

Susan Graham
Lakes Management Coordinator
DNR Fitchburg Service Center
3911 Fish Hatchery Road
Madison, WI 53711

September 21, 2017

Hi Susan,

Thank you for your recent email requesting more information for the final report and request for reimbursement for our Grant to control hybrid cattails at Pleasant Valley Conservancy State Natural Area: Project Number AIRR21317.

We have finished the work for this project, which has included two seasons of control by cutting and chemical treatment of the hybrid cattail that invaded areas of our marsh at Pleasant Valley Conservancy. Our contractor, Integrated Restorations, and our own staff have worked on this project. The area involved included one large circular area and three other small areas which were discovered during our extensive surveys of the entire wetland. I am including copies of the APM permits (both mechanical and chemical) which were issued for both 2016 and 2017. Our own marsh comprises less than 30 acres, but is part of a large wetland covering approximately 140 acres, owned by 5 families. The cattails were noticed about 3 years ago, and grew extremely rapidly, doubling in diameter in a season. The largest clone measured approximately 100 ft in diameter when we started our control. At its rate of growth, we estimated that if not properly treated, it could have overwhelmed most of the entire wetland eventually. During our work, we made surveys of the wetland, and found 3 other small clones and scattered stalks here and there, which were also cut and treated.

Also included with this report are copies of the herbicide treatment records, which were completed and submitted by Craig Annen, of Integrated Restorations, our contractor. The herbicide used was Polaris, (imazapyr, IPA salt), applied to the cut stems of the hybrid cattails. The treatment has been effective in killing the cattail populations; results were good after the first treatment in August 2016, and the remaining survivors/re-sprouts were treated in July 2017 with good success.

In addition to the cutting and chemical suppression of the hybrid cattails, we also carried out controlled burns in the cattail areas. In the fall of 2016 we burned the immediate area of the large hybrid clone, to reduce the organic load of debris and allow new vegetation to recolonize more successfully. In the spring of 2017, we burned a much larger area of the wetland, to enable desirable species to grow better and also to make it easier to observe new growth areas of hybrid cattail without the obscuring dead materials from previous years' growth. The work on the burns is included in the time sheets and invoices included with this report.

We also overseeded the treated areas with appropriate wetland species, which we harvested from other areas of the marsh.

The worksheets included with the final report show the work done, primarily in three ways. We have a crew that works with us at Pleasant Valley generally two days a week. Amanda Budyak is our land manager, and directs the work in consultation with my husband Tom and me. Our other regular employee is Susan Slapnick. As needed, we hire other people to come and help with larger jobs. All employees submit time sheets each month, and their hours for the cattail project are shown there, and marked with an orange highlighter.

We can also hire a contractor, Integrated Restorations to come for the larger jobs—in this case, for the major work of cutting and treating the cattail clones. Their invoices and the cancelled checks are shown.

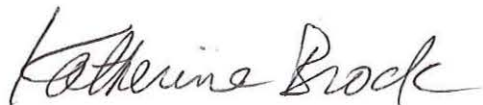
The materials and vehicles which we own supplied much of the Matching funds part of the grant. We have two utility vehicles which were extremely useful in getting the workers and their gear to the work sites. And for the burns we own the necessary equipment which was used, as well as a pumper unit for one of the utility vehicles.

I am including photos of the work in progress, both when cutting and treating the hybrid cattails in August 2016, and during the wetland burn in March 2017.

The total amount we spent is about \$1200 more than the total project cost, but we feel that we have the cattails under control, for now at least. We will continue to monitor for any recurring or new locations of growth. The small areas are relatively simple and quick to control, in contrast to the large clones that grew so rapidly.

We appreciate the funding from the AIS to help us get rid of this horrible invasive. Thanks very much.

If you have questions about any of this report, please let me know.



Katherine Brock
Savanna Oak Foundation
1227 Dartmouth Road
Madison, WI 53705
kmbrock@charter.net
608-238-5050



August 2016. A worker from Integrated Restorations using a Stihl weed cutter to cut hybrid cattail. The cut stems were then treated with imazapyr herbicide.



November 2016. Burned invasive cattail clones (with the help of Integrated Restorations). Next step, seeding the areas with an array of native wetland seeds.



March 2017. Burn of the wetland to remove previous years' plant debris.

FILE

Notice: Completion of this form is a condition of the permit and provides records required by WDNR (NR 107) and DATCP (ATCP 29.21 and 29.22). The Department may not issue you future permits unless you complete and submit this form. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

Submit this form: (1) immediately if any unusual circumstances occurred during treatment
(2) as soon after treatment as possible, no later than 30 days
(3) by October 1 if no treatment occurred

Completion of this form along with the permit satisfies the requirements of WDNR (NR 107) and DATCP (ATCP 29.21 and 29.22).

General Permit Information

| | | | | |
|--|--|-------------|-------------------|--|
| Permit Number SC-2016-13-61 | Waterbody Name (including ponds, e.g., Smith Pond) East Branch of Blue Mounds Creek | COPY | | |
| County Dane | Permit Holder Name (Customer Name) Savanna Oak Foundation, Inc. (Thomas D. Brock) | | | |
| Permit Holder Address 1227 Dartmouth Road | City Madison | State WI | ZIP Code 53705 | |

Treatment Information

| | | | | |
|---|--------------------------------|---|----------------------------------|---|
| Treatment Date (mm/dd/yyyy) 8/1/2016 | Starting Time (24 hr) 08:30 | Ending Time (24 hr) 14:30 | Water Temp (°C) 5.5 degrees C | Ambient Air Temp (°C) 27.7 degrees C |
| Wind Speed (mph) 7 mph | Wind Direction West | Expected Duration of Chemical Residuals 25 - 142 d in soil; 1 - 2 d in water | | |

Adverse Conditions Noted (i.e., dead fish, spawning fish, algae bloom, etc.)
No adverse conditions were observed.

If adverse conditions noted, indicate corrective actions taken
N/A

Onsite Supervision Present? Yes No
If Yes, Supervisor Name
N/A

Mixing and Loading Site Location (if other than business site or from prepackaged retail container or applied with equipment with a total capacity of not more than 5 gallons liquid or 50 pounds dry)
Integrated Restorations, LLC business site: 228 South Park Street, Belleville, WI 53508

Herbicide Treatment and Water Use Restrictions Signs Posted In Accordance With NR 107? Yes No

Applicator shall provide each customer with a free copy of each pesticide label used (if requested)

Applicator Information

| | | |
|---|------------------------------------|-------------------|
| Individual or Business Name Integrated Restorations, LLC | Telephone Number (608) 424-6997 | |
| Street Address 228 South Park Street | | |
| City Belleville | State WI | ZIP Code 53508 |

| Individuals Making Pesticide Application: | Last Name | First | Certification # |
|---|-----------|-------------|-----------------|
| | Annen | Craig | 062814 |
| | Last Name | First | Certification # |
| | Knief | Christopher | 067621 |
| | Last Name | First | Certification # |

| | | | |
|---|-----------|-------------|--------------------------------------|
| Name of Person Completing Form Craig Annen | Signature | Date Signed | DNR Use Only Date Received |
|---|-----------|-------------|--------------------------------------|

Aquatic Plant Management Herbicide Treatment Record

| Treatment Site and Chemical Information (attach additional sheets if necessary) | | | | | | Herbicide Name: Polaris EPA Reg No.: 228-534 | | Herbicide Name: | | Herbicide Name: | |
|---|--------------------|----------------------|----------------------------|----------|-----------|---|-------------------------------|-------------------|-------------------------------|-------------------|-------------------------------|
| Site No, Property Name, Address / Fire No | Treated Acreage | Permitted Acreage | Sensitive Area? | Latitude | Longitude | Amount Applied | Concentration (mg/l = ppm) | Amount Applied | Concentration (mg/l = ppm) | Amount Applied | Concentration (mg/l = ppm) |
| State Natural Area #551 | 0.17 Ac | 0.36 Ac | <input type="checkbox"/> Y | N43.105 | W89.807 | 1.5 gallons | 3.85% (v/v) | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| Totals | | | | | | 1.5 gallons | | | | | |

