

2003 Freshwater Emergent Noxious and Quarantine Weed Water Quality Group Monitoring Plan Results

The purpose of this monitoring program is to record any residual concentrations of aquatic herbicides used to treat various freshwater emergent noxious and quarantine weed species in the effected water bodies.

Herbicide application treatments that were monitored occurred between August 4 and September 2, 2003. All treatments were conducted by applicators licensed by the Washington State Department of Agriculture. Three sites in King County, one site in Grays Harbor County and two sites in Yakima County were sampled before and after the herbicide Glyphosate was applied for the control of freshwater emergent noxious weeds. Both boat mounted power equipment and manually operated backpack sprayers were used for application. Some of the sites were located near flowing water along rivers and creeks and some were located near the relatively slow moving water along lakeshores.

For more information on sampling procedures and protocols see the *Annual Group Monitoring Plan for Herbicide Application to Freshwater Emergent Noxious and Quarantine Weeds performed under the Noxious Weed National Pollutant Discharge Elimination System (NPDES) Permit*.

RESULTS

A laboratory accredited by the Washington State Department of Ecology using Analytical Method Number EPA 547 analyzed all of the samples. The sampling regime and resultant laboratory results follow. All detectible levels of Glyphosate are in parts per billion (ppb). ND indicates that Glyphosate was not detected.

Site #1

On June 19, less than 1/3 of an acre of parrotfeather was treated in a site known as Pond #6 near the Yakima River. Staff from the Yakima County Noxious Weed Control Board applied a mixture of six ounces of Glyphosate per gallon of water. Staff from the Department's of Ecology and Agriculture conducted the monitoring.

Sample Time	Results
1 hour before treatment	ND
1 hour after treatment	343 ppb
24 hours after treatment	53 ppb

Table1. Pond #6 treatment site results.

Site #2

On August 4, 2003, approximately 11 acres of purple loosestrife infestations along the margins of the Chehalis River, just west of the Montesano Road Boat Launch, were treated with a 2% solution of Glyphosate using boat mounted power equipment by staff from the Washington State Department of Fish and Wildlife. Staff from the Washington State Department of Agriculture conducted monitoring.

Sample Time	Results
1 hour before treatment	ND
1 hour after treatment	ND
24 hours after treatment	ND

Table 2. Chehalis River treatment site results.

Site #3

On August 13, 2003, fragrant water lily plants on Spring Lake in King County were treated with a 1.5% solution of Glyphosate using boat mounted power equipment. Yellow flag iris and purple loosestrife infestations along the banks of the lake were treated with a 1.5% solution of Glyphosate using a backpack sprayer. The total treatment area was approximately 3 acres. The applications were made by a commercial applicator. King County staff conducted monitoring.

Sample Time	Results
1 hour before treatment	ND
1 hour after treatment	30 ppb
24 hours after treatment	ND

Table 3. Spring Lake treatment site results, treatment #1.

Site #4

On August 13, 2003, purple loosestrife plants along Cottage Creek in King County were treated with a 1.5% solution of Glyphosate using a backpack sprayer. The application was made by staff from the King County Noxious Weed Control Board. Monitoring samples were taken by staff from the King County Noxious Weed Control Board.

Sample Time	Results
1 hour before treatment	ND
1 hour after treatment	ND
24 hours after treatment	ND

Table 4. Cottage Creek treatment site results.

Site #5

On August 26, 2003, fragrant water lily plants on Spring Lake in King County were again treated with Glyphosate using boat mounted power equipment. A repeat application was made to the yellow flag iris and purple loosestrife infestations along the banks of the lake as well again using a backpack sprayer. A 1.5% solution of Glyphosate was used in both applications. As there was a detectible residue sample in the first application on August 13, it was decided to sample the site again. The applications were made by a commercial applicator. Monitoring samples were taken by staff from the King County Noxious Weed Control Board.

Sample Time	Results
1 hour before treatment	ND
1 hour after treatment	120 ppb
24 hours after treatment	ND

Table 5. Spring Lake treatment site results, treatment #2.

Site #6

On September 2, 2003, a small infestation (less than ¼ acre) of purple loosestrife plants growing near the Yakima River in Yakima County were treated with a 2% solution of Glyphosate using a backpack sprayer. The applications were made by staff from the Yakima County Noxious Weed Control Board. Monitoring samples were taken by staff from the Washington State Department of Agriculture.

Sample Time	Results
1 hour before treatment	ND
1 hour after treatment	ND
24 hours after treatment	ND

Table 6. Yakima River (Yakima Greenway) treatment site results.

Discussion

The results of the 2003-monitoring program indicate very little if any Glyphosate remains in the water near treatment sites. The samples that were positive were from “Pond #6” in Yakima County and Spring Lake in King County. This may be due to the slower movement of water in ponds and lakes as opposed to a river or creek where any residual herbicide is more quickly washed downstream.

For Spring Lake, both of the positive samples were from the one-hour post-treatment sample time. The 24-hour post-treatment samples were negative. The treatment in “Pond #6” resulted in positive samples in the one-hour post and the twenty-four hour post samples. This was probably due to the relatively small size of the pond and very little water movement. It should be noted that all of the positive sample levels of 30, 53, 120 and 343 ppb are well below the EPA drinking water standard of 700 ppb.