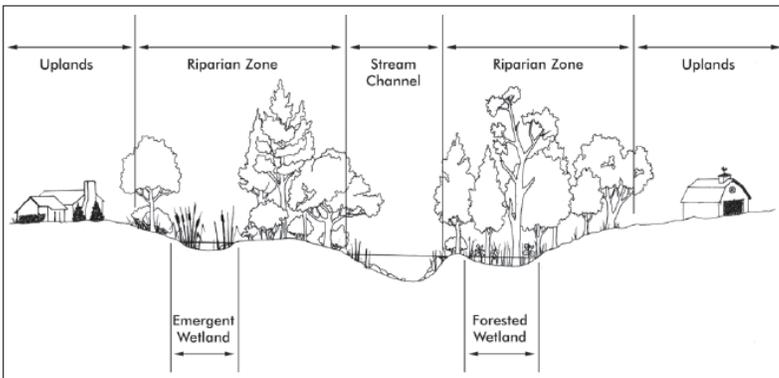
### Introduction

Concerns for the protection, restoration or enhancement of wetland and riparian areas have increased in response to greater public understanding of their ecological and economic value. Wetland and riparian areas are transitional lands between aquatic and upland locations. Wetlands include areas where standing water or wet soil conditions predominate. Riparian areas include stream-side and floodplain areas where the vegetation, soils, or topography are distinguishable from that on adjoining uplands. Figure 1 illustrates the location of riparian areas and wetlands relative to a stream channel.

Benefits derived from riparian areas include erosion and sediment control, timber production, wildlife habitat, water quality protection, recreation, and aesthetic values. Wetlands in Kansas provide unique wildlife habitat,

policy sub-section to the *Kansas Water Plan* in the Fish, Wildlife and Recreation Section titled *Riparian Protection*. The sub-section recommended the following policies:

1. Channel modifications requiring a state permit would include appropriate conditions to maintain riparian vegetation and stabilized banks as designated by the Department of Agriculture-Division of Water Resources.
2. County Conservation Districts would be required to develop county riparian protection programs to assist landowners in managing and maintaining riparian areas.
3. State provision for the use of conservation easements on riparian lands identified as crucial wildlife habitat to encourage protection and proper management.



**Figure 1. Relationship Between Wetlands, Uplands, Riparian Areas And the Stream Channel**

While all of these provisions have been implemented to some extent, riparian losses are still occurring. County riparian protection plans do not contain inventories of existing riparian areas.

In January 2007, the KWA recognized the preservation of public water supply storage capacity in federal reservoirs as a priority issue for further planning. Wetlands and forested riparian areas play vital roles in reducing sedimentation, which aids in preserving reservoir capacity. In all watersheds above these reservoirs, wetland loss is estimated between 50 and 60 percent of their original

floodwater detention, ground water recharge, and water quality benefits.

Estimates by the U.S. Fish and Wildlife Service<sup>(1)</sup> (USFWS) indicate that Kansas has lost more than 400,000 acres or nearly one-half of its wetlands since the 1780s. The vast majority of these were shallow and often ephemeral wetlands drained for agricultural use since 1950.<sup>(2)</sup> Prior to European settlement, Kansas forests were estimated to cover about eight percent of our land area compared to about four percent today. Riparian forests occurred along most of the streams and rivers, especially in the floodplains. Loss of riparian vegetation to channel modifications and streamside clearing has also been extensive in many parts of the state although estimates of these losses are not readily available.<sup>(3)</sup>

In 1986 the Kansas Water Authority (KWA) approved a

**Table 1  
Percent wetland coverage in watersheds above selected Kansas Water Supply Reservoirs.**

Reservoir	% Wetland Coverage
Big Hill	0.2
Clinton	1.2
Council Grove	0.4
Elk City	1.1
Hillsdale	2.3
John Redmond	0.7
Kanopolis	0.2
Marion	0.02
Melvorn	1.2
Milford	0.2
Perry	2.0
Pomona	1.4
Tuttle Creek	0.7

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coverage.<sup>(5)</sup> Table 1 shows estimated current coverage by wetlands within the watersheds of federal reservoirs providing public water supply.

