

Lake Campbell and Lake Erie 2011 Aquatic Plant Control Program

Prepared By
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Project Overview

This is the final year of a two-year contract encompassing the control of Eurasian watermilfoil within the Lake Erie and Lake Campbell water systems. Both lakes have been involved with an ongoing effort to eradicate non-native noxious species from their macrophyte composition and transform each water body to a system dominated with native species. This report reviews all activities undertaken at both lake systems during the year 2011. The major components of this year's work consisted of aquatic weed surveys and weed control activities. Prior to the 2011 season, eradication of the problematic species had not occurred. Results noted at the close of 2010 were encouraging as it appeared only small problematic patches of Milfoil remained.

Survey Protocol

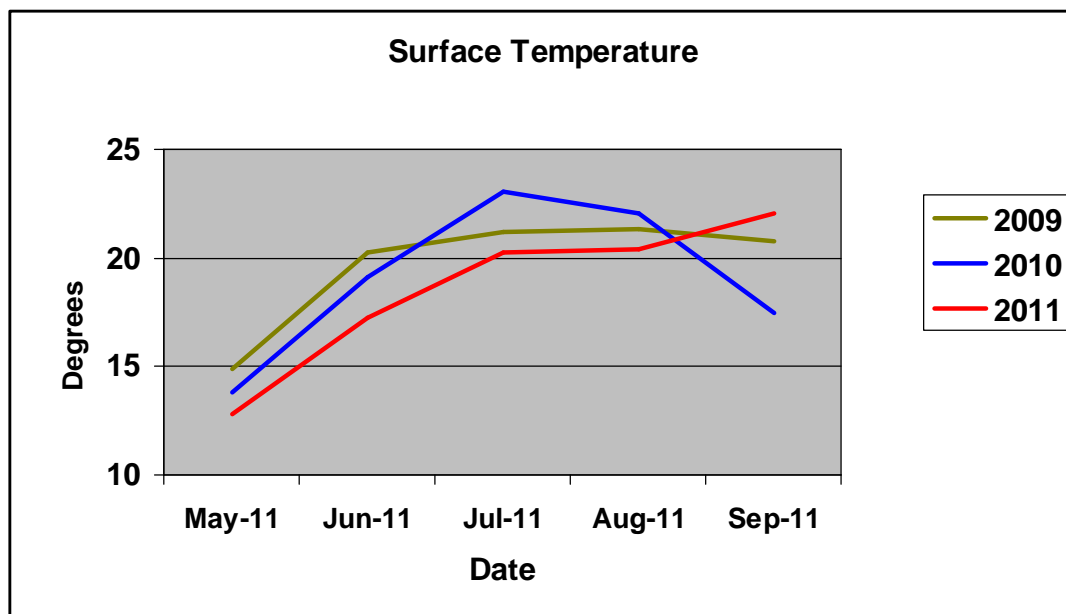
Survey techniques were typical of those utilized during 2010 and are identified throughout the industry as "standard protocol." Survey protocol during the spring surveys were slightly changed as a result of the excellent water clarity experienced at both lakes. Water clarity and weather conditions resulted in the survey team having the ability to observe the lake bottom and identify plant coverage without the need of divers or extensive manual bottom sampling. As noted, clarity to the lake bottom allowed for a complete visual observation of both lakes' littoral zones. Typically, sampling consists of manually retrieving weed samples from numerous locations lake-wide. Although effective, this process can only identify plants within the immediate area sampled. Visual observation is a far superior method for plant inventory since it allows for inspection of the entire lake bottom wherever the survey boat operates. This avoids the possibility of missing plants between bottom surveying data points. Data was gathered while traversing

both lakes in a gas-powered boat. To ensure the efficacy of the survey, a bottom sampling rake was thrown from the boat at various locations lake-wide. The rake was then drawn across the lake bottom, brought to the surface and into the boat. Plants attached to the rake were identified and confirmed as being the same species as noted visually through the water column. If the lake bottom were void of plants, no data was stored. The survey boat spent most of the day within 600 feet of the shoreline.

When non-native species were identified, data was collected and stored on a Trimble Geo XT GPS system. Nuphar (Spatterdock) and Nymphaea (Fragrant Water Lily) infestation data had been collected during 2010 and were not incorporated into this year's survey protocol. Nuphar and Nymphaea growth rates are relatively slow, and there were no expectations that the species had increased in range since the 2010 survey. The survey boat started collecting data circling the immediate shore. Once the initial shoreline pass was completed, the boat moved outward approximately 50 to 100 feet for each successive pass. The survey was completed once the boat obtained a 600 foot distance from the shoreline.

