



Parris N. Glendening
Governor

Maryland Department of Natural Resources

J. Charles Fox
Secretary

Kathleen Kennedy-Townsend
Lt. Governor

Tawes State Office Building
Annapolis, Maryland 21401

Karen M. White
Deputy Secretary

PHRAGMITES CONTROL LEGISLATIVE REPORT-2001

BACKGROUND

In 1996, the Maryland General Assembly passed a law enabling the Maryland Department of Natural Resources (DNR), in conjunction with the Maryland Department of the Environment (MDE), to implement a cost-share program to assist private landowners with the control of Phragmites on their lands (Title 8, Subtitle 21 of the Natural Resources Code). This subtitle established that the Department:

- shall provide cost share (up to \$60/acre) for private landowners wishing to control Phragmites;
- shall control Phragmites on lands owned by the DNR;
- may use aid, gift or grant to accomplish control;
- shall explore alternate control options and employ those determined not to have adverse water quality impacts;
- shall study and analyze control efforts;
- shall adopt regulations to carry out the provisions of the subtitle.

The law requires the Department to submit an annual report on Phragmites control efforts. This report summarizes Phragmites control efforts in Maryland during 2001.

DNR PUBLIC LAND ACTIVITIES

In 2001, the Department applied the herbicide RODEO by helicopter to 400 acres of Phragmites on state-owned Wildlife Management Areas on the Eastern Shore (Table1). Previous aerial reconnaissance by the Department had targeted 200-acre stands of Phragmites on the Patuxent River and 200 acres on the Back River for control in the fall of 2001. Plans had to be changed based on the closure of the airspace around the major airports of Baltimore- Washington International and Reagan National after the 9/11 attacks. The 2001 aerial spraying activities were

complicated and curtailed by FAA restrictions that occasionally shut down spraying activities during mid-flight. Eventually, the Department's focus shifted to the marshes of the Eastern Shore where fewer restrictions existed. Costs of herbicide, surfactant, drift control and helicopter application totaled \$33534.75, or an average cost of \$84.00 per acre. The funding was provided by the Maryland Waterfowl Stamp Fund.

Table 1. Aerial applications on public lands in 2001.

Aerial Applications/Public Lands	Acres
Maryland Marine Properties/ Somerset County	200
Deal Island WMA/ Somerset County	50
Fishing Bay WMA/ Dorchester	150
Total Acres	400

Associated Costs:

Helicopter Applicator	\$14,000.00
Rodeo(Herbicide)	\$18,864.00
Drift Control	\$168.00
Adjuvant	\$502.75

Total Cost	\$33,534.75 (about \$84.00/acre)
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**DNR PRIVATE LANDS
PHRAGMITES CONTROL
COST SHARE PROGRAM**

In 2001, the Department drafted a plan for phragmites control activities in Maryland (Attachment B). This year's program was the most successful thus far, at offering both financial and technical assistance to the public. As in the past, \$10,000.00 was made available from Maryland's Department of Environment (MDE) and the remaining funds from \$25,000.00 allocated by the Governor's Office in 2000 (about \$13,000). Approximately 400 acres of phragmites were treated on private lands by air and truck in the 2001 DNR Cost-Share Program and at least 200 acres were controlled through technical services provided by the DNR.

In 2001, DNR expanded the program to include landowners in Dorchester and Worcester counties. Initially, Somerset and Wicomico counties were targeted because of large stands of Phragmites in tidal wetlands that threaten migratory waterfowl habitat. A news release went to the media in early July, 2001 describing the details of the Phragmites Control Cost Share Program and the counties where the program applied (Attachment B). Also, WBOC Channel 16 of Salisbury ran a segment concerning the Program. In past years, the DNR had utilized the Chesapeake Wildlife

Heritage of Easton to serve as primary contact for questions concerning the Phragmites Control Cost Share Program offered by the Department. In 2001, the DNR decided to administer the Program solely through the DNR's Wye Mills Field Office.