A [Reservoir Sustainability Initiative](#) is being developed by the Kansas Water Office (KWO) to address all aspects of reservoir management. Wetland and forested riparian loss in watersheds above federal reservoirs is a priority concern for riparian forest and wetland protection due to their beneficial impacts on water quality and reduction of sediment transport. A *Kansas Water Plan* Policy Section has been developed that addresses the adequacy of current programs and policies to protect wetlands and riparian areas, and the effectiveness of current targeting of areas for stream restoration programs. Noted in the policy section is that degraded and unstable stream banks are a major source of sediment, especially during high flows.<sup>(6)</sup>



Figure 1. Jamestown State Waterfowl Management Area. Photo courtesy Kansas Geological Survey.

### Management Overview

Conversion of wetland (Figure 1) or riparian areas from their natural state to agricultural or other development uses poses a challenging management problem. Federal regulations, authorized by the Clean Water Act (CWA) Section 404 Program, protect some wetland areas from being filled in, or may require mitigation if filling is unavoidable.

No state regulations exist to protect riparian and wetland areas on private land. The primary policy of the state has been to facilitate the voluntary protection of these areas from conversion or channel modifications, and to stabilize streams which have been adversely affected by channel modification activities. Five guidance documents

were developed and widely distributed in 1993 to assist with this facilitation: 1) *Classification of Wetland and Riparian Areas in Kansas*, 2) *Conservation Goals and Strategies*, 3) *Management Practices for Wetland and Riparian Areas*, 4) *Local Planning Guide for Wetland and Riparian Areas in Kansas*, and 5) *Wetland and Riparian Areas Program Directory Manual*.<sup>(4)</sup> These documents were produced through an Environmental Protection Agency (EPA) grant, coordinated by the KWO, and included input from numerous state and federal resource agencies with expertise in the topic.

The Kansas Alliance for Wetlands and Streams (KAWS), as part of a EPA Wetland Program Development Grant, led an effort to review these guidance documents for updating and incorporation into a *Wetland and Aquatic Resource Protection Plan (WARP)* framework. This effort also involved an interagency group of wetland and riparian professionals. The group has identified the lack of current assessment information as a key impediment to completing a plan. The group also evaluated the need for development of a monitoring strategy to include additional wetlands beyond the publicly owned wetlands currently being monitored. Also evaluated was the need for the development of wetland specific water quality standards. Recommendations from the WARP Team have been discussed with the Governor's Natural Resources sub-cabinet for guidance on implementing the recommendations, and who will be responsible for development of a complete *Kansas Wetland Conservation Plan* for which the WARP provides a framework.

In January 2008, Kansas Stream Mitigation Guidelines were submitted by the Governor's Natural Resources Sub-cabinet to the U.S. Army Corps of Engineers (Corps) for use in designing and implementing mitigation projects when required under the federal CWA Section 404 program. The guidelines were developed by a committee of state resource agencies that are either subject to federal requirements, or have some role in administering the federal regulations. The guidelines are now available for use by entities proposing projects that would require mitigation and are intended to improve the quality of riparian and stream restoration projects.

A *Uniform Conservation Easement Act (UCEA)* in the Kansas statutes allows for state purchase of managed easements from a willing land owner.<sup>(11)</sup> This Act has had limited use. In the past ten years, four Land Trusts have been established in the state: 1) the Kansas Land Trust, 2) the Sunflower Land Trust, 3) the Watershed Institute Land Trust and 4) the Kansas Livestock Asso-

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ciation Ranchland Trust. All of these Land Trusts can permanently protect wetlands and riparian areas, among other valuable resources. Both the Sunflower and the Watershed Institute Land Trusts have established in-lieu fee programs that can be used in conjunction with the CWA Section 404 permitting and mitigation program to establish wetlands to replace those lost to conversion or development. They can also protect riparian areas either on a voluntary basis or in conjunction with mitigation requirements.