| Aquatics at Treatment Site: TS = Target Species SP = Species Present | | | |
|---|----------|--|---------|
| TS SP | Site(s) | TS SP | Site(s) |
| <input checked="" type="checkbox"/> <input type="checkbox"/> Cattail | SNA #551 | <input type="checkbox"/> <input type="checkbox"/> Filamentous Algae | |
| <input type="checkbox"/> <input type="checkbox"/> Chara | | <input type="checkbox"/> <input type="checkbox"/> Flat-Stem Pondweed | |
| <input type="checkbox"/> <input type="checkbox"/> Coontail | | <input type="checkbox"/> <input type="checkbox"/> Floating-Leaf Pondweed | |
| <input type="checkbox"/> <input type="checkbox"/> Curly-Leaf Pondweed | | <input type="checkbox"/> <input type="checkbox"/> Illinois Pondweed | |
| <input type="checkbox"/> <input type="checkbox"/> Duckweed | | <input type="checkbox"/> <input type="checkbox"/> Large-Leaf Pondweed | |
| <input type="checkbox"/> <input type="checkbox"/> Elodea | | <input type="checkbox"/> <input type="checkbox"/> Northern Milfoil | |
| <input type="checkbox"/> <input type="checkbox"/> Eurasian/hybrid Milfoil | | <input type="checkbox"/> <input type="checkbox"/> Phragmites | |
| | | <input type="checkbox"/> <input type="checkbox"/> Planktonic Algae | |
| | | <input type="checkbox"/> <input type="checkbox"/> Purple Loosestrife | |
| | | <input type="checkbox"/> <input type="checkbox"/> Richardson Pondweed | |
| | | <input type="checkbox"/> <input type="checkbox"/> Robbins Pondweed | |
| | | <input type="checkbox"/> <input type="checkbox"/> Sago Pondweed | |
| | | <input type="checkbox"/> <input type="checkbox"/> Watershield | |
| | | <input type="checkbox"/> <input type="checkbox"/> White Water Lily | |
| | | <input type="checkbox"/> <input type="checkbox"/> White-Stem Pondweed | |
| | | <input type="checkbox"/> <input type="checkbox"/> Wild Celery | |

Notice: Completion of this form is a condition of the permit and provides records required by WDNR (NR 107) and DATCP (ATCP 29.21 and 29.22). The Department may not issue you future permits unless you complete and submit this form. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

Submit this form: (1) immediately if any unusual circumstances occurred during treatment
 (2) as soon after treatment as possible, no later than 30 days
 (3) by October 1 if no treatment occurred

COPY

Completion of this form along with the permit satisfies the requirements of WDNR (NR 107) and DATCP (ATCP 29.21 and 29.22).

| General Permit Information | | | |
|----------------------------|--|-------|----------|
| Permit Number | Waterbody Name (including ponds, e.g., Smith Pond) | | |
| SC-2016-13-61 | East Branch of Blue Mounds Creek | | |
| County | Permit Holder Name (Customer Name) | | |
| Dane | Savanna Oak Foundation, Inc. (Thomas D. Brock) | | |
| Permit Holder Address | City | State | ZIP Code |
| 1227 Dartmouth Road | Madison | WI | 53705 |

| Treatment Information | | | | |
|-----------------------------|-----------------------|---|-----------------|-----------------------|
| Treatment Date (mm/dd/yyyy) | Starting Time (24 hr) | Ending Time (24 hr) | Water Temp (°C) | Ambient Air Temp (°C) |
| 8/3/2016 | 08:30 | 15:00 | 5.9 degrees C | 28.5 degrees C |
| Wind Speed (mph) | Wind Direction | Expected Duration of Chemical Residuals | | |
| < 5 mph | SW | 25 - 142 d in soil; 1 - 2 d in water | | |

Adverse Conditions Noted (i.e., dead fish, spawning fish, algae bloom, etc.)
 No adverse conditions were observed.

If adverse conditions noted, indicate corrective actions taken
 N/A

COPY

| | |
|---|-------------------------|
| Onsite Supervision Present? <input type="radio"/> Yes <input checked="" type="radio"/> No | If Yes, Supervisor Name |
| | N/A |

Mixing and Loading Site Location (if other than business site or from prepackaged retail container or applied with equipment with a total capacity of not more than 5 gallons liquid or 50 pounds dry)
 Integrated Restorations, LLC business site: 228 South Park Street, Belleville, WI 53508

Herbicide Treatment and Water Use Restrictions Signs Posted In Accordance With NR 107? Yes No

Applicator shall provide each customer with a free copy of each pesticide label used (if requested)

| Applicator Information | | | |
|---|--------------------|------------------|-----------------|
| Individual or Business Name | | Telephone Number | |
| Integrated Restorations, LLC | | (608) 424-6997 | |
| Street Address | | | |
| 228 South Park Street | | | |
| City | State | ZIP Code | |
| Belleville | WI | 53508 | |
| Individuals Making Pesticide Application: | Last Name | First | Certification # |
| | Annen | Craig | 062814 |
| | Last Name | First | Certification # |
| | Knief | Christopher | 067621 |
| | Last Name | First | Certification # |
| Name of Person Completing Form | Signature | Date Signed | DNR Use Only |
| Craig Annen | <i>Craig Annen</i> | 8-3-2016 | Date Received |

Aquatic Plant Management Herbicide Treatment Record

| Treatment Site and Chemical Information (attach additional sheets if necessary) | | | | | | Herbicide Name: Polaris | Herbicide Name: | Herbicide Name: | | | |
|---|-----------------|-------------------|----------------------------|----------|-----------|-------------------------|----------------------------|-----------------|----------------------------|----------------|----------------------------|
| Site No, Property Name, Address / Fire No | Treated Acreage | Permitted Acreage | Sensitive Area? | Latitude | Longitude | EPA Reg No.: 228-534 | EPA Reg No.: | EPA Reg No.: | | | |
| | | | | | | Amount Applied | Concentration (mg/l = ppm) | Amount Applied | Concentration (mg/l = ppm) | Amount Applied | Concentration (mg/l = ppm) |
| State Natural Area #551 | 0.19 Ac | 0.36 Ac | <input type="checkbox"/> Y | N43.105 | W89.807 | 1.25 gallons | 3.85% (v/v) | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| | | | <input type="checkbox"/> Y | | | | | | | | |
| Totals | | | | | | 1.25 gallons | | | | | |

Aquatics at Treatment Site: TS = Target Species SP = Species Present

| TS SP | Site(s) | TS SP | Site(s) | TS SP | Site(s) | TS SP | Other Aquatics | Site(s) |
|---|----------|--|---------|---|---------|---|----------------|---------|
| <input checked="" type="checkbox"/> <input type="checkbox"/> Cattail | SNA #551 | <input type="checkbox"/> <input type="checkbox"/> Filamentous Algae | | <input type="checkbox"/> <input type="checkbox"/> Planktonic Algae | | <input type="checkbox"/> <input type="checkbox"/> White-Stem Pondweed | | |
| <input type="checkbox"/> <input type="checkbox"/> Chara | | <input type="checkbox"/> <input type="checkbox"/> Flat-Stem Pondweed | | <input type="checkbox"/> <input type="checkbox"/> Purple Loosestrife | | <input type="checkbox"/> <input type="checkbox"/> Wild Celery | | |
| <input type="checkbox"/> <input type="checkbox"/> Coontail | | <input type="checkbox"/> <input type="checkbox"/> Floating-Leaf Pondweed | | <input type="checkbox"/> <input type="checkbox"/> Richardson Pondweed | | <input type="checkbox"/> <input type="checkbox"/> | | |
| <input type="checkbox"/> <input type="checkbox"/> Curly-Leaf Pondweed | | <input type="checkbox"/> <input type="checkbox"/> Illinois Pondweed | | <input type="checkbox"/> <input type="checkbox"/> Robbins Pondweed | | <input type="checkbox"/> <input type="checkbox"/> | | |
| <input type="checkbox"/> <input type="checkbox"/> Duckweed | | <input type="checkbox"/> <input type="checkbox"/> Large-Leaf Pondweed | | <input type="checkbox"/> <input type="checkbox"/> Sago Pondweed | | <input type="checkbox"/> <input type="checkbox"/> | | |
| <input type="checkbox"/> <input type="checkbox"/> Elodea | | <input type="checkbox"/> <input type="checkbox"/> Northern Milfoil | | <input type="checkbox"/> <input type="checkbox"/> Watershield | | <input type="checkbox"/> <input type="checkbox"/> | | |
| <input type="checkbox"/> <input type="checkbox"/> Eurasian/hybrid Milfoil | | <input type="checkbox"/> <input type="checkbox"/> Phragmites | | <input type="checkbox"/> <input type="checkbox"/> White Water Lily | | <input type="checkbox"/> <input type="checkbox"/> | | |

FILE

**Aquatic Plant Management Herbicide
 Treatment Record**

Form 3200-111 (R 11/16)

