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Bureau of Reclamation  
Nebraska - Kansas Area Office

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# RECLAMATION

*Managing Water in the West*

**Fax Cover**

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**Date:** 3/11/05

**Pages including this cover:** 5

**To:** Steve Gaul

**From:** Jack Wergin

**Code:**

**E-mail:** [jwergin@gp.usbr.gov](mailto:jwergin@gp.usbr.gov)

**Fax:** 402-471-2900

**Phone:** 308-389-4622, x209

**Message:** Nebraska 2005 Drought Assistance Request

RECEIVED

MAR 11 2005

DEPARTMENT OF  
NATURAL RESOURCES

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Received Time Mar. 11. 10:17AM

DNR 009413

# STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES  
Roger K. Patterson  
Director



December 16, 2004

Mike Johanns  
Governor

Alice Johns, Area Manager  
Bureau of Reclamation  
Nebraska-Kansas Area Office  
P.O. Box 1607  
Grand Island, NE 68802-1607



IN REPLY REFER TO			
NAME	INITIAL	ACTION	DATE
Steve			
A Mike K			
Jack		X	
Bob			
REMARKS:			

Dear Ms. <sup>Alice</sup> Johns:

I am writing you concerning a drought assistance proposal for consideration from the State of Nebraska. Nebraska was approved for drought assistance under the Reclamation States Emergency Drought Relief Act of 1991 pursuant to Commissioner Keys' letter to Governor Johanns dated June 2, 2004.

Nebraska would like to submit a drought assistance proposal that provides financial incentives to the Republican River Basin irrigation districts for leaving limited 2005 irrigation storage in the reservoirs. This proposal provides recreation and fish and wildlife benefits and is similar to the project that was funded in 2004. Timing of this proposal is critical as irrigation districts and producers make decisions for the 2005 season. Nebraska may submit additional drought assistance proposals at a later date.

If you have any questions please feel free to contact me. Steve Gaul of our staff will also be available to assist with implementation.

Sincerely,

Roger K. Patterson  
Director

Enclosure

041430

**ASSISTANCE FOR REPUBLICAN RIVER IRRIGATION DISTRICTS - 2005  
INCREASED RESERVOIR CARRYOVER STORAGE  
(12/16/04)**

**Background**

Declining inflows throughout the Republican Basin have significantly reduced storage supplies for Reclamation Irrigation Districts in Southwest Nebraska. This area has suffered effects of the current drought since 2000.

Natural flows in the Frenchman Creek and storage water from Enders Dam and Reservoir provides the water supply for project lands of the Frenchman Valley Irrigation District and the H & RW Irrigation District. 2002 was the first year that H & RW Irrigation District project lands did not receive water due to supply shortages. In 2003, H & RW again elected not to deliver the small amount of water available. The 2004 water delivery projections were 0.5 inches per acre for Frenchman Valley and 1.0 inches per acre for H & RW. There were no irrigation storage released made from Enders Reservoir in 2004. Frenchman Valley Irrigation District utilized natural flows in 2004 and H & RW did not make any water deliveries for the third consecutive year. Water delivery projections for 2005 are 0.5 inch per acre for Frenchman Valley and H & RW project lands

Natural flows in the Republican River and Red Willow Creek and storage water from Trenton Dam and Swanson Lake, Red Willow Dam and Hugh Butler Lake, and Medicine Creek Dam and Harry Strunk Lake provide the water supply for the Frenchman-Cambridge Irrigation District. Declining inflows led to reduced project deliveries in 2001 and 2002. In 2003 the Frenchman-Cambridge system did not deliver water to project landowners in the Meeker-Driftwood Unit, and the Red Willow Unit (includes Red Willow and Bartley Canals) for the first time since the District began delivering water. The 2004 projected water deliveries were 4 inches per acre for the Meeker Driftwood and Red Willow Units. No water deliveries were made from three of the District's four canal systems, which was the second consecutive year of no water deliveries to these systems. The estimated water deliveries for 2005 are 5.0 inches per acre for these three canal systems.