The state also promotes the restoration and enhancement of riparian and wetland areas to maintain or maximize the environmental benefits mentioned above. This is a key strategy in addressing the state's water quality restoration needs as part of implementing Total Maximum Daily Loads (TMDL's) in high priority areas (see [Water Quality Policy and Institutional Framework](#) Section), and in addressing identified high priority biological areas. High priority areas were identified and mapped in the *State Wetland and Riparian Implementation Plan*, developed in 2003 by KAWS through an EPA grant. Priority for this map was based on impaired waters and areas with threatened or endangered species and did not consider protection needs. The WARP group is considering updating of this map to include protection needs, updated high priority TMDLs, and a current listing of threatened and endangered species.

In 2004, the Kansas Watershed Restoration and Protection Strategy (WRAPS) was implemented through a Memorandum of Agreement between the state agencies represented on the Governor's Natural Resources Subcabinet to address watershed restoration and protection issues identified in the basin sections of the *Kansas Water Plan*. A major focus of this strategy is to address water quality and sedimentation issues affecting federal reservoirs that provide public water supply benefits. This will be done through the development and implementation of watershed management strategies by local WRAPS groups comprised of watershed stakeholders. These strategies are also expected to enhance the ability to inventory and identify areas in need of protection or restoration to improve water quality in priority areas.

In 2006, the WRAPS Work Group approved the following characteristics for properly functioning wetland and riparian areas to assist local WRAPS groups as they assess watersheds and set goals for implementing Best Management Practices (BMPs).

- Undisturbed hydrologic systems contain transitional

zones between streams and uplands which play important roles in function and maintenance of the systems. These areas should be managed to mimic undisturbed hydrology so that the channels and floodplains continue to sustain flows that are not disruptive to the system.

- Riparian land is covered with permanent vegetation appropriate to the landscape setting.
- Stream channels are connected to their floodplains and functioning appropriately.
- Wetlands are mapped and delineated and their beneficial functions are maintained.

Riparian lands, especially in western Kansas, have also been seriously impacted by the infestation of non-native phreatophytes. Of greatest concern are the effects tamarisk (salt cedar) and Russian olive are having on our native riparian ecosystems. The invasive thickets provide poor habitat for livestock and wildlife; increase fire hazards; decrease water quality, and generally use more water than native vegetation. Infestations in Kansas are roughly estimated to occupy greater than 50,000 acres. Recognizing the need for a long-term coordinated approach in addressing tamarisk and other non-native phreatophyte control, an inter-agency, multi-organizational team was assembled to develop a Strategic Plan. The [10-Year Strategic Plan for the Comprehensive Control of Tamarisk and Other Non-Native Phreatophytes](#) was adopted by the Governor in 2006.



Figure 2. Tamarisk Shrub in Flower.

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### Statutory Framework

Statutory authority for addressing wetland and riparian management issues in the *Kansas Water Plan* is contained in the *State Water Resource Planning Act*.<sup>(7)</sup> This Act establishes as long-range goals: 1) the reduction of damaging floods and the losses resulting from floods, 2) the prevention of the pollution of the water supplies of the state, and 3) the sound coordination of the development of the water resources of the state with the development of the other resources of the state. Statutory policies for achieving these goals can be found in the Resources section at the end of this paper.<sup>(7)</sup>

Statutory guidance is also provided to the Kansas Forest Service, Kansas Department of Health and Environment, Kansas Department of Wildlife Parks and Kansas Department of Agriculture-Division of Water Resources for wetland and riparian issues.

The following guidance is provided statutorily to the KFS:<sup>(10)</sup>

- The KFS is directed to provide an assistance program to forest landowners involved in the practice of forestry, including the growing, harvesting and marketing of forest products and in the management of forests for other multiple benefits such as water quality, streambank stabilization, erosion control, wildlife and recreation.
- The KFS shall cooperate with other agencies and organizations in conducting forestry related programs, including riparian and wetland protection and nonpoint source pollution control.
- The KFS shall cooperate with and assist the cooperative extension and other appropriate agencies in conducting educational programs and demonstrations in forest management, forestation, reforestation and other forestry related programs.
- The KFS shall promote watershed management and urban and community tree planting management and care; and to cooperate with federal and state agencies and such agency's subdivisions for any or all of these purposes.