Notice: Completion of this form is a condition of the permit and provides records required by WDNR (NR 107) and DATCP (ATCP 29.21 and 29.22). The Department may not issue you future permits unless you complete and submit this form. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

- Submit this form: (1) immediately if any unusual circumstances occurred during treatment
 (2) as soon after treatment as possible, no later than 30 days
 (3) by October 1 if no treatment occurred

Completion of this form along with the permit satisfies the requirements of WDNR (NR 107) and DATCP (ATCP 29.21 and 29.22).

| General Permit Information | | | |
|--|--|-------------|-------------------|
| Permit Number SC-2017-13-539 | Waterbody Name (including ponds, e.g., Smith Pond) East Branch of Blue Mounds Creek | | |
| County Dane | Permit Holder Name (Customer Name) Savanna Oak Foundation, Inc. | | |
| Permit Holder Address 1227 Dartmouth Road | City Madison | State WI | ZIP Code 53705 |

| Treatment Information | | | |
|---|--------------------------------|---|---|
| Treatment Date (mm/dd/yyyy) 07/14/2017 | Starting Time (24 hr) 09:00 | Ending Time (24 hr) 12:00 | Water Temp <input checked="" type="radio"/> C <input type="radio"/> F 21 |
| Wind Speed (mph) < 5 mph | Wind Direction West | Expected Duration of Chemical Residuals 25 - 142 d in soil; 1 - 2 d in water | |
| Ambient Air Temp <input checked="" type="radio"/> C <input type="radio"/> F 25.5 | | | |

Adverse Conditions Noted (i.e., dead fish, spawning fish, algae bloom, etc.)
 No adverse conditions were observed.

If adverse conditions noted, indicate corrective actions taken

Comments

Onsite Supervision Present? Yes No
 If Yes, Supervisor Name

Mixing and Loading Site Location (if other than business site or from prepackaged retail container or applied with equipment with a total capacity of not more than 5 gallons liquid or 50 pounds dry)
 Integrated Restorations, LLC business site: 228 South Park Street, Belleville, WI 53508

Herbicide Treatment and Water Use Restrictions Signs Posted In Accordance With NR 107?

Applicator shall provide each customer with a free copy of each pesticide label used (if requested)

| Applicator Information | | | |
|---|--------------------|--|-------------------------------|
| Individual or Business Name Integrated Restorations, LLC | | Telephone (xxx) 123-1234 (608) 424-6997 | |
| Street Address 228 South Park Street | City Belleville | State WI | ZIP Code 53508 |
| Individuals Making Pesticide Application: | Last Name Annen | First Craig | Certification # 062814 |
| | Last Name Knief | First Christopher | Certification # 067621 |
| | Last Name | First | Certification # |
| | Last Name | First | Certification # |
| Name of Person Completing Form Craig Annen | Signature | Date Signed 08/13/2017 | DNR Use Only Date Received |

Aquatic Plant Management Herbicide Treatment Record

Form 3200-111 (R 11/16)

Page 2 of 2

| Treatment Site and Chemical Information - 1 | | | | | | | |
|---|---------------------------------|---------------------------------|-----------------|-------------------|---|----------|-----------|
| Site No. | Property Name | Address / Fire No. | Treated Acreage | Permitted Acreage | Sensitive Area? | Latitude | Longitude |
| 1 | Pleasant Valley Conservancy SNA | Pleasant Valley Road, Blk Earth | 0.01 | 0.02 | <input type="checkbox"/> Y | N43.105 | W,089.807 |
| Herbicide Name | | EPA Reg. No. | Amount Applied | Units | Application Concentration Rate (mg/l = ppm) | | |
| Polaris (imazapyr IPA salt) | | 228-534 | 0.5 | gallons | 3.85% (v/v) | | |
| Total Amount Applied | | | 0.5 | | | | |

| Treatment Site and Chemical Information - 2 | | | | | | | |
|---|---------------------------------|-------------------------------|-----------------|-------------------|---|----------|-----------|
| Site No. | Property Name | Address / Fire No. | Treated Acreage | Permitted Acreage | Sensitive Area? | Latitude | Longitude |
| 2 | Pleasant Valley Conservancy SNA | Pleasant Valley Rd. Blk Earth | 0.01 | 0.02 | <input type="checkbox"/> Y | N43.105 | W,089.913 |
| Herbicide Name | | EPA Reg. No. | Amount Applied | Units | Application Concentration Rate (mg/l = ppm) | | |
| Polaris (imazapyr IPA salt) | | 228-534 | 0.75 | gallons | 3.85% (v/v) | | |
| Total Amount Applied | | | 0.75 | | | | |

| Treatment Site and Chemical Information - 3 | | | | | | | |
|---|---------------|--------------------|-----------------|-------------------|---|----------|-----------|
| Site No. | Property Name | Address / Fire No. | Treated Acreage | Permitted Acreage | Sensitive Area? | Latitude | Longitude |
| | | | | | <input type="checkbox"/> Y | | |
| Herbicide Name | | EPA Reg. No. | Amount Applied | Units | Application Concentration Rate (mg/l = ppm) | | |
| | | | | | | | |
| Total Amount Applied | | | | | | | |

Add a Treatment Site >>

| If treating >5% of the lake surface area, what is the whole lake concentration (mg/l = ppm) per herbicide applied? | | | | | |
|--|----------------|--------------|--------------|-------|--|
| Herbicide Name | Herbicide Name | EPA Reg. No. | Total Amount | Units | Whole Lake Concentration Rate (mg/l = ppm) |
| | | | | | |
| Total Amount Applied For All Sites | | | 1.25 | | |

| Aquatics at Treatment Site | | TS = Target Species | | SP = Species Present | |
|----------------------------------|-------------------------|---------------------|-----------------------|------------------------|---------|
| TS | SP | Site(s) | TS | SP | Site(s) |
| <input checked="" type="radio"/> | Cattail | | <input type="radio"/> | Flat-Stem Pondweed | |
| <input type="radio"/> | Chara | | <input type="radio"/> | Floating-Leaf Pondweed | |
| <input type="radio"/> | Coontail | | <input type="radio"/> | Illinois Pondweed | |
| <input type="radio"/> | Curly-Leaf Pondweed | | <input type="radio"/> | Large-Leaf Pondweed | |
| <input type="radio"/> | Duckweed | | <input type="radio"/> | Northern Milfoil | |
| <input type="radio"/> | Elodea | | <input type="radio"/> | Phragmites | |
| <input type="radio"/> | Eurasian/hybrid Milfoil | | <input type="radio"/> | Planktonic Algae | |
| <input type="radio"/> | Filamentous Algae | | <input type="radio"/> | Purple Loosestrife | |
| <input type="radio"/> | [Enter species name] | | <input type="radio"/> | [Enter species name] | |
| | | | <input type="radio"/> | Richardson Pondweed | |
| | | | <input type="radio"/> | Robbins Pondweed | |
| | | | <input type="radio"/> | Sago Pondweed | |
| | | | <input type="radio"/> | Starry Stonewort | |
| | | | <input type="radio"/> | Watershield | |
| | | | <input type="radio"/> | White Water Lily | |
| | | | <input type="radio"/> | White-Stem Pondweed | |
| | | | <input type="radio"/> | Wild Celery | |
| | | | <input type="radio"/> | [Enter species name] | |

Mechanical / Manual Aquatic Plant Control Application
 Form 3200-113 (R-3/04) Page 1 of 4

Notice: Information requested on this form is required to permit mechanical and/or manual aquatic plant control application, per s. 23.24, Wis. Stats. The Department will not issue a permit unless you complete and submit this application. Personally identifiable information collected will be used for program administration and will be available to requesters under Wisconsin's Open Records law [ss. 19.31 - 19.39, Wis. Stats.].

| FOR DNR USE ONLY | |
|----------------------------|-------------------|
| Date Received 2/16/2016 | ID Number 15 |
| Fee Received 30.00 | County Code 13 |
| Exp. Date 12/31/16 | WBIC 125/00 |

Section I: Applicant Data

| | | | | | |
|--|---------------------------------------|-------------------|--|---------------------------------------|--|
| Permit Applicant Name Thomas D. Brock (Pleasant Valley Conservancy SNA) | | | Applicant is <input checked="" type="checkbox"/> Private Individual <input type="checkbox"/> Contractor <input type="checkbox"/> Lake Organization (Specify) _____ | | |
| Applicant Mailing Address 1227 Dartmouth Road | | | Lake Property Address, City, State, ZIP (if different) 4609 Pleasant Valley Road, Black Earth, WI 53515 | | |
| City Madison | State WI | ZIP Code 53705 | | | |
| Telephone Number (608) 238-5050 | E-Mail Address tdbrock@charter.net | | Telephone Number (608) 220-0590 | E-Mail Address tdbrock@charter.net | |

Individuals and organizations (e.g., Lake District, Lake Association, Property Owners Association, County Department of Recreation), sponsoring removal. Attach additional sheets if necessary.

| Name | Address | Phone | E-mail Address |
|---------------------------------|-----------------------------|--------------|---------------------|
| A. Savanna Oak Foundation, Inc. | 1227 Dartmouth Road Madison | 608-238-5050 | tdbrock@charter.net |
| B. | | | |
| C. | | | |
| D. | | | |

| | | |
|---|---|--|
| Has a Lake Management plan been provided to the DNR? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If Yes, date approved of most current copy N/A | Location of Applicant file copy N/A |
|---|---|--|

Does the proposed plant removal agree with the approved plan? Yes No
 If NO, explain. Attach additional sheets if necessary.