Prior Phragmites Control Cost-Share Programs were limited to landowners wishing to spray Phragmites stands totaling 3 acres or more, where aerial applications were the only feasible means for control. A partnership formed by the DNR's Wildlife and Heritage Service and Maryland Department of Agriculture's Weed Management Division in 2001 allowed the program to offer control efforts to all landowners, large or small. Phragmites spraying coincided with a slow period for MDA's Weed Management personnel. Weed Management personnel in all four counties in the Phragmites Control Cost-Share Program offered their time and expertise @ \$70.00/hr. Herbicide was provided by the DNR, as State cost-share towards the control efforts

Over 200 landowners and individuals requesting information about Phragmites control contacted DNR between July and November 2001. Of these, 101 landowners participated in helicopter and truck control efforts on 391.25 acres at a cost to the Department of \$20,480.45, or an average cost of \$52.40/acre (Tables 2 & 3). This arrangement provided landowners with savings of approximately \$60.00/acre compared to helicopter applications and approximately \$200.00/acre for truck applications.

Table 2. Private Lands Phragmites Cost Share Program - aerial applications.

Aerial Applications/Private Lands	Acres
Tudor Farms/Dorchester	100
John Tieder/Dorchester	30
Marshall Doeller/Dorchester	30
Mike Totten/Dorchester	20
Chesapeake Hyatt/Dorchester	16
Richard Balling/Dorchester	6
Ralph Davis/Dorchester	4
Wm. Bunting/Somerset	30
Maryland Ornith. Soc./Somerset	20
Larry Antonick/Somerset	5
Ronald Fisher/Wicomico	5
Phil Wells/Wicomico	5
TOTAL	271

Associated Costs:
 Landowner Share \$13,550.00
 DNR Cost Share (herbicide, surfactant) \$12,919.13
 DNR Avg. Cost/acre--\$47.67
 Landowner Avg. Cost/Acre--\$50.00

Table 3. Maryland Department of Natural Resources and Department of Agriculture's Cooperative Phragmites Control Program - truck applications.

Truck Spraying/ Private Lands	Acres
24 Landowners (Worcester/Wicomico)	28.25
8 Landowners (Somerset)	9.50
57 Landowners (Dorchester)	82.50
Total: 89 Landowners	120.25

DNR. Avg Cost/acre---\$62.88 (DNR Total Cost-\$7,561.32)

Landowner Avg. Cost/Acre--\$116.96 (MDA CHARGES)

DNR TECHNICAL ASSISTANCE

The DNR's Phragmites Control Cost-Share Program was administered in Worcester, Somerset, Wicomico and Dorchester counties. However, there were many inquiries for assistance from other counties. Inquiries ranged from individuals who wished to control their own Phragmites, to those wishing to hire professional applicators to achieve control. The Department served as a clearinghouse for landowners requesting assistance. Advice for permitting procedures, helicopter applicators, professional applicators and MDA's Weed Control personnel was provided. Although virtually impossible for the DNR to track all control measures on Phragmites by all entities and organizations, follow up conversations with applicators provided additional information (Tables 4 & 5).

Table 4. Department of Agriculture's Phragmites Control in Non-Cost Share Counties.

County	Landowner Cost	Acres	Number of Landowners
Anne Arundel	\$475.00	4.0	6
Caroline	\$2006.63	12.25	10
Carroll	\$144.55	.50	1
Cecil	\$1299.25	7.0	1
Kent	\$10,275.00	31.0	16
Queen Anne	\$2,761.00	20.0	20
St. Mary	\$1,000.00	6.0	2
Talbot	\$13,185.00	22.75	23
Total	\$31,403.18	103.50	79

Avg. Landowner Cost/Acre—\$303.41

Table 5. Aerial Application In Non-Cost Share Counties (Submitted by East Coast Helicopter Inc.)