Lake Campbell Pre Treatment Survey Results

Lake Campbell and Lake Erie were visited on June 25 & 26. At the time of the survey secchi disc readings at both lakes were noted as being excellent with all readings reaching the bottom. The survey was delayed due to the high water level and unseasonably low water temperature. Cooler spring temperatures have a tendency to delay seed germination and plant growth.



Surface Water Temperature Example for Steilacoom Lake

There were only two fragmented Milfoil plants, Milfoil root crowns or fully developed Milfoil plants dislodged from the bottom and floating on the lake's surface. Both fragments were observed west of the boat launch. Rooted Milfoil plants were identified along only a small section of the shallow northwest shoreline, directly west of the public boat launch. The remainder of the lake was void of any Milfoil plants. In sharp contrast to the 2010 spring survey, the 2011 survey did identify limited small single native plants beginning to re-colonize the lake. Species noted were Pondweeds, Bladderwort and Najas.



Lake Campbell Milfoil Locations Spring 2011

Lake Erie

There were no observed Milfoil fragments floating on the lake's surface or along the shoreline. Only one small colony of Milfoil was identified along the far western shoreline of the lake. This colony was observed inhabiting a shallow area of submerged tree limbs. Much of the lake bottom was then experiencing native plant growth consisting of Najas, Pondweeds, Bladderwort and Coontail. Plants were small but widespread throughout the lake basin. It was difficult to determine if the noted growth would create problems later in the season.



Lake Erie Milfoil Locations Spring 2011

Proposed Treatments

Lake Campbell

Treatment of the Milfoil infestation located west of the boat launch encompassed approximately 7 acres. This area had not responded favorably to past applications, having been sprayed on a yearly basis for the last ten years. It would appear that concentration rates necessary to control the species were not being maintained long enough to effectively eradicate the species. Our 2011 treatment protocol required two separate 2,4-D applications conducted 24 hours apart. Each application would consist of material being applied at 2 ppm label concentration rates. The resulting methodology would produce a maximum allowable rate of 4 ppm being applied over the 24 hour cycle. This split application approach would hypothetically create a situation whereby the required lethal dose of 1ppm would be available for plant uptake for at least 24 hours. Similar split application approaches have worked well at other treatment sites where premature product dilution resulted in plant control failure.

Residential docks were experiencing encroachment from nearby Spadderdock plants prohibiting access to shoreline, boat docks and swimming areas. Treatment of restricted recreational areas inflicted with Spadderdock issues were targeted with a 2% glyphosate spray mixture. Spraying was scheduled to take place twice during the summer and fall seasons. Management would consist of controlling the targeted species in an area no greater than 25 feet on each side of the dock. Residential properties that do not support docks but have already established channels directed outward to the main water-body would also be sprayed providing the resident with a 25-foot swath out to the main lake basin. Properties not supporting docks or existing channels would not be sprayed unless the property owner clearly identifies the location of where the channel was to be provided.

Yellow Iris - Yellow Iris is a state listed noxious species. The plant currently occupies large sections of the shoreline mainly noted throughout the northwestern shoreline (wetland) portion of the lake. Yellow Iris would be sprayed with a 2% glyphosate solution.

Lake Erie

The split application approach would also be utilized at this site to control the small milfoil patch located at the far western sector of the lake. Treatment of shoreline filamentous algae problems located near residential properties would take place if the problem persisted at the time weed control activities commenced. Control would utilize a subsurface injection of Hydrothol 191 applied at a rate of .2 ppm., spraying of the Spadderdock adjacent to the public boat launch encompassing no more than a five to ten foot swath next to the edge of the infestation. This procedure would slow down the plants encroachment into the main lake body.