N/A

Is this area within or adjacent to a Sensitive Area designated by the Wisconsin Department of Natural Resources?
 Yes No Don't Know If yes, list sites _____

Section II: Location of Aquatic Plant Removal and Disposal

| | | | | | |
|---|-------------------------------------|----------------|------------|-------------|--------------|
| Waterbody of proposed plant removal E. Branch of Blue Mounds Crk | Lake Surface Area (acres) 1 acre | County Dane | Town 7N | Range 6E | Section 5 |
|---|-------------------------------------|----------------|------------|-------------|--------------|

| | |
|--|------------------------------------|
| Name of Firm (if sub-contracted) Integrated Restorations, LLC | Telephone Number (608) 424-6997 |
|--|------------------------------------|

| | |
|---|---|
| Street Address 228 South Park Street | City, State and ZIP Belleville, WI 53508 |
|---|---|

| | | | | | | |
|---|-----|-----|--------------|-----------------|-------------------|----------------|
| Name of 1st Plant Disposal Site (if applicable) Mowed biomass will be piled in uplands and burned. | 1/4 | 1/4 | Section 5 | Township 7 N | Range E / W 6E | County Dane |
|---|-----|-----|--------------|-----------------|-------------------|----------------|

| | | | | | | |
|--|-----|-----|---------|---------------|-------------|--------|
| Name of 2nd Plant Disposal Site (if applicable) N/A | 1/4 | 1/4 | Section | Township N | Range E / W | County |
|--|-----|-----|---------|---------------|-------------|--------|

Area(s) Proposed for Plant Removal (Note details in permit cover letter for final permitted sizes). Please see attached sample drawing for guidance

| | | | | | | | | | |
|---------------------------------|-----|-------------------------------|----|--------------------|------|-------------------|------------|---|-----|
| 1. Length from shore | 125 | ft. x Shoreline or area width | 60 | ft. / 43,560 ft. = | 0.17 | Estimated Acreage | Avg. Depth | 1 | ft. |
| 2. Length from shore | 125 | ft. x Shoreline or area width | 65 | ft. / 43,560 ft. = | 0.19 | Estimated Acreage | Avg. Depth | 1 | ft. |
| 3. Length from shore | | ft. x Shoreline or area width | | ft. / 43,560 ft. = | | Estimated Acreage | Avg. Depth | | ft. |
| 4. Offshore Control Site Length | | ft. x Shoreline or area width | | ft. / 43,560 ft. = | | Estimated Acreage | Avg. Depth | | ft. |
| 5. Offshore Control Site Length | | ft. x Shoreline or area width | | ft. / 43,560 ft. = | | Estimated Acreage | Avg. Depth | | ft. |
| TOTAL ESTIMATED ACREAGE | | 0.36 acres | | | | | | | |

Mechanical / Manual Aquatic Plant Control Application

Form 3200-113 (R 3/04)

Page 2 of 4

Section II: Location of Aquatic Plant Removal (cont.)

What type of aquatic plants below the Ordinary High Water Mark are proposed to be removed? (check all that apply)

- Emergent (above water level) Submergent (below water level) Floating Leaf (at the surface i.e. lily pads)

Section III: Map & Property Ownership

Attach a copy of a lake map that includes the property(s) to be harvested. If no printed map is available, provide a sketch of the site at the bottom of this page. On the map, identify the following required information.

- Area and dimensions of each proposed plant removal area.
- Location of all riparian neighbors (property owners riparian to and adjacent to the proposed removal area) including project participants and non-participants. Consecutively number each riparian neighbor (both project participants and non-participants). In the space below:
- Name all riparian owners, including project participants & non-participants. The number should correspond with the numbered properties on the map. Attach additional sheets if necessary.
- Check Yes box to indicate project participants and No box for non-participants.

| No. | Name of Riparian Neighbor | Project Participant | Control dimensions (calculated acreage) |
|-----|---------------------------|--|---|
| 1. | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No | _____ |
| 2. | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No | _____ |
| 3. | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No | _____ |
| 4. | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No | _____ |
| 5. | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No | _____ |
| 6. | _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No | _____ |

Check here if separate sheets are attached identifying additional neighbor riparian owners. Indicate project participants and/or non-participants.

Check here if printed map attached. If no printed map, use this space to sketch the site and provide required information.

Map

Section IV: Methods

What mechanical or manual methods to remove plants are proposed? (check all that apply)

- Mechanical harvesting Raking Other _____
 Hand Pulling Cutting

Please explain why you selected the proposed method(s).

Target species (Typha x glauca Godr.) will be mowed with a STIHL FS-250 clearing saw to expose fresh cut surface for directed herbicide application (a separate NR107 APM permit is being applied for).

Note: Other control methods (i.e. bottom barriers, weed rollers, herbicides) also need DNR permits. Contact this office for more details.

Section V: Fees

Fees are not refundable and are calculated as follows:

Check box for type of project:

1. single riparian area, one property owner, less than one acre \$30.00
 2. multiple riparian areas, offshore control areas, multiple riparian properties, one acre or greater \$30.00/acre (round up to the nearest whole acre) if proposed removal is greater than 10 acres fee caps at \$300.00

1.0 _____ acres x \$30.00 per acre = \$ 30.00

Total non-refundable fee enclosed (max \$300.00) \$ 30.00

Section VI: Reasons for Aquatic Plant Removal

Purpose of Aquatic Plant Removal

- Maintain navigational channel for common use
 Maintain private access for boating
 Maintain private access for fishing
 Improve swimming
 Other Invasive species suppression

Nuisance Caused By

- Emergent water plants
 Submergent water plants
 Floating water plants
 Other _____

Name of plants, if known

Hybrid cattail (Typha x glauca Godr.).

Section VII: Alternatives Considered

| | A. Previously Done? | | B. Presently Proposed? | |
|-----------------------------------|---|--|---|--|
| 1. Chemical | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2. Sediment screens | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 3. Dredging | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 4. Drawdown | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 5. Nutrient controls in watershed | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 6. Nutrient controls on property | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| 7. Other | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

NOTE: Consider feasibility of alternatives for each control site. This information not only helps the department make a decision on this application but also helps you evaluate your investment in aquatic plant management.

Describe the level of success for alternative methods previously used:

1. Chemical Cutting will be used in conjunction with herbicide application; very effective suppression.
2. Sediment screens N/A to proposed treatment site and methods.
3. Dredging Would negatively affect remnant sedge meadow community present on site.
4. Drawdown No water level control devices exist at this site.
5. Nutrient controls in watershed N/A in this watershed.
6. Nutrient controls on property Site is a natural area; on-site nutrient control provided by established vegetation.
7. Other N/A

Section VIII: Applicants Responsibilities

1. The applicant has prepared a detailed map, which shows the length, width and average depth of each area proposed for the control of rooted vegetation.
2. The applicant understands that the Department of Natural Resources may require supervision of any aquatic plant management project involving removal. Supervision may include inspection of the proposed treatment area and/or equipment, before, during, or after removal. The applicant is required to notify the regional office 4 working days in advance of each anticipated date of plant removal with the date, time, location and size of plant removal unless the Department waives this requirement. The advance notification may be specified in your permit.
3. The applicant agrees to inform all operators of harvesting equipment of the conditions and terms of this permit and to insure that all operators understand and abide by those terms and conditions.
4. The applicant agrees to comply with all terms and conditions of this permit, if used, as well as applicable Wisconsin Administrative Rules. The required fee is attached.