County	Total Cost	Number of Landowners	Acres
Kent	\$13,383.70	2	121.67
Caroline	\$733.70	1	6.67
Talbot	\$660.00	1	6.00
Total	\$14,777.40	4	134.34

Avg. Cost/Acre - \$110.00

ATTACHMENT A

Maryland Phragmites Control Plan for 2001
Prepared by
Donald Webster and Edith Thompson
Maryland Department of Natural Resources

Goals for 2001 Season:

Identify as priorities for the 2001 season, stands of greatest threat to wildlife habitat and that constitute:

- a Large acreage of phragmites that reduce the value of entire wetland systems on the lower Eastern Shore.
 - b Colonies forming in the midst of existing, diverse wetlands, including those 3 acres or less.
 - c Colonies forming in wetlands damaged by human or other activities.
- 2) Control smaller Phragmites stands with applications, where possible, by truck.

Actions on Private Lands:

- 1) Include Worcester and Dorchester counties in 2001 Phragmites Control Cost-Share Program on Private lands.

In 2000, Somerset and Wicomico counties were targeted for the Cost-Share Program because these counties have large acreage of Phragmites stands that have reduced and degraded the habitat quality of wetlands. However, phone calls received from private landowners during the 2000 program indicated a greater landowner interest in controlling Phragmites in Worcester and Dorchester. Worcester and Dorchester counties have expansive Phragmites colonies on private marshes that are reducing and degrading the habitat value of wetlands. Controlling larger stands in these two counties would improve the diversity of these wetland habitats.

Offering Phragmites control cost-share services is more economically efficient when efforts are concentrated in counties grouped together, such as these counties on the Lower Eastern Shore. Moving operations to other, isolated counties in the state increases the state costs because of the cost of moving helicopters, trucks and other equipment. Limited staff and resources also impact the relatively short window of opportunity available for controlling Phragmites during its growing period. Before moving operations to parts of the state other than the Lower Eastern Shore, DNR should consider the identification and assignment of staff and equipment able to treat important Phragmites stands and to serve willing landowners during this window of opportunity.

1 Provide the same level of cost-share funds to private landowners requesting assistance as was provided last year.

3) Draft a statutory change to the Maryland Phragmites Control Cost-Share Program to increase the cost-share amount from a maximum \$60/acre to a maximum that covers the total cost of herbicide application (over \$100/acre). Draft an incremental scale of maximum cost-share up to total cost using criteria based on the relative ecological significance of the stands.

In 2000, many landowners expressed concern that their share (flat-rated at \$50/acre) for control of Phragmites was too high. Many landowners on the lower Eastern Shore were unable to afford the costs associated with control efforts. DNR's effort to restore important wetland areas should not be influenced by the ability of a private landowner to pay toward the cost of controlling Phragmites if it is a major factor in the loss of the values of wetlands for wildlife on that property.

4) Work with Tributary Teams, Watershed Associations and the Natural Resource Conservation Service to develop educational material on Phragmites for landowners and to help distribute this information.

Low numbers of private landowners interested in working with DNR on controlling larger stands of Phragmites on their properties is caused, in part, by lack of knowledge about the destructive nature of this plant in wetlands and the opportunities offered by the State to help control it.

5 Foster interstate agency cooperation.

The Department of Natural Resources will lead efforts to secure cooperation of those State agencies with land management responsibilities and/or technical expertise dealing with phragmites on public and private lands to explore the feasibility and practicality of developing a state-wide comprehensive Phragmites control program.

The activities envisioned in FY 2002 will to be inventory State resources devoted to phragmites management and control; enlist the cooperation of all state agencies in concept; produce a draft MOU; identify issues of State and private lands concern; begin an interagency discussion group which will develop objectives for FY 2003 agency budgets

Actions on Public Lands:

DNR will spray from the air 100 acres at Merkle Wildlife Sanctuary/Patuxent River Park; 200 acres at Handy; and 100 acres at Blackmarsh.