Natural flows in the Republican River and storage water from Harlan County Dam and Lake provide water supplies for both the Bostwick Irrigation District in Nebraska and the Kansas Bostwick Irrigation District No. 2. Declining inflows to Harlan County Lake resulted in reduced deliveries of approximately 6 inches per acre in 2003. In 2004, the estimated water deliveries were 1.5 inches per acre. 2004 was the first year that there was insufficient supply in Harlan County Lake to deliver water to project lands in the Bostwick Division. This resulted in no deliveries from Naponee Canal, Franklin Canal, or Franklin Pump Canal systems of the Bostwick Irrigation District in Nebraska. Superior Canal was able to make minor deliveries by utilizing natural flows. The estimated water deliveries for 2005 are 0.5 inches per acre for the Bostwick Irrigation District in Nebraska.

In 2004, these irrigation districts again faced limited irrigation storage at Enders Reservoir, Swanson Lake, Hugh Butler Lake, and Harlan County Lake. Through the Reclamation States Emergency Drought Relief Act of 1991, the State of Nebraska provided drought assistance to these districts for leaving the limited amount of irrigation storage in the reservoirs in order to provide recreation and fish and wildlife benefits.

Water delivery projections for 2005 are 0.5 inch per acre for Frenchman Valley and H & RW project lands, 5.0 inches per acre for three of Frenchman Cambridge ID's four canal systems, and 0.5 inches per acre for the Bostwick Irrigation District in Nebraska project lands.

### **Statement of Need**

The recent drought has led to historic low inflows to the Republican Reservoirs, which in turn results in low lake levels. As lake levels drop, fish and wildlife habit also suffers. Lower lake levels can cause problems such as increased noxious weed and invasive species. As water levels recede the bare soil provides optimum growing conditions for Canada thistle. Salt Cedar is a noxious weed that thrives in arid climates and prefers saline rich/nutrient poor soil. Salt Cedar can have severe impacts on ground water levels, surface water flows, and native vegetation. As lake levels drop, new shorelines continue spread farther from existing park facilities. New shorelines are often extremely muddy and choked with vegetation, which reduces opportunities for bank fishing, swimming, dock mooring, etc.

Lower lake levels also caused increased water temperature and lower levels of dissolved oxygen. Swanson Lake (2001) and Harry Strunk Lake (2002) in SW Nebraska have suffered major fish kills due to low lake levels. Some have estimated that 1/2 of the total fish population in Swanson Lake was lost, including many trophy size sport fish. Stocking efforts continue but it will take many years to rebuild the trophy size fishery.

Irrigation Districts in the Republican basin must decide whether or not to take the small amounts of irrigation storage water in the reservoirs and deliver it to the project lands, or to leave the small storage supplies in the reservoirs for future years use.

### **Benefits to Nebraska**

This assistance will provide the Republican Basin Irrigation Districts with an incentive for leaving irrigation storage water in the reservoirs for future years use. Saving the irrigation storage water for future years use will result in higher carryover reservoir levels, which would provide fish and wildlife and recreation benefits to the reservoir areas.

By choosing to leave the storage in the reservoirs, the District's are providing fish and wildlife benefits, as well as increased recreation opportunities. The higher reservoir levels will increase visitation to the parks surrounding these reservoirs. Higher reservoir levels also will keep water temperatures cooler and oxygen levels higher, which will be

more beneficial to fish populations. Higher levels also will improve shoreline access for recreation.

### Budget

Drought assistance for irrigation storage left in reservoirs was computed on a graduated scale. The first 2500 acre-feet left in a reservoir was computed at a payment of \$10 per acre-foot, the next 2500 acre-feet was computed at \$5 per acre-foot, and anything over 5000 acre-feet was computed at \$2.50 per acre-foot. This is the same rate that was used to provide drought assistance in 2004.

The Bureau of Reclamation provided an estimated total irrigation supply in each reservoir as of May 31, 2005.

Reservoir	05 Estimated Irrig. Storage	Drought Assistance
Enders Reservoir	3,860 AF	\$ 31,800
Swanson Lake	13,150 AF	\$ 57,875
Hugh Butler Lake	10,190 AF	\$ 50,475
Harlan County Lake	3,400 AF	\$ 29,500
	Total	<u><u>\$ 169,650</u></u>

### Drought Assistance by Irrigation District

Frenchman Valley Irrigation District	\$ 13,700
H & RW Irrigation District	\$ 18,100
Frenchman-Cambridge Irrigation District Swanson, Hugh Butler	\$ 108,350
Bostwick Irrigation District in Nebraska Harlan County (Nebraska's share)	\$ 29,500
TOTAL	<u><u>\$ 169,650</u></u>