I hereby certify that the above information is true and correct and that copies of the application have been provided to the appropriate parties name in Section II and that the conditions of the permit will be adhered to. All portions of this permit, map and accompanying cover letter must be in possession of the applicant or their agent at time of plant removal. During plant removal activities, all provisions of applicable Wisconsin Administrative Rules must be complied with, as well as the specific conditions contained in the permit cover letter.

[Signature]
Applicant's Signature

2-4-2016
Date Signed

DNR Use Only

Review Notes:

Natural Heritage Inventory Review

See cover letter

Section IX: Permit to Carry Out Mechanical or Manual Removal of Aquatic Plants

The foregoing application is approved. Permission is hereby granted to the applicant to mechanically or manually remove aquatic plants described in the application during the season. The approval of an aquatic plant management permit may not represent an endorsement of the permitted activity, but represents that the applicant has complied with Wisconsin Administrative Rules.

| |
|--------------|
| Season Year |
| 20 <u>16</u> |

Application fee If received?
 Yes No

State of Wisconsin
 Department of Natural Resources For the Secretary

By *[Signature]*
 Regional Director or Designee

3/3/2016
 Date Signed

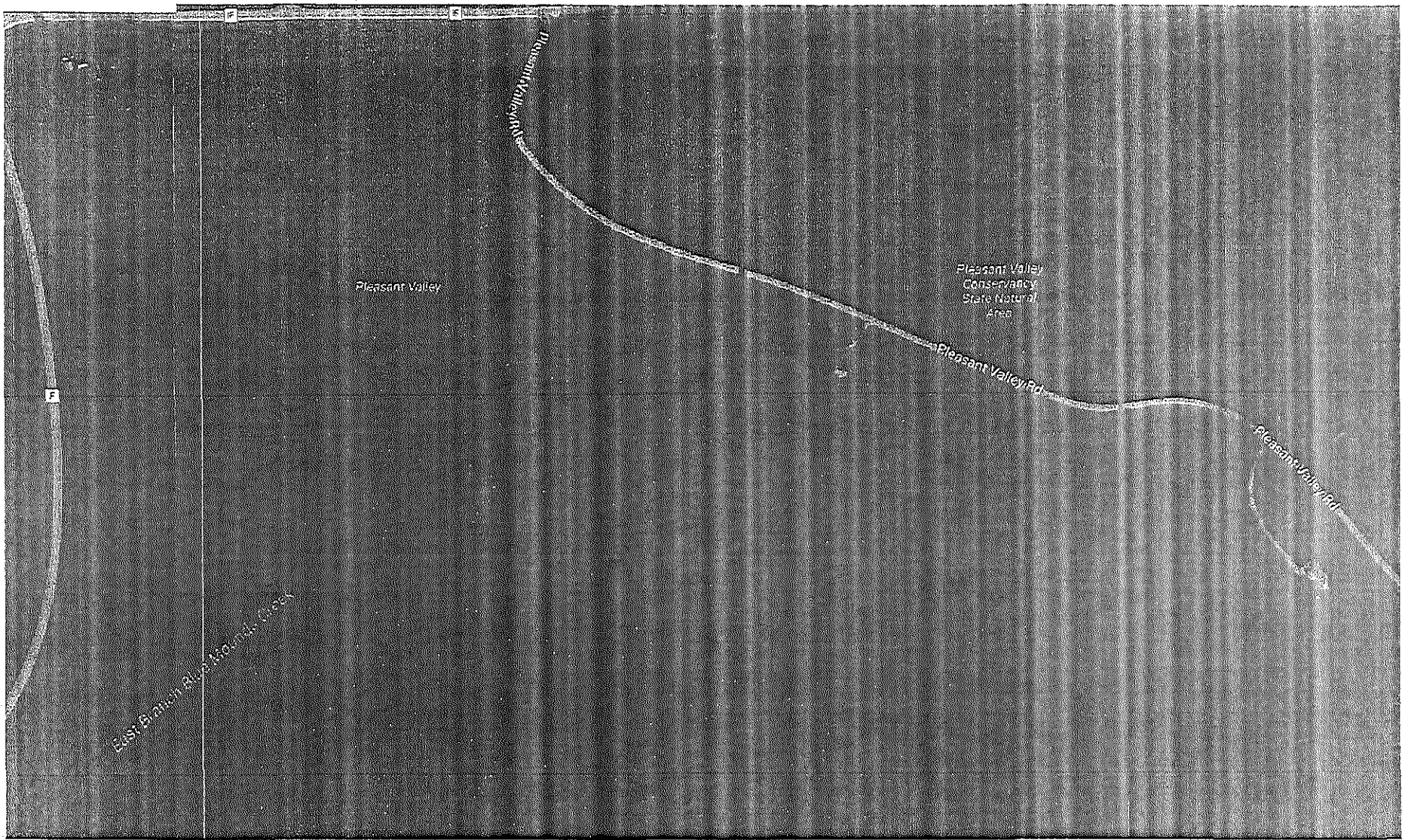
3/7/2016
 Date Mailed

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For Judicial review of a decision pursuant to ss. 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for review shall name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to s. 227.42, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. The filling of a request for a contested case hearing is not a prerequisite for judicial review and does not extend the 30-day period for filing a petition for judicial review.

This notice is provided pursuant to s. 227.48(2), Wis. Stats.



Hybrid cattail clones (delineated in red) at Pleasant Valley Conservancy State Natural Area (T7N R6E Sec. 5, Dane County, WI)

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
South Central Region Headquarters
3911 Fish Hatchery Road
Fitchburg WI 53711-5397

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-275-3266
FAX 608-275-3338
TTY Access via relay - 711



March 7, 2016

PERMIT # SC-2017-13-539

Thomas D. Brock (Savanna Oak Foundation, Inc.)
Via tdbrock@charter.net

Subject: Aquatic Plant Management Permit for Pleasant Valley Conservancy State Natural Area (No. 551)

Dear Applicant:

Enclosed is your permit for chemical control of cattails on 0.02 acres of wetland located in the Pleasant Valley Conservancy State Natural Area (No. 551), Dane County, Wisconsin. Your permit application has been reviewed and meets the minimum requirements by law and a permit is being issued. Issuance of the permit is not an endorsement or approval for the action authorized.

Permit Conditions:

Supervision of this treatment will not be required.

The permit holder shall submit the form 3200-111, "Aquatic Plant Management Herbicide Treatment Record", available online at http://dnr.wi.gov/lakes/plants/forms/3200111_fileExt.pdf for each treatment as follows:

1. Immediately, if any unusual circumstances occur during the treatment.
2. Within 30 days, if treatment occurred.
3. By October 1 of this year, if no treatment occurred.

The Department has determined that there is the potential for adverse impacts resulting from the permitted chemical treatment to the Endangered Purple Milkweed (*Asclepias purpurascens*). To avoid mortality of this species, avoid heavy disturbance to the herbaceous ground layer and soil, avoid broadcast spraying of herbicides and use care with spot spraying, and avoid known plant locations.

This permit will expire on December 1, 2017

Thank-you for complying with Chapter NR 107, Wisconsin Administrative Code concerning aquatic plant management.

Sincerely,

Susan Graham
Lake Management Coordinator, 608-275-3329

c. annen00@aol.com

State of Wisconsin DNR
 DNR Department of Natural Resources
 Water Permit Central Intake -- attn. APM
 PO Box 7185
 Madison, WI 53707-7185

**Chemical Aquatic Plant Control Application and Permit
 Wisconsin Pollutant Discharge Elimination System (WPDES)
 Pesticide Pollutant Permit Application**
 Form 3200-004 (R 02/17) Page 1 of 4

Notice: Use of this form is required by the Department for any application filed pursuant to s. 281.17(2), Wis. Stats., and Chapters NR 107, 200 and 205, Wis. Adm. Code. This permit application is required to request coverage for pollutant discharge into waters of the state. Personally identifiable information on this form may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

| DNR Use Only | |
|-----------------------------|--------------------------------------|
| ID Number SC-2017-12-529 | Permit Expiration Date 12-01-2017 |
| Waterbody # 1251100 | Fee Received \$45.00 |

Name of Applicant, Applicator, or Sponsor (Name and address of all individuals, businesses, or organizations, including communities or counties, and the sponsor, if different, who are providing the treatment. Attach additional sheets if necessary.)

Home Address

Name
Thomas D. Brock (Savanna Oak Foundation, Inc.)