Background Information

Biology of Phragmites

Phragmites, or common reed, is a large perennial rhizomatous grass. It typically grows in marshes and swamps, along streams, lakes, ponds, ditches, and wet wastelands. Although there is some scientific evidence that *Phragmites australis* is endemic to the Northeastern United States, there is also evidence that exotic and invasive genotypes have been introduced to this area as well. It is very difficult to eradicate because it spreads through stoloniferous rhizomes that may reach 10 m or more in length. Rhizomes can reach down almost 2 meters below ground, their roots penetrating even deeper, allowing the plant to reach low lying ground water (Haslam 1970). Killing frosts may knock the

plants back temporarily but can ultimately increase stand densities by stimulating bud development. In smaller stands, shoots that fall over can produce roots and rhizomes that spread far from the original plant. It can colonize in almost any wet soil type, but grows best in firm mineral clays. It can tolerate moderate salinity and thrives where water level fluctuates from 15 cm below soil surface to 15 cm above. Phragmites seeds are shed from November through January.

Phragmites can survive, and in fact thrive, in stagnant waters where the sediments are poorly aerated at best. Air spaces in the above-ground stems and in the rhizomes themselves assure the underground parts of the plant have a relatively fresh supply of air. This characteristic and the species' salinity tolerance allow it to grow where few others can survive. In addition the build up of litter from the aerial shoots within stands prevents or discourages other species from germinating and becoming established. The rhizomes and roots themselves form dense mats that further discourage competitors. These characteristics are what enable Phragmites to spread, push other species out and form monotypic stands.

Phragmites has little habitat value for wildlife. Occasionally, songbirds will roost in Phragmites' colonies and muskrats will feed on rhizomes, when more favorable plants are not available. The reduction of large colonies will increase plant diversity and encourage use by many species of wildlife. However, its tendency to form dense monotypic stands has a negative effect on healthy diversity of wetland areas and is included on The Nature Conservancy's "hit list" of exotic invasive species.

However, The Nature Conservancy also acknowledges that not all Phragmites stands are invasive or pose a threat to the diversity of native habitats and rare species. Young stands of Phragmites may or may not become problematic to the surrounding wetlands. Where Phragmites appears to be spreading and outcompeting native wetlands plants, altering and destroying habitat for native species, it should be controlled. While eradication of Phragmites is often expressed as an ultimate goal, it should be noted that it has, in one form or another, been here for thousands of years and may occupy an important niche in our native wetland habitats. The plants ability to colonize and spread in disturbed soils makes it very difficult to eradicate. Prioritization of goals for Maryland's Phragmites control program can help target limited resources to areas in greatest danger of losing important plant diversity.

May 30, 2001

ATTACHMENT B

MARYLAND DEPARTMENT OF NATURAL RESOURCES OFFERS COST SHARE ASSISTANCE FOR PHRAGMITES CONTROL

In partnership with Maryland Department of Agriculture's Weed Management Division, the Department of Natural Resources' Wildlife and Heritage Division will offer both financial and technical assistance towards the control of Phragmites on private lands this fall. Requests for financial assistance in the control of Phragmites must be made by landowners to the Department of Natural Resources' Wildlife and Heritage Division and must be received by September 15, 2001.

Also known as "common reed", Phragmites is an invasive wetland plant species that spreads rapidly by rhizomes and seed in both tidal and non-tidal wetlands. Phragmites out-competes valuable wetland plants that provide both winter food and cover for a variety of wetland dependent wildlife species. While scientific debate continues over the native origin of this plant, it is generally considered to be exotic to the Chesapeake Bay.

The 2001 Phragmites Control Cost Share Program will be offered to landowners in Dorchester, Wicomico, Somerset and Worcester counties. Priority will be given to individuals who own properties containing stands of Phragmites that significantly threaten the preservation of valuable wildlife habitats.

The Department of Natural Resources will be providing the herbicide (Rodeo® or Glypro®) as its cost share portion of the program. Landowners will be responsible for the charges related to the cost of application, either hourly or by the acre, provided by the Certified Applicator. The herbicide used in the cost-share program is provided in part by the Maryland Department of the Environment.

Interested landowners should contact Donald Webster (Waterfowl Habitat Manager at (410) 971-9026 to determine eligibility for the Program. Applicants interested in spraying in wetlands to control Phragmites are responsible for obtaining necessary permits before spraying activities begin. Applications are available upon request