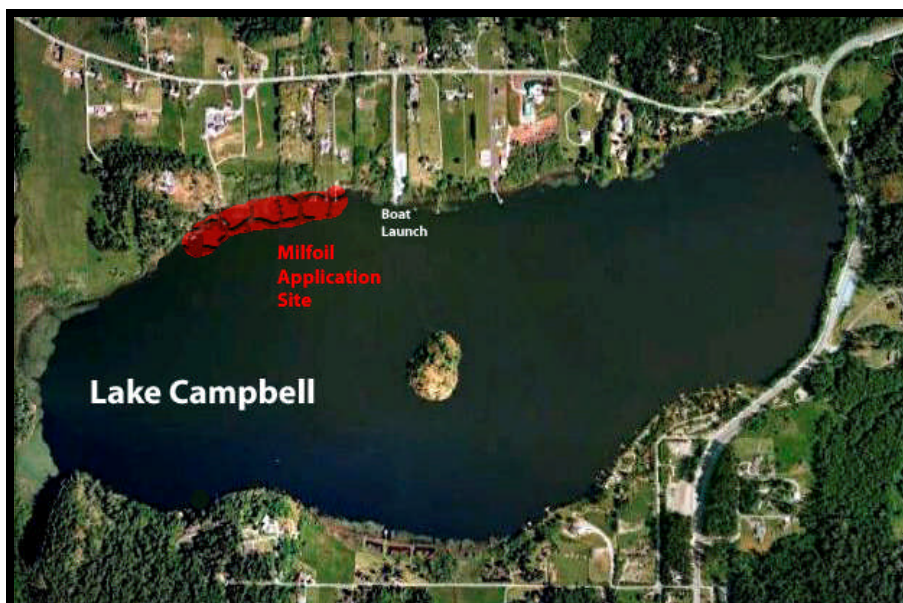
Considering the potential diffusion of material outside the targeted plant zones, treatment within both lakes would entail a shoreline application of 2,4-D extending outward 100 feet. Application protocol would utilize weighted injection hoses mounted on the bow of an Airgator Airboat. Material would be discharged at two points throughout the water column. One discharge point would be along the lake bottom and the second would occur approximately three feet below the waters surface. Total water column concentrations per application were targeted at a rate of 2 ppm. Milfoil is susceptible to concentrations of 1 ppm or greater if plant exposure to the herbicide is at or longer than 24 hours. By targeting a higher concentration as diffusion occurs, lethal concentrations should remain above the 1 ppm threshold in excess of 24 hours.

August Macrophyte Control

Lake Campbell and Erie shorelines were posted on Monday August 8, the day of the application. Notification complied with state and federal regulations.

Lake Campbell August 8 & 9, 2011

Lake Campbell received treatment on August 9. The equipment storage and staging area was located at a private residence just north of the boat launch. Material was stored in a locked cargo truck and transferred from the truck to the application boat as needed. Once material transfer occurred and the boat tanks were full, the boat operator and licensed applicator proceeded to the targeted treatment sites and dispersed the material. Eight acres of the lake were treated with 25 gallons of DMA 4IVM for Milfoil control. In addition to the DMA 4IVM, approximately 30 lbs of Renovate MAX G was also applied to selected milfoil colonies within the targeted site. A second application of 25 gallons of DMA 4IVM occurred on August 9.



Milfoil Application Sites

Purple Loosestrife, Yellow Loosestrife, Yellow Iris and Nuphar (Spadderdock) were also targeted during the August 8 spray event. Herbicide, adjuvant, dye marker and water were mixed on board and stored in two 25 gallon tanks. Once mixed, the material was then applied through a spray handgun. The application boat traveled along the shoreline and dispersed the mixture to identified infestations. One lot infested with Purple Loosestrife did not receive spray because of the property owner's presence in close proximity to the targeted plants.

Lake Erie also received treatment for Milfoil and Spatterdock on August 8th & 9th. Only one acre of Milfoil was targeted with five gallons of DMA 4IVM applied during each spray event. Targeted Spatterdock plants located adjacent to the Department of Fish and Wildlife boat launch shoreline also received treatment. The same procedures and application techniques utilized at Lake Campbell were also implemented on Lake Erie.



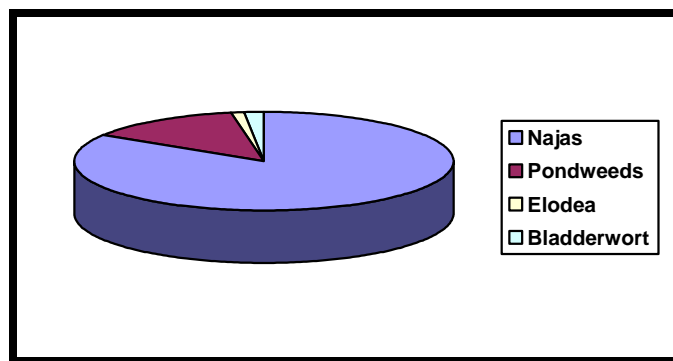
Application Sites Spring 2011

Lake Erie Macrophyte Survey August 29, 2011

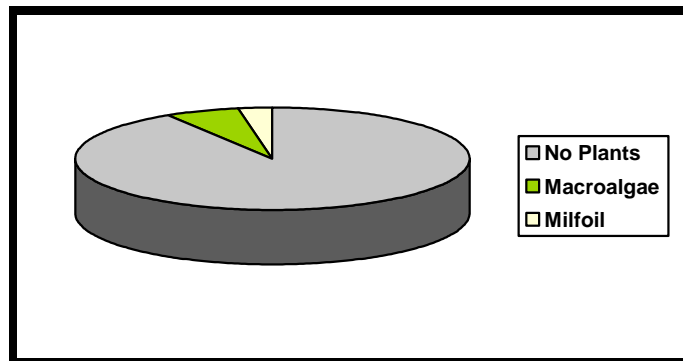
Lake Erie was surveyed on August 29, 2011. The fall survey occurred at this time because of concerns directed at apparent weed growth throughout the lake basin. Reports received identified that plant growth was dense and surfacing at various locations lake-wide. Concerns were directed at the possibility of the growth being newly colonized

Milfoil plants. Upon completion of the survey, there were no Milfoil plants observed anchored to the lake bottom, floating on the surface or along the lake shoreline.

