

## Overview

The following report is authored per the requirements outlined in Section 2 of Legislative Bill 701. LB 701 was passed by the Nebraska Unicameral on April 26, 2007, and signed into law by Governor Dave Heineman on May 1, 2007.

Sections 1 and 2 of LB 701 create the Riparian Vegetation Management Task Force (to be known as the Task Force throughout this report) and charge the Task Force with these activities:

1. Develop and prioritize vegetation management goals and objectives;
2. Analyze the cost-effectiveness of available vegetation treatment; and
3. Develop plans and policies to achieve such goals and objectives.

The legislation also requires the Task Force to make preliminary recommendations to the Governor and the Legislature by December 15, 2007, regarding funding and legislation needed to achieve its goals. The Task Force respectfully submits this report per the above requirement. It represents a summary of discussion during three Task Force meetings held since July 2007 and smaller work group meetings held in October and November.

The Task Force has been diligent in its work over the past five months; however, the group has collectively agreed there is much work yet to be done before it can offer responsible recommendations regarding additional funding and legislation needed for future riparian vegetation management objectives. That said, the information that follows in this report highlights several key issues that could influence future Task Force legislative recommendations.

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## History

On May 1, 2007, Governor Dave Heineman signed into law LB 701, comprehensive water legislation that included riparian vegetation management activities originally included in a bill introduced by Senator Tom Carlson, LB 458. With an emergency clause attached, the legislation went into effect immediately. Sections 1 and 2 of the legislation created the Riparian Vegetation Management Task Force and assigned it specific responsibilities. This report reflects the requirements of Sections 1 and 2. Sections 3 and 4 of the legislation created a grant program for management of riparian vegetation, and stated the Legislature's intent to appropriate \$2 million annually for this purpose. A separate report on the grant program is included as an addendum.



*Senator Tom Carlson, flanked by Governor Dave Heineman, addresses the audience during the May 1, 2007, signing of LB 701.*

Photo Courtesy: Governor's Office

## Creation of the Task Force

Governor Dave Heineman appointed the Task Force members on June 21, 2007. Per the legislation, Task Force membership includes:

- One surface water project representative from each river basin determined to be fully appropriated or designated overappropriated, including the Niobrara River Basin, Platte River Basin, and Republican River Basin;
- One representative each from the Department of Agriculture, Department of Environmental Quality, Department of Natural Resources, Office of the Governor, Game and Parks Commission, Office of the State Forester, Nebraska Environmental Trust and University of Nebraska;
- Two representatives nominated by the Nebraska Association of Resources Districts;
- Two representatives of the Nebraska Weed Control Association;
- One riparian landowner from each of the state's congressional districts; and,
- Any member of the Legislature who chose to serve.

Twenty-three members were named (see chart at right). The members bring a wide range of experience and technical knowledge to assist in accomplishing the goals and objectives outlined by the Task Force. Task Force members also play a vital role in communicating riparian vegetation management issues to the public. Members have actively participated at meetings and tours, and even volunteered additional time to serve on, and in some cases chair, small work groups.

In addition, the Task Force meetings have been attended by other interested parties, such as representatives of the Nebraska Department of Roads and the USDA Natural Resources Conservation Service.

### Task Force Members

**Kent Aden – Platte River Basin**  
**Tom Thompson – Niobrara River Basin**  
**Jim Miller – Republican River Basin**  
**Greg Ibach – Department of Agriculture;**  
**Task Force Secretary/Treasurer**  
**Mike Linder – Department of Environmental Quality**  
**Ann Bleed – Department of Natural Resources**  
**John Erickson – Governor's Policy Office**  
**Kirk Nelson – Game and Parks Commission**  
**Scott Josiah – State Forester**  
**Gloria Erickson – Nebraska Environmental Trust**  
**Gary Cunningham – University of Nebraska**  
**Mike Clements – Nebraska Assoc. of Resources Districts**  
**Ron Bishop – Nebraska Assoc. of Resources Districts**  
**Charles Brooks – Nebraska Weed Control Assoc.;**  
**Task Force Chairperson**  
**Russ Shultz – Nebraska Weed Control Assoc.;**  
**Task Force Vice Chairperson**  
**Mike Arps – First Congressional District**  
**Rich Tesar – Second Congressional District**  
**Mike Sarchet – Third Congressional District**  
**Senator Tom Carlson**  
**Senator Cap Dierks**  
**Senator Deb Fischer**  
**Senator John Harms**  
**Senator Don Preister**

