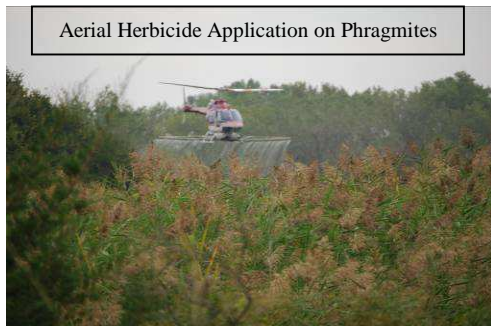


# Platte Valley and West Central Weed Management Area's Invasive Species Control in the Central Platte River 2008 - June 2011 Summary

## Summary

In 2008 the Platte Valley Weed Management Area (PVWMA) and West Central Weed Management Area (WCWMA), collectively referred to as WMA's, collaborated to apply and receive grant funding for invasive plant species control within the Platte River channels. This joint effort allowed a larger landscape approach. The WMA's consist of 12 counties in south-central Nebraska. The WMA's boundary is Kingsley Dam on the North Platte River, the Keith/Deuel county line on the South Platte through the convergence at the town of North Platte, continuing downstream to Columbus, Nebraska. Approximately 336 river miles of the Platte River flow through the WMA's. Prior estimates have shown over 14,000 acres of Phragmites infestation within this river stretch. Other invasive plants such as salt cedar, Russian olive trees and purple loosestrife also inhabit this stretch of the river. The western half of the river in this project area is classified as over-appropriated, and the remaining portion is classified as fully appropriated. WMA's goal is to reduce invasive plant species within the Platte River corridor. Objectives include 1) increase flow conveyance 2) increase wildlife habitat 3) reduce water usage by invasive plant species 4) ensure long-term sustainable control by landowners.



Primary focus of the WMA's is controlling invasive phragmites. Phragmites has taken over low-lying areas along the Platte River including riverbanks, wetlands, meadows, side channels, sloughs and sandbars. Infestations have constricted channels, increasing flooding potential and reducing wildlife habitat.

Major control efforts started in both WMA's in 2008-09 and continues to date (table 1 and table 2). In total approximately 18,641 acres of phragmites have been treated with herbicide and 1,800 acres of dead biomass have been mechanically removed. A total of \$2,573,122.21 has been spent on this project. Partnering agencies and contributions are listed in table 3. 91% of all funds have been used for herbicide and mechanical control, 4% for monitoring, public outreach, legal and insurance costs and 5% for project coordination. Overall expenses by category for 2008 through June 2011 are listed in table 4.

## Public Relations/Landowner Agreements

Prior to implementation numerous public meetings were hosted by county weed superintendents and the project coordinator to inform landowners about phragmites, control techniques, grant opportunities, and to garner support. Public meetings were well-attended and had positive feedback. Mass mailings occurred prior to herbicide application to reach landowners that did not attend public meetings. Three- or ten-year agreements were obtained from landowners within the project area. Agreements allowed herbicide application and biomass removal on invasive plant species within the channels.

Approximately 700 landowners were contacted and agreements obtained. There is overwhelming landowner support of this project.

A variety of public relation activities also occurred. Multiple newspaper interviews were given and published in local papers. Some of these include the cities of Columbus, Aurora, Grand Island, Kearney, Lexington and North Platte. Television interviews were given and shown by NTV out of Axtell, Nebraska.

Quarterly letters are sent to landowners informing them of the progress made and to update them on future plans.

### **Control Implementation**

Arial and ground application techniques are used to apply herbicide while disking and shredding are used for biomass removal. Bid packages are sent to all contractors that have shown interest in the project. Contractors are selected on price, quality of previous work, references and time frame available. To date, the majority of applications have been performed by helicopter, biomass removal has been both disking and shredding. High river flows in 2010 prevented partial biomass removal from occurring but flows snapped two-year dead phragmites stems and removed the majority of standing dead biomass from North Platte to Elm Creek, Nebraska. Dead stands from Elm Creek to Columbus were treated the previous year and withstood scouring. Expected high river flows in 2011 should remove the majority of remaining dead biomass from Elm Creek to Columbus, Ne. Smaller side channels may still need mechanical biomass removal in 2011 and 2012. Infestations within and along Platte River channels are paid in full by partnering agencies. A cost share policy is in place for landowners with infestations outside of channel high banks and can be found at [www.plattevalleywma.org](http://www.plattevalleywma.org).

Initial evaluation of control is very positive. Herbicide application has proved effective with minimal reinfestations occurring. Flow conveyance has improved within the central Platte River as a result of this project and wildlife habitat has increased.