Unfortunately, the concerns raised by the local residents directed at problematic late season plant growth proved to be accurate. Most of the lake bottom was occupied with dense growth of the native plant *Najas*. Some shoreline areas were experiencing such dense and accelerated growth at the surface and just below the surface that our survey boat experienced difficulties passing through the plant masses. Although the density of the plants and length of the plants varied lake-wide, in general, this particular species was found throughout with no portion of the lake void of this species. Densities and growth appeared heaviest along the immediate shorelines outward approximately 500 feet. Although *Najas* was the dominant macrophyte noted in the survey, other plants such as Pondweeds, *Elodea* and Coontail comprised a small percentage of the macrophyte composition. Two hundred and sixteen (216) sampling points resulted from the survey; 202 contained *Najas*, 32 pondweeds, 3 *elodea* and 4 coontail.



August 2011 Macrophyte Survey

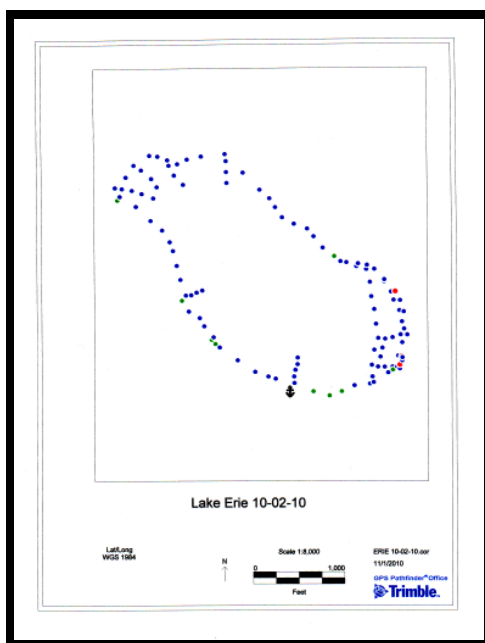


Fall 2010 Macrophyte Survey

In prior years water clarity was poor, prohibiting light penetration down to the lake's bottom sediments. During 2011, no algae blooms were reported until mid-September providing an extremely favorable environment for the germination of dormant seeds that were deposited throughout the lake prior to the initial fluridone applications. This seed bed now germinated lake-wide producing dense growth. Where no or very little growth was documented during 2010, the 2011 season produced a lake-wide evolution of new

macrophytes. These macrophytes assisted in absorbing nutrients from the water column delaying historic summer algae bloom events.

Plants create both a positive and negative effect (nutrient sink) within a lake system depending on the time of the year and condition of the plants. During summer months, plants are absorbing nutrients from the surrounding water and sediments (positive nutrient sink). Once these macrophytes' life cycles are completed, they begin to decay and release all of the nutrients stored as plant biomass back into the lake as nutrients. These nutrients soon become available, encourage, and often support prolific growth of algae. This same productive algae development that occurs naturally upon plant die-off also occurs when plants are controlled chemically and decompose post application.



Blue dots no macrophytes



All dots macrophytes

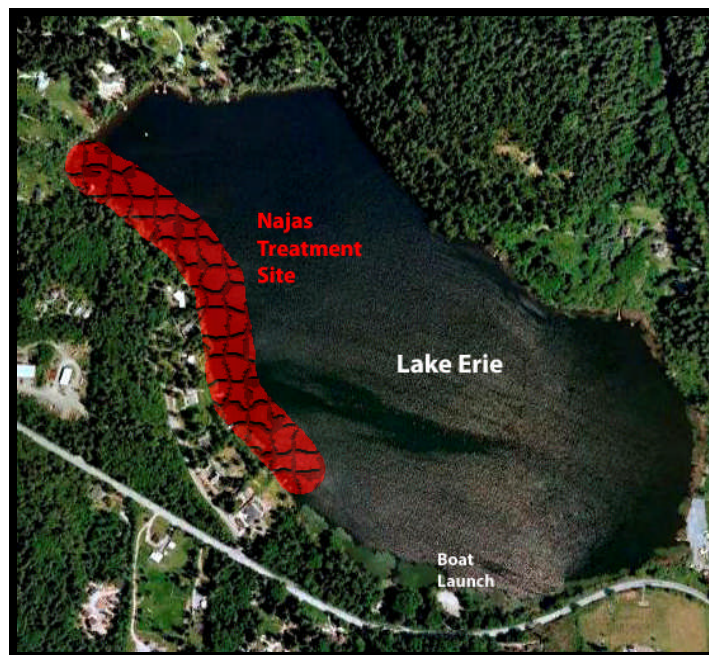
Lake Campbell Macrophyte Survey August 29, 2011