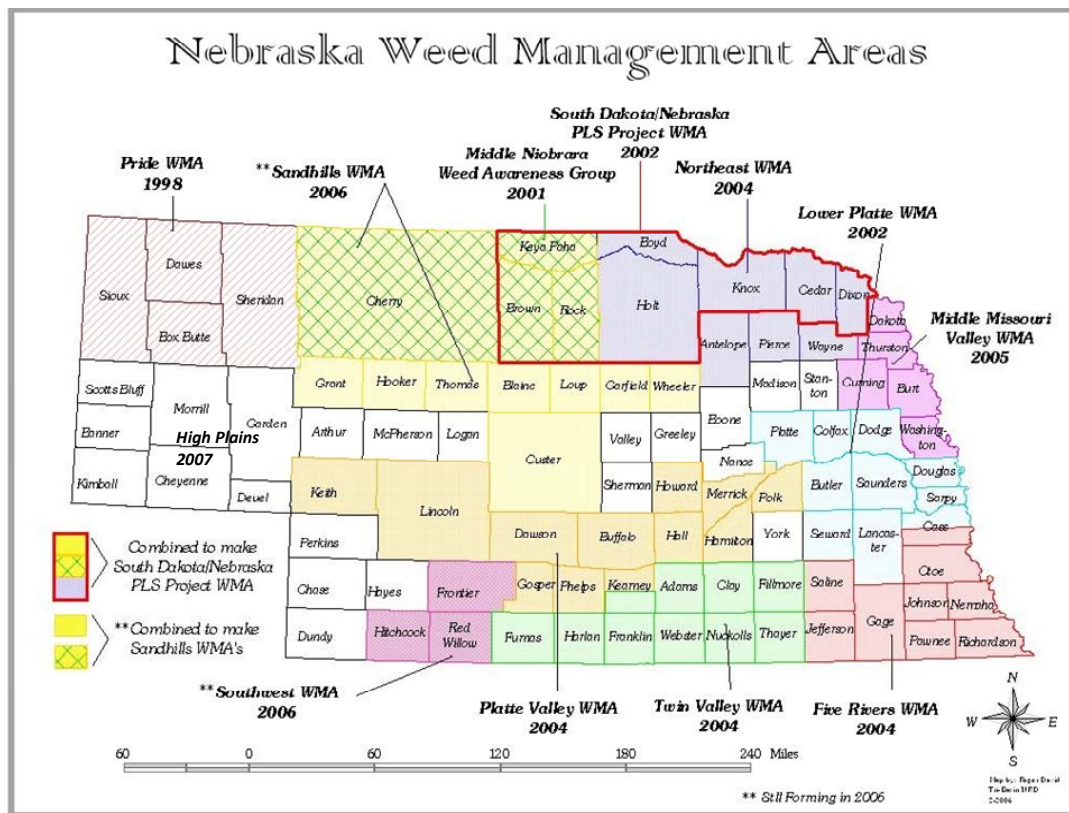
Per LB 701, the Nebraska Department of Agriculture (NDA) is administratively responsible for the Task Force. NDA received this assignment, in part, due to its experience administering the Noxious Weed Control Act.

The Act requires that each county employ a weed control superintendent. These individuals work hand-in-hand with NDA staff to monitor for the presence of noxious weeds and manage infestations through proper protocols.

Because of the magnitude of statewide weed management, NDA and county weed authorities also have worked to develop partnerships. For example, county weed authorities have organized themselves regionally into 13 weed management areas (WMAs), including almost every county in the state. This type of regional approach aids in more effective surveying and control efforts, and improves the opportunity to leverage grant dollars.

Additionally, NDA has engaged other partners who have an interest in weed management, including key entities like the natural resources districts (NRDs), wildlife and environmental organizations, irrigation districts, University of Nebraska officials, and other state and federal agencies.

While the Task Force collectively has the expertise to develop a solid riparian vegetation management plan, it will take a strong county weed control system, in cooperation with entities like those listed above, to ultimately make the Task Force successful. These entities have the hands-on experience, local knowledge, and appropriate relationships forged to aid in the implementation of the final riparian vegetation management plan.



*Weed Management Areas are an example of collaboration to encourage effective surveying and control efforts.*

## Task Force Activities to Date

The Task Force has met three times and had two field tours in association with the Task Force meetings.

The first Task Force meeting was held July 26, 2007, in Franklin, Nebraska, and was devoted to organizing the group, electing officers, developing an operating agreement, and discussing proposed goals and objectives. The group was provided an opportunity to participate in an airboat tour of a section of the Republican River basin. This tour provided the members a chance to see firsthand the proliferation of invasive riparian vegetation - phragmites in particular, and some saltcedar - and the challenges associated with this vegetation.

The second meeting of the Task Force was held October 3, 2007, in Lexington, Nebraska. Task Force members discussed the need for small work groups to assist the Task Force in achieving its goals and objectives. Members supported the formation of seven work groups, including: Goals, Objectives, and Reports; Vegetation Management and Treatment; Survey and Monitoring; Education and Awareness; Funding and Incentives; Streambed Ownership; and Vegetation Water Use. Following the meeting, Task Force members were provided an opportunity to tour a section of the Platte River where phragmites had recently been treated utilizing ground application techniques.

