

PROJECT NARRATIVE

Name of Project: Reclamation of Upper Colorado River Watershed

New Project or Request for Continuation: New

Geographic Area of Project: Upper Colorado River Watershed (Lake Ivie and above)

Names of Principal Investigator: Allan McGinty, Professor and Extension Range Specialist

Co-Investigators: (see attachment)

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Amount of Funding Requested: \$6,964.00

Project Need, Description and Expected Outcomes

The Upper Colorado River is in a severe water crisis. Above ground aquifers are at all time lows. The current (7/24/2002) water levels of Lakes Thomas, Spence, Ivie, Moss Creek and Powell are 8.5%, 9.2%, 40.8%, 44.9% and 2.4%, respectively. Groundwater is also declining to near record levels throughout the watershed. The water crisis is affecting both rural and urban communities, limiting irrigation, invoking strict water rationing, increasing costs to agriculture and business and curtailing growth of cities and communities.

While much of Texas has received significant rainfall during the summer of 2002, the Upper Colorado River remains entrenched in long-term drought. In addition, saltcedar has become the dominant plant along the Colorado River and its streams and tributaries, wasting a significant portion of the limited water available. While little can be done to bring more precipitation to the area, the simple removal of saltcedar from the watershed would result in the savings of tens of thousands of acre feet of water each year.

Saltcedar is a deciduous, facultatively phreatophytic shrub to small tree, from central Asia that has invaded western riparian zones. This plant displaces native vegetation, reduces stream flows, increases water salinity and is resistant to mechanical control, fire and native insects. Past research has documented water use by this plant from 3 to 12 acre feet/year.

In 2001, through the lead of Extension, a Colorado River Saltcedar Management Task Force was developed. Members represent both agencies and water control entities with a vested interest in the Colorado River. This Task Force has taken on the responsibility of developing a comprehensive control plan for salt cedar and is also involved in seeking funding for these efforts. At the very beginning of the process it was realized that an integrated approach was needed to have an effective control and management program. Aerial applications of herbicide to control saltcedar can cost as much as

\$200/acre, and treatment life is limited. Individual plant treatment with herbicides and biological control are vital components of a successful saltcedar management program that integrates initial reclamation treatment with effective maintenance methods to extend treatment life and improve the cost/benefit ratio of control efforts. Working with the Texas Department of Agriculture, using satellite imagery and GIS software, the saltcedar along the Colorado River above Lake Spence has been mapped. The mapping data estimates over 8,000 acres of saltcedar in the Lake Spence basin alone. Based on past water use data, it is projected over 48,000 acre feet of water is lost annually to saltcedar plant within the basin. If control efforts are initiated and only 25% of the water released by control of saltcedar is captured, the cost to produce this water will be less than \$20/acre foot (assuming 6 acre feet/year water use by saltcedar, \$200/acre treatment cost and 7 year treatment life). With an effective maintenance control program this cost can be significantly reduced. This compares to the estimated cost of \$74.63 acre foot for the North Concho Watershed Project.

In response to the need to educate landowners, agencies, water control entities etc. saltcedar was incorporated into Brush Busters (a highly successful educational program targeting maintenance brush control). Educational materials were developed that include a pamphlet and video giving background on the plant, it's invasive properties, excessive water use characteristics and maintenance control methods. Also a saltcedar wanted poster with color pictures of the plant was developed to increase public recognition of saltcedar and to discourage its sale and planting as an ornamental.

To improve maintenance control options following initial treatment, Task Force contact was made with Dr. Jack DeLoach (ARS) to obtain a release site within the upper Colorado River watershed for a potential biological control insect (*Diorhabda elongata*). Dr. DeLoach has been working with this insect and others for over a decade seeking a biological control organism for saltcedar. This particular leaf beetle has shown initial success reducing saltcedar leaf canopy, and has been approved for release at selected sites by US Fish & Wildlife (USFW). While Dr. DeLoach has the resources to install the initial release site (field cages and insects), there is a need to provide resources in support of monitoring the release for approximately one year, as requested by USFW. Having an effective biological control option for saltcedar is absolutely necessary for a long-term, cost effective saltcedar control program.

This project seeks funding of the following objectives:

- 1) Provide required monitoring of insect release site on the Colorado River for control of saltcedar.
- 2) Conduct intensive educational program through County Extension Agents and Natural Resource Conservation Service offices to increase landowner recognition of this plant and ability to implement appropriate maintenance control practices.

Required monitoring will be on a weekly basis from the time of the release (September) through end of first growing season and on a bi-weekly basis thereafter. A detailed vegetation inventory will also be required. It is estimated 40 man-days will be needed to provide required monitoring in the first year after release of the insect.

The educational component will consist of workshops and educational programs utilizing the Brush Busters materials already available. These materials will be reproduced and made available to all County Extension Service and Natural Resource Conservation Service offices along the Colorado River, from the head waters above Lake Thomas down through the Highland Lakes area. The Colorado River Municipal Water District (CRMWD), Lower Colorado River Authority (LCRA), and Farm Bureau have already agreed to help distribute these materials. In addition, a two day, multi-state saltcedar management symposium is planned for August 2003 in San Angelo, Texas. A planning committee with

representatives from BASF Chem. Co., CRMWD, USFW, New Mexico State University, Texas Cooperative Extension and Texas Department of Agriculture (TDA) has already been formed to develop the program.

Specific Soil and Water Conservation Issues Addressed

This project addresses the following conservation concerns:

- Water Management and Conservation
- Resource Management
- Riparian Zone Management
- Brush Control for Soil, Water and Wildlife Management
- Land Management Related to Soil and Water Conservation

Collaboration

Collaborator	Function
CRMWD	Provide insect release area and assist with monitoring efforts as well as serve on saltcedar symposium planning committee.
USDA-ARS	Make initial insect release above Lake Thomas and provide guidance in monitoring efforts.
NRCS	Distribute educational materials to landowners within Upper Colorado River Watershed and provide financial support (EQIP) of saltcedar symposium.
LCRA	Distribute educational materials to landowners within Lower Colorado River Watershed (this will be primarily an awareness program in this area).
USFW	Serve on saltcedar symposium planning committee.
Farm Bureau	Distribute educational materials within watershed.
TDA	Continue to develop aerial mapping of saltcedar distribution within watershed to facilitate targeting of control efforts and serve on saltcedar symposium planning committee.
NMSU	Serve on saltcedar symposium planning committee.
BASF Chem. Co.	Serve on saltcedar symposium planning committee.

Submitted by: _____

Approved by: _____