Street Address
1227 Dartmouth Road

City
Madison

State
WI

ZIP Code
53705

Waterbody Address

Name
Pleasant Valley Conservancy State Natural Area (Nr. 551)

Street Address
4609 Pleasant Valley Road

City
Black Earth

State
WI

ZIP Code
53515

Phone Number (include area code)
 Primary: (608) 238-505 Secondary: (608) 220-0590

Email Address
tdbrock@charter.net

Waterbody to be Treated (waterbody where treatment area is located)
East Branch of the Blue Mounds Creek

Lake Surface Area
0 acres

Estimated Surface Area that is 10 Feet or Less in Depth
0 acres

County
Dane

Section
5

Township
07 N

Range
6

E
 W

Name of Applicator or Firm
Integrated Restorations, LLC

Latitude
43.10749

Longitude
-89.81384

Street or Route
228 South Park Street

• Is there more than one property owner? Yes No

• Is there surface water discharge? Yes No

• Does the waterbody have public access? Yes No

If all are no: considered to be a private pond

City
Belleville

State
WI

ZIP Code
53508

Adjacent Riparian Property Owner Names (attach sheets if necessary)

County
Dane

Phone Number (include area)
(608) 424-6997

- _____
- _____
- _____
- _____
- _____
- _____

Email Address
annen00@aol.com

Applicator Certification Number for Category 5 Aquatic Pesticide Application
62814; 67621 (2 applicators, Craig Annen and Chris Knief)

Business Location License Number (if applicable)
93-016680-013610

Name of Lake Property Owners' Association Representative or Lake District Representative (if none, please indicate)

Restricted Use Pesticide License Number (if applicable)
N/A

| Area(s) Proposed for Control: | | | | Estimated Acreage | Average Depth | Calculated Volume |
|-------------------------------|-----------------|---|--------------------------|-------------------|--|-------------------|
| Treatment Length | Treatment Width | | | | | |
| 1. 30 ft X | 40 ft | ÷ | 43,560 ft ² = | 0.02 ac X | 0.5 ft = | 0.01 ac-ft |
| 2. ft X | ft | ÷ | 43,560 ft ² = | ac X | ft = | ac-ft |
| 3. ft X | ft | ÷ | 43,560 ft ² = | ac X | ft = | ac-ft |
| 4. ft X | ft | ÷ | 43,560 ft ² = | ac X | ft = | ac-ft |
| 5. ft X | ft | ÷ | 43,560 ft ² = | ac X | ft = | ac-ft |
| 6. ft X | ft | ÷ | 43,560 ft ² = | ac X | ft = | ac-ft |
| 7. ft X | ft | ÷ | 43,560 ft ² = | ac X | ft = | ac-ft |
| 8. ft X | ft | ÷ | 43,560 ft ² = | ac X | ft = | ac-ft |
| 9. ft X | ft | ÷ | 43,560 ft ² = | ac X | ft = | ac-ft |
| Estimated Acreage Grand Total | | | | 0.02 ac | Calculated Volume Grand Total 0.01 ac-ft | |

If the estimated acreage is greater than 10 acres, or is greater than 10 percent of the estimated area 10 feet or less in depth in Section II, complete and attach Form 3200-004A, Large-Scale Treatment Worksheet. Private pond treatments are exempted from this requirement.

Is this area within or adjacent to a sensitive area designated by the Department of Natural Resources?
 Yes No

DNR Use: NHII Review? Yes No Describe:

Chemical Aquatic Plant Control Application and Permit WPDES Pesticide Pollutant Permit Application

Form 3200-004 (R 02/17)

Page 2 of 4

Section III - Reasons

1. s. NR 107.11(1), Wis. Adm. Code, lists the conditions under which the permit fee is limited to the \$20 minimum charge.
2. s. NR 107.11(4), Wis. Adm. Code, lists the uses that are exempt from permit requirements.
3. s. NR 107.04(2), Wis. Adm. Code, provides for a refund of acreage fees if the permit is denied or if no treatment occurs.
4. Fee calculations:

If proposed treatment is over 0.25 acre, calculate acreage fee:
(round up to nearest whole acre, to maximum of 50 acres.)

1 acres X \$25 per acre = \$ 25.00

If proposed treatment is ≤ 0.25 acre, acreage fee is \$0.

Enter Acreage Fee (from above) \$ 25.00

Basic Permit Fee (non-refundable) \$ 20.00

Total Fee Enclosed \$ 45.00

Site Map: Attach a sketch or a printed map of lake indicating area and dimensions of each individual area where plant control is desired and flow of surface water outside treatment area. Also show location of property owners riparian to and adjacent to the treatment area. Attach a separate list of owners and corresponding treatment dimensions coded to the lake map, if necessary.

Section IV - Reasons for Aquatic Plant Control

Is this permit being requested in accordance with an approved Aquatic Plant Management Plan? Yes No

Treatment Type:

Lake Pond Wetland Marina Other

Goal of Aquatic Plant Control:

1. Maintain navigational channel
2. Maintain boat landing and carry in access
3. Improve fish habitat
4. Maintain swimming area
5. Control of invasive exotics
6. Other: _____

Nuisance Caused By:

- Algae
- Emergent water plants (majority of leaves and stems growing above water surface, e.g. cattails, bulrushes)
- Floating water plants (majority of leaves floating on water surface, e.g., waterlilies, duckweed)
- Submerged water plants (leaves and stems below water surface, flowering parts may be exposed, e.g., milfoil, coontail)
- Other: _____

List Target Plants

Note: Different plants require different chemicals for effective treatment. Do not purchase chemical before identifying plants.

Typha angustifolia L. (narrow-leaved cattail) and Typha x glauca Godr. (hybrid cattail)

Section V - Chemical Control

Alternatives to Chemical Control:

Feasible?

If No, Why Not?

- | | | |
|-----------------------------------|---|---|
| 1. Mechanical harvesting | <input checked="" type="radio"/> Yes <input type="radio"/> No | |
| 2. Manual removal | <input type="radio"/> Yes <input checked="" type="radio"/> No | Ineffective; target species is a rhizomatous perennial. |
| 3. Sediment screens/covers | <input type="radio"/> Yes <input checked="" type="radio"/> No | N/A to proposed treatment site. |
| 4. Dredging | <input type="radio"/> Yes <input checked="" type="radio"/> No | Too drastic and would negatively affect site hydrology. |
| 5. Lake drawdown | <input type="radio"/> Yes <input checked="" type="radio"/> No | Proposed treatment site is a wetland. |
| 6. Nutrient controls in watershed | <input type="radio"/> Yes <input checked="" type="radio"/> No | N/A in this part of the watershed; multiple land-uses and owners. |
| 7. Other: _____ | <input type="radio"/> Yes <input type="radio"/> No | |

Note: If proposed treatment involves multiple properties, consider feasibility of EACH alternative for EACH property owner.

If you checked yes to any of the alternatives listed above, please explain your decision to use chemical controls:

Chemical control will be used in conjunction with mowing to expose cut surfaces for directed herbicide application to enhance suppression while concomitantly reducing the total volume of herbicide required for chemical suppression.

Chemical Aquatic Plant Control Application and Permit
WPDES Pesticide Pollutant Permit Application

Form 3200-004 (R 02/17)

Page 3 of 4

Full Trade Name of Proposed Chemical(s)

Polaris (Imazapyr IPA salt) EPA Reg. No. 227-534.

A water conditioning agent (ReQuest, Helena Chemical Company) will be added at 0.25% (v/v) since Polaris is formulated as an IPA salt. A sticking agent approved for aquatic use (Induce, Helena Chemical Co.) will be added at 4% (v/v) to reduce drift.

Method of Application: Directed low-volume cut-surface application with small capacity compression sprayers.

Will surface water outflow and/or overflow be controlled to prevent chemical loss? Yes No

Have the proposed chemicals been permitted in a prior year on the proposed site? All Some None

What were the results of the treatment?

Application method affected a > 95% reduction in invasive cattail stem density. Proposed treatment will consist of follow-up to eradicate hybrid and narrow-leaved cattail populations on site.

For private ponds and wetlands please ignore next question

Is treatment area greater than 5% of surface area? Yes No

If yes, calculate whole lake concentration (in ppm). Refer to DNR Lake pages dnr.wi.gov/Lakes to answer the following:

Does the lake stratify? Yes No

If yes, calculate whole lake concentration using volume above thermocline.
If no, calculate whole lake concentration using total lake volume.

Whole Lake Concentration: _____ ppm

Note: Chemical fact sheets for aquatic pesticides used in Wisconsin are available from the Department of Natural Resources at the following link: dnr.wi.gov/Lakes/plants/factsheets/.