The third meeting was held November 14, 2007, in Grand Island, Nebraska. Task Force members heard and discussed reports provided by the work groups. Highlights from those reports will be discussed later in this document. The group also adopted goals and objectives, which are outlined in the next section of this report.

Minutes from the three Task Force meetings can be found at [www.agr.ne.gov](http://www.agr.ne.gov) under the Riparian Vegetation Management Task Force button. This web site also includes other important information regarding Task Force activities.



*Left: Task Force member Senator Tom Carlson gets an up close view of phragmites on the Platte River near Lexington. Right: Task Force member Kent Aden, right, discusses invasive weeds with Task Force members during a Republican River tour.*

Photo Courtesy: NE Department of Agriculture

## Legislative Requirements/Goals and Objectives Developed

Per LB 701, the Riparian Vegetation Management Task Force, in consultation with appropriate federal agencies, is charged with:

1. Developing and prioritizing vegetation management goals and objectives;
2. Analyzing the cost-effectiveness of available vegetation treatment; and
3. Developing plans and policies to achieve such goals and objectives. Any plan shall utilize the principles of integrated vegetation management and sound science.

While work on items 2 and 3 is ongoing, Task Force members have adopted vegetation management goals and objectives. Those are:

1. Improve stream flow and riparian health in a manner that:
  - a. Removes streambed vegetation to improve and maintain channel conveyance in fully and over appropriated river basins;
  - b. Manages vegetation in riparian areas to improve and maintain ecosystem health; and
  - c. Does not have negative effects on water quality for recreation, aquatic and terrestrial life.
2. Maintain riparian health through:
  - a. Cooperative arrangements and education efforts that encourage voluntary landowners participation;
  - b. Federal, state and local government assistance and incentives; and
  - c. Legislative action as needed.
3. Measure the effectiveness of actions taken through:
  - a. Reporting of increased capacity of the streambed to handle flow;
  - b. Reporting of acres treated and managed in 2007 and 2008;
  - c. Calculation of estimates of water saved by vegetation management; and
  - d. Presentation of pictorial evidence of vegetation removal.

As work continues the Task Force may determine a necessity to revise these points, but at present believes this to serve as a solid base from which to develop appropriate plans and policies.

## Highlights to Date

The seven work groups were created to aid the Task Force in identifying, and then framing, issues critical to meeting the goals and objectives. It was determined that work groups could solicit information from, and include in discussions, experts who are not Task Force members. Any final decisions, however, will be made solely by the Task Force.

Each work group has met once to date. Already these groups have highlighted several points that may very well figure into future policy development. These work groups will continue to meet, gather information, and make recommendations to the Task Force.

In addition to issues highlighted by the work groups, a number of key points also already have been discussed as part of general dialogue during full Task Force meetings. Included below are a few of these important issues. Much work is yet to follow.

1. The Vegetation Management and Treatment Work Group talked about the importance of, and difficulty of, framing a plan of attack on invasive riparian vegetation. The Task Force will need to determine which invasive species are addressed first, and while phragmites, saltcedar, and Russian olive have received a great deal of publicity to date, other species such as purple loosestrife may be important, depending on location. Equally important is determining how and in what order to address these invasive species. Should a specific species be a priority, or should the level of infestation determine the order? A best management plan may be the answer.

The Task Force members also have discussed various vegetation treatment methods, including chemical, mechanical, and biological. The group agrees that great care needs to be taken with chemical treatment, so the products used will not have a negative effect on aquatic or terrestrial habitat and wildlife.

It has been acknowledged that mechanical and biological methods of control need to be included as treatment protocol options. With an appropriate set of circumstances, mechanical removal of vegetation can be effective and financially feasible. As an example, Task Force members were briefed on the successful Nine Mile Creek project in western Nebraska. A coordinated plan was implemented to remove Russian olive trees from the riparian area. Mechanical removal was the main practice used, although some chemical follow-up was necessary.

In addition, the Task Force has talked about the importance of establishing a monitoring protocol so that treatment effectiveness can be measured.

2. The Streambed Ownership Work Group discussed the need for clear designation of ownership within the streambed, a point which is not clearly addressed within Nebraska law, and which is handled differently in various counties for tax purposes. The ownership issue takes on increased importance as the Task Force reviews potential treatment strategies and discusses whose responsibility it may be to conduct the treatment and then maintain the streambed/riparian areas following the activity.