Initial Phragmites Infestation	After Herbicide Application	Current View of Channel
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### **Monitoring**

Helicopter flights were flown in 2010 along river channels from Columbus, Nebraska to Ogallala, Nebraska to evaluate control measures and to document reinfestations and/or missed infestations. A photo-point monitoring plan was implemented using a GPS-enabled digital camera and voice GPS documenting system. Monitoring data is used to document success of treatments and for guiding future control. 2011 monitoring flights are scheduled for July and/or August when plants are flowering.

Detailed maps showing invasive plant infestations remaining and approximate acres will be produced. Yearly monitoring is planned into the future to document long-term success of the project.

In 2010 WMA's implemented a monitoring program designed to detect phragmites infestations outside of Platte River channels. Color infrared imagery and GIS is used to detect infestations. County maps are produced and given to county weed districts to implement control measures. These outside infestations are considered seed sources and if not controlled have the ability to reinfest the channels of the Platte River.

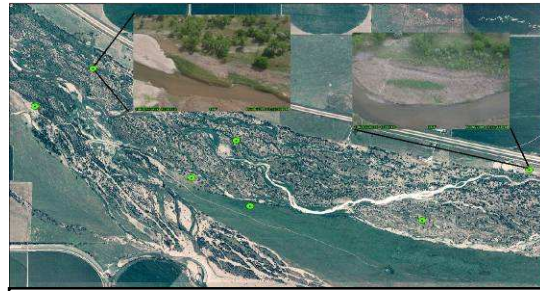


Photo-point monitoring examples

In 2008 PVWMA implemented a more quantified research design to develop best management practices for controlling phragmites. A second long term control research project is underway with the University of Nebraska at Lincoln as well. Results from both projects will be used in guiding future management decisions.

A pilot water quality test was done during late September 2009. Eleven water samples were collected at four locations. Found amounts of Imazapyr were far below FIFRA's LD50 of invertebrates' dosage which is greater than 100,000 ppb. The highest amount detected was 53 ppb in a slow moving backwater slough area that was surrounded by phragmites and received direct application. Complete water quality summary can be found at [www.plattevalleywma.org](http://www.plattevalleywma.org).

### **Future Goals**

WMA's have accomplished initial control and are now focusing on monitoring and sustaining control within river channels. Yearly monitoring flights will supply needed information on any remaining infestations and help detect reinfestations at an early stage. Control techniques will occur on any detected infestations with in channels of the Platte River. Infestations outside of river channels will be detected by aerial flights and county wide CIR imagery analysis. County weed districts will help implement cost share policy and ensure control measures.

Public outreach will be continued in 2011-12. Mass mailings are the primary communication with riparian landowners. Public meetings may be held during the summer of 2011, depending on need and management activities implemented. Public media events will be attended as desired to promote WMA's. Newspaper and TV interviews will be given as needed.



Overall goal – braided river channel free of invasive vegetation with moving sandbars

WMA's have secured funding for the 2011-12 fiscal year, contribution by partners are shown in Table 5. Major sources of funding are: Nebraska Environmental Trust Fund, the Platte River Recovery Implementation Program, Ducks Unlimited – NAWCA grant and Central Platte NRD.

Table 1.

**WCWMA and PVWMA Herbicide Application Efforts**

Bridge Segment	River Miles	Infestation acres (estimate)	Treated acres ( actual 07 and 08)	Treatment acres (actual 2009)	Treatment acres (actual 2010)
West end of McCaughney	5				120
North Platte River - Kingsley Dam to Hershey	40	1,000	0	574	313
North Platte River - Hershey to North Platte	15	1,000	375	380	291
South Platte – Keith/Duel county line – North Platte	70	700	100	96	30
North Platte to Gothenburg	30	2,500	2,219	0	517
Gothenburg to Cozad	13	730	830	0	325
Cozad to Darr	5	225	325	0	10
Darr to Lexington	5	600	550	0	250
Lexington to Overton	11	900	750	0	350
Overton to Elm Creek	7	400	450	0	192
Elm Creek to Odessa	7	700	0	410	33
Odessa to Kearney	9	700	0	607	25
Kearney to Minden	11	700	0	520	20
Minden to Gibbon	12	240	0	147	35
Gibbon to Shelton	9	280	0	429	460
Shelton to Wood River	10	350	0	100	505
Wood River to Alda North Channel	7	160	0	50	75
Wood River to Alda South Channel	7	800	0	176	150
Alda to Grand Island	6	120	41	250	44
Grand Island to #34	8	500	290	379	32
#34 to Chapman	8	700	0	877	150
Chapman to Central City	10	500	105	606	100
Central City to Clarks	10	500	249	442	125
Clarks to Silver Creek	10	700	300	700	100
Silver Creek to Columbus	16	800	200	736	150
<b>TOTAL</b>	<b>336</b>	<b>14,465</b>	<b>6,784</b>	<b>7,455</b>	<b>4,402</b>

**Total treated acres = 18,641**

Table 2.