Section VI - Applicant Responsibilities and Certification

1. The applicant has prepared a detailed map which shows the length, width and average depth of each area proposed for the control of rooted vegetation and the surface area in acres or square feet for each proposed algae treatment.
2. The applicant understands that the Department of Natural Resources may require supervision of any aquatic plant management project involving chemicals. Under s. NR 107.07, Wis. Adm. Code, supervision may include inspection of the proposed treatment area, chemicals and application equipment before, during or after treatment. The applicant is required to notify the regional office 4 working days in advance of each anticipated treatment with the date, time, location and size of treatment unless the Department waives this requirement. Do you request the Department to waive the advance notification requirement? Yes No
3. The applicant agrees to comply with all terms or conditions of this permit, if issued, as well as all provisions of Chapter NR 107, Wis. Adm. Code. The required application fee is attached.
4. The applicant has provided a copy of the current application to any affected property owners' association, inland lake district and, in the case of chemical applications for rooted aquatic plants, to all owners of property riparian or adjacent to the treatment area. The applicant has also provided a copy of the current chemical fact sheet for the chemicals proposed for use to any affected property owner's association or inland lake district.
5. Conditions related to invasive species movement. The applicant and operator agree to the following methods required under s. NR 109.05(2), Wis. Adm. Code for controlling, transporting and disposing of aquatic plants and animals, and moving water:
 - Aquatic plants and animals shall be removed and water drained from all equipment as required by s. 30.07, Wis. Stats., and ss. NR 19.055 and 40.07, Wis. Adm. Code.
 - Operator shall comply with the most recent Department-approved 'Boat, Gear, and Equipment Decontamination and Disinfection Protocol', Manual Code # 9183.1, available at <http://dnr.wi.gov/topic/invasives/disinfection.html>

Check if you are signing as Agent for Applicant.

I hereby certify that the above information is true and correct and that copies of this application have been provided to the appropriate parties named in Section II and that the conditions of the permit and pesticide use will be adhered to.

Signature of Applicant

Date Signed



3/24/2017

All portions of this permit, map and accompanying cover letter must be in possession of the chemical applicator at time of treatment. During treatment all provisions of Chapter NR 107, specifically ss. NR 107.07 and NR 107.08, Wis. Adm. Code, must be complied with, as well as the specific conditions contained in the permit cover letter.

**Chemical Aquatic Plant Control Application and Permit
WPDES Pesticide Pollutant Permit Application**

Form 3200-004 (R 02/17)

Page 4 of 4

Section VII - WPDES Permit Request

Is WPDES coverage being requested? Refer to <http://dnr.wi.gov/topic/wastewater/aquaticpesticides.html> for more information.

- No: Already have WPDES coverage. Yes - complete section VII with signature
 WPDES coverage not needed

- Select which permit you are requesting:
- WI-0064556-1 Aquatic Plants, Algae & Bacteria
 - WI-0064564-1 Aquatic Animals
 - WI-0064581-1 Mosquitoes & other Flying Insects

Indicate WPDES permittee responsible for the pollutant discharge: Applicator Sponsor

Do you expect the pest control activity will result in a detectable pollutant discharge to waters of the state beyond the treatment area boundary or a pollutant residual in waters of the state after the treatment project is completed? Yes No

If yes, identify the pollutant(s): _____

Are you planning to incorporate integrated pest management principles, as specified in the WPDES permit, into your pest control activity to minimize any pollutant residual or pollutant discharge beyond the treatment area? Yes No

Type of WPDES coverage being requested: One Treatment Site Statewide Coverage

For informational purposes, select areas of WI for most of your aquatic treatments: NW NE SW SE

Is WPDES coverage being requested for more than 1 year?

- Yes No If yes, the permittee will remain in "active" WPDES status until a Notice of Termination is submitted.

I hereby certify that I am the authorized representative (as specified in Ch. NR 205.07(1)(g), Wis. Adm. Code) of the pest treatment activity which is the subject of this permit application. I certify that the information contained in this form and attachments is, to the best of my knowledge, true, accurate and complete.

Signature of Authorized Representative

Printed Name

Date Signed

Section VIII - Permit to Carry Out Chemical Treatment (Leave Blank - DNR Use Only)

The foregoing application is approved. Permission is hereby granted to the applicant to chemically treat the waters described in the application during the season of 20 17.

Application fee received?

- Yes No

State of Wisconsin
Department of Natural Resources
For the Secretary

Advance notification of treatment required?

- Yes No

By Eason Brecken
Regional Director or Designee

4/20/17
Date Signed

4/20/17
Date Mailed

via email

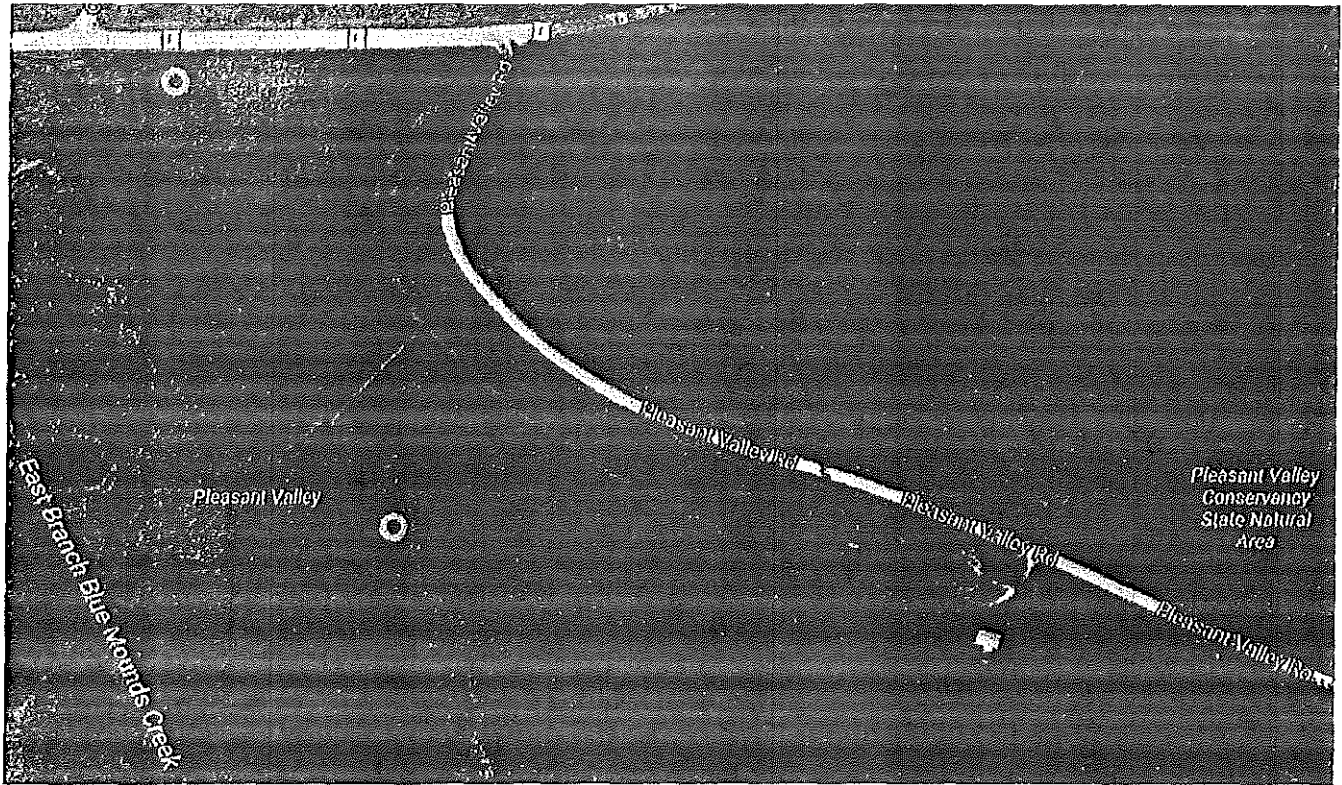
Please Note:

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Pleasant Valley Conservancy State Natural Area T7N R6E Section 5
Proposed hybrid and narrow-leaved cattail follow-up suppression areas (delineated in red)
Total Acreage = 0.02 Ac

**Chemical Aquatic Plant Control Application and Permit
 Wisconsin Pollutant Discharge Elimination System (WPDES)
 Pesticide Pollutant Permit Application**
 Form 3200-004 (R 11/11) Page 1 of 4