Statutory guidance is provided to the KDWP to administer a Conservation Easement Program in which landowners can voluntarily enroll eligible high priority wetland and riparian areas or donate easements.<sup>(11)</sup>

The statutory guidance for KDHE involvement in riparian and wetland management related issues is found in the TMDL development and implementation activities<sup>(12)</sup> and in the nonpoint source pollution control measures including grants for development of local protection plans, technical assistance, and demo projects.<sup>(13)</sup>

The *Environmental Coordination Act* which regulates channel change activities is under the statutory authority of the KDA-DWR.<sup>(14)</sup>

### **Kansas Water Plan Objectives and Assessment**

The Objectives, added to the *Kansas Water Plan* in 1998, provide targets for quantifying progress in implementing *Kansas Water Plan* policy recommendations. The Objective addressing riparian and wetland management is:

- Maintain, enhance or restore priority wetlands and riparian areas.

An assessment of this Objective to determine progress in its achievement has not been conducted due to the lack of current information. An inventory of existing riparian and wetland areas is needed. Currently the best site specific wetland information available is the USFWS *National Wetlands Inventory* (NWI). Only a small part of northeast Kansas has been digitized for this information and the remainder is available only as hard copy.

The Kansas GAP map, developed in 2003 by the Kansas Biological Survey, includes wetland areas but is not at a scale useful for site specific assessment. The goal of the GAP Analysis Program is to identify those species and plant communities that are not adequately represented in existing conservation lands.

An inventory of land use within riparian areas at a 14-digit hydrologic unit code (HUC 14) level has been summarized from the GIS database developed by the Natural Resources Conservation Service (NRCS). However, the database is about 15 years old and more current information is needed. New land use data has been made available that can be used to update this inventory.

In 2008, KWO received a grant from the EPA to develop a more detailed Geographic Information System (GIS) based assessment methodology. The information can be used by local WRAPS groups to develop detailed maps and prioritize areas for protection, enhancement, restoration and creation of wetlands and riparian areas within

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their watersheds. The proposed methodology integrates readily available information to identify and prioritize wetland and riparian areas. The map and GIS database will include information on the location, type, condition and function of wetland and riparian areas.

### Applicable Programs

Several state, local and federal programs are available to carry out the wetland and riparian management effort. Key programs are described below along with a brief synopsis of current implementation activities and objectives where applicable. Additional information is available in the State and Federal Water Programs Manual available at [www.kwo.org](http://www.kwo.org).

Kansas Water Office State Water Planning Program: This program pursues state and federal funding to develop and implement wetland and riparian protection and restoration plans. The KWO Watershed Coordination Unit serves as the lead in coordinating the efforts of the various state water related agencies' riparian and wetland programs, and focusing those efforts on rivers, streams, lakes and wetlands identified in the *Kansas Water Plan* for protection, maintenance and re-establishment.

Kansas Department of Health and Environment (KDHE) Watershed Management Programs: Applicable programs include administration of EPA 319 grant funds by the Watershed Management Program, and development of TMDLs by the Watershed Planning Program. KDHE also administers the CWA 401 certification program.

KFS Forest Stewardship and Conservation Tree Planting Programs: These programs work cooperatively with KDWP, State Conservation Commission (SCC), NRCS, WRAPS groups and Farm Service Agency to implement riparian forestry programs in priority areas. As of 2008, four KFS foresters are service providers to ten WRAPS Groups. In 2007, through WRAPS projects, a total of 728 acres of forestry BMPs were implemented in high priority TMDL areas with estimated load reductions of 1,136 pounds of nitrogen, 797 pounds of phosphorus and 664 tons of sediment.

SCC Riparian and Wetland Protection Program: This voluntary program offers cost-share money via the county conservation districts to implement BMPs to better conserve and manage riparian and wetland areas. Riparian areas, tree plantings, wetland enhancement, streambank stabilization and soil bioengineering prac-

tices are utilized and encouraged where appropriate. Emphasis is placed on targeting projects to high priority TMDL areas and to areas above federal reservoirs. Additional points are given to contiguous projects. State funds are used to match federal funds up to 90% of the project costs to encourage landowner participation.