Areas treated earlier in the year at Lake Campbell were surveyed at this time. Milfoil plants were responding to the treatment resulting in the typical response to 2,4-D exposure. Although damage to the plants was apparent, the degree of response was inconsistent throughout the site. Nuphar, Yellow Iris and Loosestrife plants were all responding positively to the glyphosate application. Plants were in all stages of decomposition exhibiting yellow, brown and black color on emergent leaf structures.

September Macrophyte Control

The need to supply some category of relief to those residents that were now experiencing swimming and boating hazards required a review of the remaining budget in an effort to determine if funds were available to support additional control measures. Upon discussion and review of the remaining budget, a determination followed that allowed for limited management of the identified problematic growth.

Approximately twelve acres of the lake located west of the boat launch along the residential shoreline area were treated with the contact herbicide diquat on 9-06-2011. The targeted site received treatment at the rate of two gallons per surface acre. Although a greater acreage required action, funding only permitted a twelve acre section to receive treatment. Lake water was drawn into a pumping system that was then infused with the herbicide via an injection manifold. The mixture was then dispersed back into the lake through four, half inch spray hoses positioned approximately one foot below the water's surface.

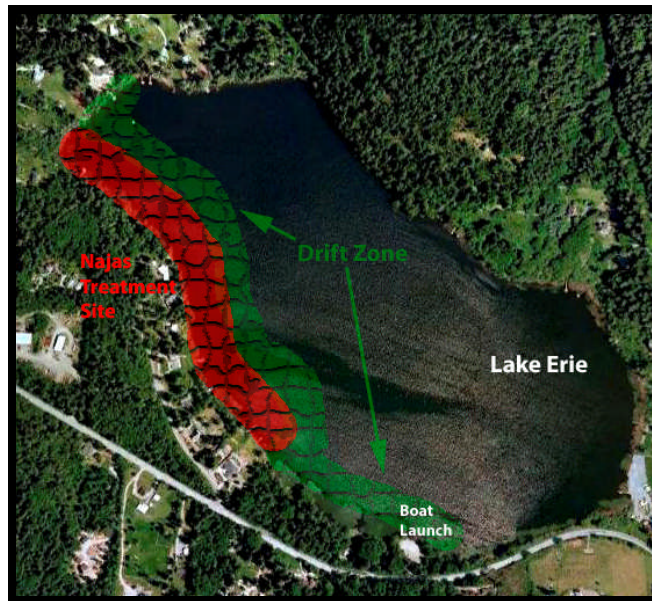


Najas Treatment Site

Lake Erie Post 9-06-2011 Treatment Survey Results

A brief survey of Lake Erie was conducted on October 4, 2011. The intent of this survey was to determine the degree of control achieved resulting from the September 6, 2011 management action. All the plants within the targeted treatment zone had responded well

to the treatment. There were no plants noted upright within the treatment area or directly adjacent to the targeted site. Plants were decaying along the bottom substrate. As the survey boat proceeded outward from the perimeter of the treatment site, the percentage of control obtained decreased. Only ten acres of the lake were originally targeted; however, drift outside of the site resulted in complete control of approximately 13 acres. Various supplementary degrees of control were also acknowledged beyond the 13 acre treatment zone.



Treatment and Drift Zones

Lake Campbell 10-4-2011 Treatment & Survey Results

Water clarity at the time of the survey was poor with the lake experiencing a planktonic algae bloom that was producing a surface scum. There were no floating Milfoil fragments observed along the shoreline or on the water's surface. The survey revealed the absence of Milfoil plants from within the lake proper except for a small area located west of the boat launch. This was the same area targeted for control earlier in the year. Plant densities had decreased to only a few plants along with a decrease in the area where the plants were located.



Treatment of this small Milfoil infestation was again performed in hopes that a late treatment would eradicate this point of possible lake re-infestation. Treatment consisted of a spot granular application of 2,4-D.



This survey also revealed a new macrophyte that had probably been overlooked from past lake surveys, *Hippuris Vulgaris* (Common Mare's Tail). This species occurred in a dense patch of Spatterdock that could only be accessed using oars.