The Task Force has talked a number of times about the importance of maintaining any riparian improvements so we do not find ourselves in a similar situation of streambed and riparian overgrowth a decade from now. No decision has been reached regarding whether this should be a landowner responsibility, a state responsibility, or some mixture of the two. However, the group feels emphasis needs to be placed on this issue to ensure the fiscal soundness of any state funds invested in riparian cleanup.

3. The Education and Awareness Work Group discussed the value of sharing information about successful riparian vegetation management activities with the public, and particularly with riparian land holders in areas that have yet to be treated. Satisfied landowners will be the best spokespersons.

This type of outreach has been modeled by both the Nine Mile Creek project and the Lower Republican Riparian Improvement Project. Both groups have conducted aggressive landowner education and outreach campaigns. For example, on the Lower Republican project, the efforts by the project coordinators have lead to 176 of the 180 landowners in the area agreeing to cooperate. It is hoped that this successful model can be duplicated in other riparian areas as programs and plans are made in the future.



*A filmmaker is documenting the work being done as part of the Eastern Republican Riparian Improvement Project. Coordinators hope that the documentary can be used as an educational tool.*

Photo Courtesy: Eastern Republican Riparian Improvement Project

In addition to direct landowner outreach, the Task Force has discussed the importance of involving the media in message distribution. While it will be key to deliver success stories in areas that will be directly impacted by riparian improvement projects, it may be equally important to share the message with greater Nebraska so there can be an understanding of why this issue is important to the state as a whole.

4. The Survey and Monitoring Work Group talked about how the identification of infestation location, composition, and extent, will critically impact other segments of the Task Force because survey information may be used to help prioritize future funding of vegetation control efforts. However, before this can happen, vegetation surveys and documentation of vegetation control efforts would need to be catalogued and integrated. Georeferencing vegetation control locations using global positioning (GPS) technology was identified as a potential component of any future funding criteria, not only for accountability, but for future quality assessment.

Various weed control entities already are surveying and monitoring invasive weeds, including weeds in riparian zones. These groups include Natural Resources Districts, the county weed authorities, the Weed Management Areas, University of Nebraska researchers, and/or private nonprofit natural resources organizations. The Survey and Monitoring Work Group discussed the importance of contacting these entities to review their existing information and make a determination regarding the quality and extent of the data. Survey and monitoring protocols could possibly be established and serve as a potential requirement for receiving state funding for future control efforts.

As an example of some advanced, existing riparian vegetation survey activity, a staff member from the U.S. Fish and Wildlife Grand Island field office shared with the Survey and Monitoring Work Group a presentation on the use of remote sensing (using imaging instrumentation from airplanes or satellites) to survey vegetation at a broad scale and at a fine resolution. Through a process that included the use of computer algorithms, the images were used to create detailed maps of vegetation cover for the big bend reach of the Platte River.

This work group will have a number of questions to consider as discussions continue, including to what scale should riparian weeds be surveyed and monitored, and how often do surveys need repeating.

- Perhaps the issue that has received the most discussion to date is the potential for quantifying water savings associated with riparian vegetation management. The Task Force has arrived at a discussion of this point several times, outlining questions about whether such quantification is possible and to what extent such quantification is required in relation to the riparian vegetation management sections of LB 701.

The grant portion of the law directs that funding shall be awarded for activities that have as their primary objective the improvement of conveyance of streamflow. Even though the legislation places an emphasis on conveyance, the Task Force has discussed water usage by riparian vegetation and whether, or to what extent, vegetative water use can be determined to affect that streamflow. This is a primary question that will be considered by the Vegetation Water Use Work Group. The

## What is a Phreatophyte?

...published values of water use vary dramatically within and between plant groups (Johns, 1989)...

- variations amongst measurement methods
- variations between stand densities, vigor, and composition
- variations in scale of measurements

Common Name	Range of Annual Consumptive Use (inches)
Arrowweed	96
Cattail	35-198
Cottonwood	39.3- 92.7
Bermuda Grass	28.8- 73
Salt Grass	6.2- 48.8
Rush	20.8- 86.6
Russian Olive	18.6-114.6
Saltcedar (Tamarix)	11.8- 86
Willow	13.2- 47.8

*This PowerPoint slide, taken from a presentation shared with the Task Force, highlights the variety of data regarding riparian vegetation water use.*

Slide Courtesy: NE Department of Natural Resources

group already is taking a comprehensive look at existing and ongoing research that may help answer this question.

Whether or not an actual water savings can be determined, the Task Force has noted a number of times the other important benefits of riparian vegetation management, including flood control issues, recreation improvement, terrestrial and aquatic habitat improvement, and conveyance of streamflow, particularly in basins that are subject to an interstate compact or decree.

## **Next Steps**

The Task Force is set to meet next on Monday, January 14, 2008, on the University of Nebraska-Lincoln campus. University researchers who are working on riparian invasive vegetation management issues will be reviewing their activities.

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