KDWP Private Lands Program: This program provides technical advice and planning assistance to private landowners interested in improving habitat for wildlife. Funding for the program is obtained from various state and federal sources; thus, the services provided vary depending on requirements stipulated by the fund source. Current programs include the Southeast Kansas Quail Initiative, KDWP Wildlife Habitat Improvement Program, Pheasant Initiative, Upland Gamebird Habitat Improvement Program, Buffer Coordinator Program, Playa Lakes Signup Incentive Program, and Playa Lakes Habitat Improvement Program. Activities supported by these programs include, but are not limited to, cost-share assistance for grass establishment and conversion, hedgerow renovation, shrub planting and food plot establishment. In some cases, KDWP also provides for the use of equipment necessary to accomplish wildlife conservation activities.

### Resources

1. Dahl, Thomas. 2000. Status and Trends of Wetlands in the Conterminous United States 1986 to 1997. U.S. Fish and Wildlife Service.
2. U.S. Environmental Protection Agency Historic Wetlands Map. 2006. U.S.E.P.A.
3. Atchison, Robert; Balch, Phil; Davis, Rick. 2001. Kansas River and Stream Corridor Management Guide. State Conservation Commission.
4. Wetland and Riparian Areas Work Group. 1992. Kansas Wetland and riparian Resources: Conservation Goals and Strategies. Kansas Wetland & Riparian Areas Project. Kansas Water Office.
5. Kansas Applied Remote Sensing Program. 2002. Kansas Vegetation Map (GAP)
6. Kyle E. Juracek; Andrew Cl Ziegler.2007. Estimation of Sediment Sources Using Selected Chemical Tracers in the Perry Land and Lake Wabaunsee Basins, Northeast Kansas. USGS

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7. State Water Resources Planning Act. K.S.A. 82a-901 (a - p) *et. seq.* <http://www.kslegislature.org/legsrv-statutes/getStatuteInfo.do> <http://epa.gov/owow/watershed/wacademy/acad2000/protection/> - Watershed protection site (EPA) includes urban growth planning and riparian and wetland value.
8. Floodplain regulations. K.S.A. 82a-928(a). <http://www.kslegislature.org/legsrv-statutes/getStatuteInfo.do> <http://www.marc.org/metrotrails.htm> - Metro Greenways - recreation trails in KC Metro – (Mid Am. Reg. Council – MARC) some are riparian (streamside trails).
9. Kansas Watershed Restoration and Protection Program. <http://www.kswraps.org/> <http://www.smartgrowth.org/Default.asp?res=800> – Smart Growth Network – Urban and rural development issues. Incorporation of wetland and riparian areas into development projects.
10. Kansas Forest Service mission and guidance. K.S.A. 76-425. <http://www.kslegislature.org/legsrv-statutes/getStatuteInfo.do> <http://www.kwo.org> - Kansas Water Office site. Links to many state and federal water related agencies and *Kansas Water Plan*.
11. Uniform Conservation Easement Act. K.S.A. 32-807 and K.S.A. 58-3810. <http://www.kslegislature.org/legsrv-statutes/getStatuteInfo.do> <http://www.swt.usace.army.mil> – U.S. Army Corps of Engineers, Tulsa District <http://scc.ks.gov> State Conservation Commission website.
12. Riparian and Wetland Management TMDL development and implementation. K.S.A. 65-165 *et seq.* <http://www.kslegislature.org/legsrv-statutes/getStatuteInfo.do>
13. Nonpoint source pollution control. K.S.A. 75-5657. <http://www.kslegislature.org/legsrv-statutes/getStatuteInfo.do>
14. Environmental Coordination Act. K.S.A. 82a-325-327. <http://www.kslegislature.org/legsrv-statutes/getStatuteInfo.do>

### Additional Resources

<http://www.cwp.org> – Information and training on urban stormwater management, urban Best Management Practices (Center for Watershed Protection).

<http://www.kdhe.state.ks.us/tmdl/> - TMDL information (KDHE)

<http://www.kdhe.state.ks.us/water/> - KDHE Bureau of Water (links to state and federal water programs and issues and groundwater management districts).

<http://www.kdwp.state.ks.us> - Water recreation - boating; hunting; fishing; state parks, state parks at federal reservoirs.

<http://www.stormwatercenter.net> – Urban stormwater management site – nonstructural and structural options.