

US Fish and Wildlife Service (USFWS) –

USFWS Perspective

The USFWS is interested in the protection of water quantity and quality that is required to meet legal responsibilities. Quivira National Wildlife Refuge (Refuge) was established primarily to conserve habitat for spring and fall migrating and wintering birds in the Central Flyway, but also to support nesting and resident wildlife and their associated environments. A complex system allows management of over thirty wetlands that are designated important or critical habitat for hundreds of thousands of waterfowl and shorebirds, and many federal and state threatened and endangered species. The availability of water resources is important year-round on the Refuge to provide food and cover requirements for different wildlife and life cycle events. It is necessary to vary water management prescriptions on the Refuge within and among years generally to maintain productive wetlands and due to changing weather patterns. Despite having a senior water right, water is not always available for use when the Refuge needs it to manage habitat for wildlife, particularly in late summer when pumping for croplands is still occurring within the Rattlesnake Creek Subbasin.

Water Use and Water Management

Many studies and models describe the water resource system in the Great Bend region of south central Kansas and areas within Groundwater Management District Number 5 (GMD-5) (Jantzen, 1960; Koelliker, Zovne, Steichen, & Berry, 1981; Cobb, Colarullo, & Hiedari, 1983; GEI Consultants, Inc.; Burns and McDonnell, 1998; Balleau Groundwater, Inc., 2010). This includes documentation of the saline aquifers and their relationship to the surface water system, theories on the dynamics of the system, and suggestions regarding management and socio-political solutions. Based on this information, achieving sustainable aquifer levels requires changes for appropriate future management and administration. As stewards of our natural resources, the Rattlesnake Creek Partnership has an urgent challenge to act responsibly with effective water use and protection.

While experiencing record drought in south-central Kansas in 2011, several revisions to Kansas water law occurred that do not consistently support conservation of water resources and protection of senior water rights. To relieve drought stresses on agricultural crops, temporary Emergency Drought Term Permits were allowed to permit pumping irrigation water beyond appropriated quantities. In these cases, pump overages were borrowed from 2012 allotments. Also, the Kansas Legislature passed SB-272 that enables multi-year flexibility in water use (Kansas Legislature Committee on Agriculture, SB-272, 2012). Multi-Year Flex Accounts encourage water conservation by “saving” unused water in a particular year for “possible” use in subsequent years. Wording in SB-272 forgives water debts from Emergency Drought Term Permits in 2011. The immediate effect of these Multi-Year Flex Accounts allows groundwater pumping during times when aquifer levels are most susceptible to depletion, affecting streamflow in Rattlesnake Creek and water deliveries to the Refuge.

Preliminary data for the 12 year review of the Rattlesnake Creek Partnership proposal show that instead of reducing groundwater use in the Rattlesnake Creek sub-basin, most areas increased groundwater use (Basin Management Team, 2012). Despite above average precipitation in recent years, groundwater use in the stream corridor area, priority areas 1, 3, and 4 (12% target reduction) increased from 29,194 acre feet in 2001 to 30,647 acre feet in 2010. Average annual groundwater use in the groundwater management area, priority areas 2, 5, and the Mystery River area (reduction objective to 85,000 acre

feet) increased from 91,734 acre feet in 2001 to 101,342 acre feet in 2010. Average annual groundwater use in priority area 7 and the mineral intrusion area (reduction objective to about 47,000 acre feet) increased from 49,064 acre feet in 2001 to 53,837 acre feet in 2010.

Aquifer Depletion

Groundwater use for irrigation in GMD-5 is lowering the static water level in wells. Substantial drops in groundwater levels were recorded in 2012 by the DWR throughout western and south-central Kansas. GMD-5 groundwater levels changed from +0.63 feet in 2010 to -0.44 feet in 2011, and were averaging -2.95 feet in January 2012 (Kansas Geological Survey, 2012).

Groundwater discharge from the Alluvial and Great Bend Aquifer is the primary mechanism that provides base-flow in Rattlesnake Creek. Streamflow in Rattlesnake Creek was reduced to zero during the summer, 2011. Solving the surface water depletion problem is dependent upon solving the groundwater depletion problem. Water conservation programs and administration by the State are necessary to preserve the groundwater resources in the region and protect the water rights of the Refuge.

Moving forward

The USGS monitors Rattlesnake Creek flows into the Refuge at the Zenith gage. From Zenith, Rattlesnake Creek enters the Refuge system and transports water to the Little Salt Marsh for storage and subsequent use. Water released from the Refuge returns to Rattlesnake Creek, eventually flowing into the Arkansas River. There are no downstream users of water exiting the Refuge and the Refuge does not meter streamflow leaving the Refuge. Regardless, the Service received a Meter Order from Kansas Chief Engineer David W. Barfield (February 3, 2011) requiring installation of flow-meters on all points of diversion on the Refuge, in order to facilitate increased water management and to promote the efficient use of water in the Western Kansas, Southwest Kansas, and Big Bend Groundwater Management Districts. The difficulty in installing continuous flow-meters in the multiple water diversions from Rattlesnake Creek has delayed compliance with the meter order. A recent (February, 2012) meeting on the Refuge with DWR representatives led to an agreement for locations of flow metering equipment, and the development of a Flow Monitoring Plan (Striffler, 2012). Installation of continuous monitoring Doppler velocity meters at six points of diversion from Rattlesnake Creek is planned for spring 2012.

The Service has formally issued a recommendation to the DWR to: 1) determine whether an IGUCA is warranted for the Rattlesnake Creek sub-basin, and 2) to determine the administrative actions required ensuring groundwater use goals spelled out in the Rattlesnake Creek Sub-basin Management Plan are met, and that actions are ready to implement in 2012. After water use reduction goals in the Rattlesnake Creek Management Plan are met, it may be beneficial to optimize groundwater pumping curtailments using the Balleau GMD-5 Groundwater Model, as long as groundwater use reductions are maintained. The Service may be forced to pursue legal measures if the Service's water right is not protected.