Hippuris Vulgaris (Aquatic Mare's Tail) - Spreads by creeping rhizomes with upright stems that reach 6 to 12 inches in height and have hair-like leaves that radiate horizontally, similar to a bottle cleaner brush. This plant grows quickly in full sun to part shade and is easily propagated by divisions or stem cuttings. It has a similar appearance to that of Parrot's Feather, *Myriophyllum Aquaticum*.

Recommendations for 2011

Post treatment surveys performed during 2011 identified no Milfoil present in Lake Erie and only one small isolated patch remaining in Lake Campbell. Lake Campbell still maintains a bottom substrate virtually void of native macrophytes. Lake Erie, however, now supports a robust lake-wide community of native plants and at times supports troublesome filamentous algae infestations. Northwest Aquatic EcoSystems recommendations for the 2012 season are as follows:

1. Continued use of open communication between consultant, Skagit County and lakefront property owners in an effort to respond to changes in the lake environment quickly and provide the needed services effectively and in a timely fashion,
2. Early spring survey of both water bodies with special attention being given to those lake areas where Milfoil was treated during 2011,
3. Treatment of impacted lake areas for Milfoil control during June and August with 2,4-D at maximum label rates; if identified infestations are small as anticipated, then manual removal would be in order,
4. Potential treatment of Lake Erie sites that are prone to macro algae problems,

5. Potential treatment of Lake Erie residential shoreline areas for native plant control; treatment would be restricted to no more than 50% of the shoreline as mandated by the NPDES permit issued for this project,
6. Application to floating leaf plants (Nuphar) that are presenting current or potential problems to residential properties; this would be an application to supplement the those areas treated during 2011,
7. Yellow and Purple Loosestrife control as budgetary funds become available,
8. Yellow Flag Iris control as budgetary funds become available.

Application Records

State of Washington
Department of Agriculture
Olympia, Washington 98504

PESTICIDE APPLICATION RECORD (Version 3)

NOTE: This form must be completed same day as the application and it must be retained for 7 years. (Ref. RCW 17.21)

1. **Date of Application-Year:** 2011 **Month:** August **Date:** 8 **Time:** 8:00

2. **Name of person for whom the pesticide was applied:** Tracy Alker
Firm Name (if applicable): Skagit County Public Works
Street Address: 1800 Continental Place Suite 100 **City:** Mount Vernon, WA 98273

3. **Licensed Applicator's Name (if different from #2 above):** Douglas Dorling
Firm Name): Northwest Aquatic Eco-Systems
4426 Bush Mountain Drive SW.
Olympia, WA. 98512
360-357-3285

License # 375

4. **Name of person who applied the pesticide (if different than #3 above):**

License No(s). if applicable:

5. **Application Crop or Site:** Lake Campbell

6. **Total Area Treated (acre, sq. ft., etc.):** 8 acres

7. **Was this application made as a result of a WSDA Permit ?** Yes

8. **Pesticide information (please list all information for each pesticide in the tank mix):**

a) Product Name Pesticide Applied	b) EPA Reg. No.	c) Total Amount of Pesticide Applied in Area Treated	d) Pesticide Applied/Acre (or other measure)	e) Concentration Applied ppm
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DMA 4 IVM	62719-3	25 gallons	2-4 gals/acre	2.0
Glyphosate	81943-5	100 ozs	2ozs/galH2O	1.5%
Renovate Max G	67690-50	30 lbs	200lbs/ac	2.0 ppm

9. Address or exact location of application NOTE: If the application made to one acre or more of Agricultural land, the field location must also be shown on the map on page two of this form. Campbell Lake

10. Date: 8-08-2011 **11. Name of person making application:** Douglas Dorling

12. License No: 375 **13. Apparatus License. Plate No.:** E-578

14. Start: 8:00 **Stop:** 2:00

15. Acres completed: 8

16. Wind Direction: SW **Wind Velocity:** 0-5

17. Temperature: 78

Location of Application (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only):

Township: T34N

Range: E OR W (please indicate) 1E

Section(s): 13

County: Skagit

PLEASE NOTE:

The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Not required

State of Washington
Department of Agriculture
Olympia, Washington 98504

PESTICIDE APPLICATION RECORD (Version 3)

NOTE: This form must be completed same day as the application and it must be retained for 7 years. (Ref. RCW 17.21)

2. **Date of Application-Year:** 2011 **Month:** August **Date:** 8 **Time:** 2:30

2. **Name of person for whom the pesticide was applied:** Tracy Alker
Firm Name (if applicable): Skagit County Public Works
Street Address: 1800 Continental Place Suite 100 **City:** Mount Vernon, WA 98273

3. **Licensed Applicator's Name (if different from #2 above):** Douglas Dorling
Firm Name): Northwest Aquatic Eco-Systems
4426 Bush Mountain Drive SW.
Olympia, WA. 98512
360-357-3285
License # 375