**WCWMA and PVWMA Biomass Removal Efforts**

Bridge Segment	River miles	Infestation Acres (estimate)	Removal Acres (actual 07 and 08)	Removal Acres (actual 2009-10)	Removal Acres (actual 2010)
North Platte River - Kingsley Dam to Hershey	40	1,000			
North Platte River - Hershey to North Platte	15	1,000		252	
South Platte – Keith/Duel county line – North Platte	70	700			
North Platte to Gothenburg	30	2,500		120	
Gothenburg to Cozad	13	730	55	50	
Cozad to Darr	5	225	20		15
Darr to Lexington	5	600	185		
Lexington to Overton	11	900	50	150	
Overton to Elm Creek	7	400		50	90
Elm Creek to Odessa	7	700	330	15	
Odessa to Kearney	9	700	10	10	
Kearney to Minden	11	700			
Minden to Gibbon	12	240			
Gibbon to Shelton	9	280			
Shelton to Wood River	10	350	80	50	
Wood River to Alda North Channel	7	160	15		
Wood River to Alda South Channel	7	800			
Alda to Grand Island	6	120	100		
Grand Island to #34	8	500	247		
#34 to Chapman	8	700		10	
Chapman to Central City	10	500			
Central City to Clarks	10	500			
Clarks to Silver Creek	10	700			
Silver Creek to Columbus	16	800			
<b>TOTAL</b>	<b>336</b>	<b>14,465</b>	<b>1,092</b>	<b>707</b>	<b>105</b>

**Total biomass removal = 1,800 acres**

Table 3.

**Partners Contributing Monetary Amounts to Invasive Plant  
Species Management Within the WMA's.**

Agency*	2007-08	2008-09	2009-10	2010-2011	TOTAL
Nebraska Environmental Trust Fund Grant			\$231,166.88	\$319,311.37	\$550,478.25
Nebraska Department of Ag Noxious weed assistance fund grants	\$41,306.00	\$661,116.00	\$574,947.50		\$1,277,369.50
Central Platte NRD		\$100,000.00	\$100,941.59	\$46,209.00	\$
Tri-Basin NRD			\$12,790.50	\$8,907.30	\$
U.S. Fish and Wildlife Service		\$10,000.00			\$10,000.00
PSG and PTI - FWS grants (spent over three years)		\$145,000.00			\$145,000.00
Platte River Habitat Partnership		\$1,000.00			\$1,000.00
BASF chemical company		\$3,300.00			\$3,300.00
Ducks Unlimited – NAWCA grant		\$13,750.00		\$15,405.00	\$
Platte River Recovery Program			\$80,000.00	\$249,277.24	\$
<b>TOTAL</b>	\$41,306.00	\$934,166.00	\$999,846.47	\$639,109.91	\$2,573,122.21

\* Showing actual agency expenditures to PV and WC WMA's, total obligations may be higher, does not track other agency activities such as NPPD's, CNPPID's, TNC's, PRRIP's etc.

Table 4.

**Summary by Expense Category (2007- June 2011)**

Herbicide application and removal	Monitoring	Public Outreach	Legal and Insurance	Coordinator salary*	Totals
\$2,337,188.89	\$92,887.82	\$6,407.76	\$14,989.18	\$121,648.56	\$2,573,122.21
90.83%	3.60%	0.26%	0.59%	4.72%	100%

\*Includes salary, benefits, indirect costs and mileage expense, two coordinators in 2008

Table 5.

**2011-12 Financial Obligations per Partner**

Source	Amount
Nebraska Environmental Trust	\$649,522.00
Central Platte NRD	\$ 50,000.00
Ducks Unlimited – NAWCA Grant	\$196,664.00
Platte River Recovery Program	\$350,723.00
Nebraska Department of Agriculture	\$ 50,000.00
County Weed Districts	In-kind
Private Landowners Cooperation	Priceless
<b>TOTAL</b>	<b>\$1,296,909.00</b>

\*agencies with 2010-11 monies rolled over to 2011-12