4. **Name of person who applied the pesticide (if different than #3 above):**

License No(s). if applicable:

5. **Application Crop or Site:** Lake Erie

6. **Total Area Treated (acre, sq. ft., etc.):** 1 acres

7. **Was this application made as a result of a WSDA Permit ?** Yes

8. **Pesticide information (please list all information for each pesticide in the tank mix):**

a) Product Name Pesticide Applied	b) EPA Reg. No.	c) Total Amount of Pesticide Applied in Area Treated	d) Pesticide Applied/Acre (or other measure)	e) Concentration Applied ppm
DMA 4 IVM	62719-3	5 gallons	10 gals/acre	2.0 ppm

Glyphosate 81943-5 50 ozs 2ozs/gal 1.5 ppm

9. Address or exact location of application NOTE: If the application made to one acre or more of Agricultural land, the field location must also be shown on the map on page two of this form. Lake Erie

10. Date: 8-8-2011 **11. Name of person making application:** Douglas Dorling

12. License No: 375 **13. Apparatus License. Plate No.:** E-578

14. Start: 2:30 **Stop:** 6:00

15. Acres completed : 1

16. Wind Direction: SW **Wind Velocity:** 0-5

17. Temperature: 80

Location of Application (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only):

Township: T34N

Range: E OR W (please indicate) 1E

Section(s): 11

County: Skagit

PLEASE NOTE:

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Not required

State of Washington
Department of Agriculture
Olympia, Washington 98504

PESTICIDE APPLICATION RECORD (Version 3)

NOTE: This form must be completed same day as the application and it must be retained for 7 years. (Ref. RCW 17.21)

3. **Date of Application-Year:** 2011 **Month:** August **Date:** 9 **Time:** 8:00

2. **Name of person for whom the pesticide was applied:** Tracy Alker
Firm Name (if applicable): Skagit County Public Works
Street Address: 1800 Continental Place Suite 100 **City:** Mount Vernon, WA 98273

3. **Licensed Applicator's Name (if different from #2 above):** Douglas Dorling
Firm Name): Northwest Aquatic Eco-Systems
4426 Bush Mountain Drive SW.
Olympia, WA. 98512
360-357-3285

License # 375

4. **Name of person who applied the pesticide (if different than #3 above):**

License No(s). if applicable:

5. **Application Crop or Site:** Lake Campbell

6. **Total Area Treated (acre, sq. ft., etc.):** 8 acres

7. **Was this application made as a result of a WSDA Permit ?** Yes

8. **Pesticide information (please list all information for each pesticide in the tank mix):**

a) Product Name Pesticide Applied	b) EPA Reg. No.	c) Total Amount of Pesticide Applied in Area Treated	d) Pesticide Applied/Acre (or other measure)	e) Concentration Applied ppm
DMA 4 IVM	62719-3	25 gallons	2-4 gals/acre	2.0

9. Address or exact location of application NOTE: If the application made to one acre or more of Agricultural land, the field location must also be shown on the map on page two of this form. Campbell Lake

10. Date: 8-09-2011

11. Name of person making application: Douglas Dorling

12. License No: 375

13. Apparatus License. Plate No.: E-578

14. Start: 8:00

Stop: 11:00

15. Acres completed: 8

16. Wind Direction: SW

Wind Velocity: 0-5

17. Temperature: 72

Location of Application (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only):

Township: T34N

Range: E OR W (please indicate) 1E

Section(s): 13

County: Skagit

PLEASE NOTE:

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Not required

State of Washington
Department of Agriculture
Olympia, Washington 98504

PESTICIDE APPLICATION RECORD (Version 3)

NOTE: This form must be completed same day as the application and it must be retained for 7 years. (Ref. RCW 17.21)

4. **Date of Application-Year:** 2011 **Month:** August **Date:** 9 **Time:** 12:00

2. **Name of person for whom the pesticide was applied:** Tracy Alker
Firm Name (if applicable): Skagit County Public Works
Street Address: 1800 Continental Place Suite 100 **City:** Mount Vernon, WA 98273

3. **Licensed Applicator's Name (if different from #2 above):** Douglas Dorling
Firm Name): Northwest Aquatic Eco-Systems
4426 Bush Mountain Drive SW.
Olympia, WA. 98512
360-357-3285

License # 375

4. **Name of person who applied the pesticide (if different than #3 above):**

License No(s). if applicable:

5. **Application Crop or Site:** Lake Erie

6. **Total Area Treated (acre, sq. ft., etc.):** 1 acre

7. **Was this application made as a result of a WSDA Permit ?** Yes

8. **Pesticide information (please list all information for each pesticide in the tank mix):**

a) Product Name Pesticide Applied	b) EPA Reg. No.	c) Total Amount of Pesticide Applied in Area Treated	d) Pesticide Applied/Acre (or other measure)	e) Concentration Applied ppm
DMA 4 IVM	62719-3	5 gallons	10 gals/acre	2.0 ppm

9. Address or exact location of application NOTE: If the application made to one acre or more of Agricultural land, the field location must also be shown on the map on page two of this form. Lake Erie

10. Date: 8-9-2011

11. Name of person making application: Douglas Dorling

12. License No: 375

13. Apparatus License. Plate No.: E-578

14. Start: 12:00

Stop: 3:00

15. Acres completed : 1

16. Wind Direction: SW

Wind Velocity: 0-5

17. Temperature: 78

Location of Application (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only):

Township: T34N

Range: E OR W (please indicate) 1E

Section(s): 11

County: Skagit

PLEASE NOTE:

The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Not required

State of Washington
Department of Agriculture
Olympia, Washington 98504

PESTICIDE APPLICATION RECORD (Version 3)

NOTE: This form must be completed same day as the application and it must be retained for 7 years. (Ref. RCW 17.21)

5. **Date of Application-Year:** 2011 **Month:** Sept. **Date:** 6 **Time:** 8:00

2. **Name of person for whom the pesticide was applied:** Tracy Alker
Firm Name (if applicable): Skagit County Public Works
Street Address: 1800 Continental Place Suite 100 **City:** Mount Vernon, WA 98273

3. **Licensed Applicator's Name (if different from #2 above):** Douglas Dorling
Firm Name): Northwest Aquatic Eco-Systems
4426 Bush Mountain Drive SW.
Olympia, WA. 98512
360-357-3285
License # 375

4. **Name of person who applied the pesticide (if different than #3 above):**

License No(s), if applicable:

5. **Application Crop or Site:** Lake Erie

6. **Total Area Treated (acre, sq. ft., etc.):** 12 acres

7. **Was this application made as a result of a WSDA Permit ?** Yes

8. **Pesticide information (please list all information for each pesticide in the tank mix):**

a) Product Name Pesticide Applied	b) EPA Reg. No.	c) Total Amount of Pesticide Applied in Area Treated	d) Pesticide Applied/Acre (or other measure)	e) Concentration Applied ppm
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Diquat 100-1091 24 gallons 2gal/ac

9. Address or exact location of application NOTE: If the application made to one acre or more of Agricultural land, the field location must also be shown on the map on page two of this form. Lake Erie

10. Date: 9-06-2011 **11. Name of person making application:** Douglas Dorling

12. License No: 375 **13. Apparatus License. Plate No.:** E-578

14. Start: 12:00 **Stop:** 4:00

15. Acres completed : 1

16. Wind Direction: SW **Wind Velocity:** 0-10

17. Temperature: 75

Location of Application (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only):

Township: T34N

Range: E OR W (please indicate) 1E

Section(s): 11

County: Skagit

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6. **Date of Application-Year:** 2011 **Month:** October **Date:** 4 **Time:** 8:00

2. **Name of person for whom the pesticide was applied:** Tracy Alker
Firm Name (if applicable): Skagit County Public Works
Street Address: 1800 Continental Place Suite 100 **City:** Mount Vernon, WA 98273

3. **Licensed Applicator's Name (if different from #2 above):** Douglas Dorling
Firm Name): Northwest Aquatic Eco-Systems
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360-357-3285

License # 375

4. **Name of person who applied the pesticide (if different than #3 above):**

License No(s). if applicable:

5. **Application Crop or Site:** Lake Campbell

6. **Total Area Treated (acre, sq. ft., etc.):** 1 acre

7. **Was this application made as a result of a WSDA Permit ?** Yes

8. **Pesticide information (please list all information for each pesticide in the tank mix):**

a) Product Name Pesticide Applied	b) EPA Reg. No.	c) Total Amount of Pesticide Applied in Area Treated	d) Pesticide Applied/Acre (or other measure)	e) Concentration Applied ppm
Renovate Max G	67690-50	100 lbs	100lbs/ac	2.0 ppm

9. Address or exact location of application NOTE: If the application made to one acre or more of Agricultural land, the field location must also be shown on the map on page two of this form. Campbell Lake

10. Date: 10-04-2011

11. Name of person making application: Douglas Dorling

12. License No: 375

13. Apparatus License. Plate No.: E-578

14. Start: 8:00

Stop: 12:00

15. Acres completed: 1

16. Wind Direction: SW

Wind Velocity: 0-10

17. Temperature: 68

Location of Application (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only):

Township: T34N

Range: E OR W (please indicate) 1E

Section(s): 13

County: Skagit

PLEASE NOTE:

The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Not required