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| DNR Use Only | |
|------------------------------------|--|
| ID Number <i>SC 2016-13-601</i> | Permit Expiration Date <i>10/1/2016</i> |
| Waterbody # <i>125100</i> | Fee Received <i>45.00</i> |

Section I - Applicant Information - Name of Permit Applicant. Also indicate names and addresses of all individuals, associations, communities or town sanitary districts sponsoring treatment. Attach additional sheets if necessary.

| | | | | | | | |
|--------------|--|-------------|-------------------|--------------|--|-------------|-------------------|
| Home Address | Name Thomas D. Brock (Savanna Oak Foundation, Inc.) | | | Lake Address | Name Pleasant Valley Conservancy State Natural Area (No. 551) | | |
| | Street Address 1227 Dartmouth Road | | | | Street Address 4609 Pleasant Valley Road | | |
| | City Madison | State WI | ZIP Code 53705 | | City Black Earth | State WI | ZIP Code 53515 |
| | Phone Number (include area code) Primary: (608) 238-5050 Secondary: (608) 220-0590 | | | | Email Address tdbrock@charter.net | | |

Section II - Aquatic Plant Control Location

| | | | | | |
|--|---------------|----------------------------|--------------------|---|--|
| Waterbody to be Treated (waterbody where treatment area is located) East Branch of the Blue Mounds Creek | | | | Lake Surface Area N/A acres | Estimated Surface Area that is 10 Feet or Less in Depth N/A acres |
| County Dane | Section 05 | Township T7 N | Range 06 | <input checked="" type="checkbox"/> E <input type="checkbox"/> W | Name of Applicator or Firm Integrated Restorations, LLC |
| Latitude: N43 6.412' | | Longitude: W089 48.851' | | Street or Route 228 South Park Street | |
| Is the waterbody a private pond? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | City Belleville | | |
| Does the waterbody have public access? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | State WI | | ZIP Code 53508 |
| Adjacent Riparian Property Owner Names (attach sheets if necessary) | | | | County Dane | Phone Number (include area code) (608) 424-6997 |
| 1. _____ | | | | Email Address annen00@aol.com | |
| 2. _____ | | | | Applicator Certification Number for Category 5 Aquatic Pesticide Application 62814; 67621 (2 applicators, Craig Annen and Chris Knief) | |
| 3. _____ | | | | Business Location License Number (if applicable) 93-016680-013610 | |
| 4. _____ | | | | Restricted Use Pesticide License Number (if applicable) N/A; no RUP use proposed. | |
| 5. _____ | | | | | |
| 6. _____ | | | | | |
| 7. _____ | | | | | |
| Name of Lake Property Owners' Association Representative or Lake District Representative (if none, please indicate) None. | | | | | |

Area(s) Proposed for Control: (Note details in permit cover letter for final permitted sizes of treatment areas.)

| Treatment Length | Treatment Width | Estimated Acreage | Average Depth | Total Estimated Acres |
|--|-----------------|-------------------|---------------|---------------------------------------|
| A. 125 ft. X 60 ft. ÷ 43,560 ft. ² = | 0.17 | 1 ft. | | |
| B. 125 ft. X 65 ft. ÷ 43,560 ft. ² = | 0.19 | 1 ft. | | Total from lines A - E 0.36 acres |
| C. _____ ft. X _____ ft. ÷ 43,560 ft. ² = | | _____ ft. | | Total from Attached Sheets 0.00 acres |
| D. _____ ft. X _____ ft. ÷ 43,560 ft. ² = | | _____ ft. | | |
| E. _____ ft. X _____ ft. ÷ 43,560 ft. ² = | | _____ ft. | | Grand Total 0.36 acres |

If the estimated acreage is greater than 10 acres, or is greater than 10 percent of the estimated area 10 feet or less in depth in Section II, complete and attach Form 3200-004A, Large-Scale Treatment Worksheet. Private pond treatments are exempted from this requirement.

| | |
|---|---|
| Is this area within or adjacent to a sensitive area designated by the Department of Natural Resources? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | DNR Use: NHI Review? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Describe: <i>See Cover letter</i> |
|---|---|

Chemical Aquatic Plant Control Application and Permit WPDES Pesticide Pollutant Permit Application

Form 3200-004 (R 11/11)

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Section III - Fees

1. s. NR 107.11(1), Wis. Adm. Code, lists the conditions under which the permit fee is limited to the \$20 minimum charge.
2. s. NR 107.11(4), Wis. Adm. Code, lists the uses that are exempt from permit requirements.
3. s. NR 107.04(2), Wis. Adm. Code, provides for a refund of acreage fees if the permit is denied or if no treatment occurs.

4. Fee calculations:

| | |
|--|-----------------|
| Basic Permit Fee (non-refundable) | \$ 20.00 |
| If proposed treatment is over 0.25 acre, calculate acreage fee: (round up to nearest whole acre, to maximum of 50 acres.) | |
| 1 acres X \$25 per acre = \$ | 25.00 |
| If proposed treatment is ≤ 0.25 acre, acreage fee is \$0. | |
| Enter Acreage Fee (from above) | \$25.00 |
| Total Fee Enclosed | \$ 45.00 |

Site Map: Attach a sketch or a printed map of lake indicating area and dimensions of each individual area where plant control is desired and flow of surface water outside treatment area. Also show location of property owners riparian to and adjacent to the treatment area. Attach a separate list of owners and corresponding treatment dimensions coded to the lake map, if necessary.

Section IV - Reasons for Aquatic Plant Control

Is this permit being requested in accordance with an approved Aquatic Plant Management Plan? Yes No

Treatment Type: Lake Pond Wetland Marina Other

Goal of Aquatic Plant Control:

- Reduce nuisance algae accumulation
- Maintain navigational channel for common use
- Maintain private access for boating
- Maintain private access for fishing
- Improve swimming
- Control of purple loosestrife
- Control of invasive exotics
- Other: _____

Nuisance Caused By:

- Algae
- Emergent water plants (majority of leaves and stems growing above water surface, e.g. cattails, bulrushes)
- Floating water plants (majority of leaves floating on water surface, e.g., waterlilies, duckweed)
- Submerged water plants (leaves and stems below water surface, flowering parts may be exposed, e.g., milfoil, coontail)
- Other: _____

List Target Plants

Hybrid cattail (Typha x glauca Godr.)

Note: Different plants require different chemicals for effective treatment. Do not purchase chemical before identifying plants.

Section V - Chemical Control

Alternatives to Chemical Control:

| Alternatives to Chemical Control: | Feasible? | If No, Why Not? |
|-----------------------------------|---|---|
| 1. Mechanical harvesting | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Ineffective; target species is a perennial emergent. |
| 2. Hand pulling | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Ineffective; target species is a rhizomatous perennial. |
| 3. Hand raking | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Target species is an emergent zone plant. |
| 4. Hand cutting | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Will be used in conjunction with herbicide application. |
| 5. Sediment screens/covers | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | N/A to proposed treatment site. |
| 6. Dredging | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Too drastic and would negatively affect hydrology. |
| 7. Lake drawdown | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | No water level control devices exist on site. |
| 8. Nutrient controls in watershed | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | N/A in this part of the watershed; multiple landowners. |
| 9. Other: _____ | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | N/A |

Note: If proposed treatment involves multiple properties, consider feasibility of EACH alternative for EACH property owner.

If you checked yes to any of the alternatives listed above, please explain your decision to use chemical controls:

Chemical control will be used in conjunction with mowing to expose cut surfaces for directed herbicide application to enhance suppression while concomitantly reducing the concentration and total volume of herbicide required for chemical suppression.

Chemical Aquatic Plant Control Application and Permit
WPDES Pesticide Pollutant Permit Application

Form 3200-004 (R 11/11)

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Section V - Chemical Control (continued)

Trade Name of Proposed Chemical(s)

Polaris (imazapyr IPA salt) EPA Reg. No. 228-534.

A water conditioning agent (ReQuest, Helena Chemical Co.) will be added at 0.25% (v/v) since Polaris is formulated as an IPA salt.

A sticking agent approved for use in aquatic systems (Induce, Helena Chemical Co.) will be added at 4% (v/v) to reduce drift potential and keep applied herbicide on-target.

Method of Application: Directed low-volume cut-surface application with small capacity compression sprayer.

Will surface water outflow and/or overflow be controlled to prevent chemical loss? Yes No

Have the proposed chemicals been permitted in a prior year on the proposed site? All Some None

What were the results of the treatment?

N/A. This is the first proposed treatment for this site. Application method has been successfully applied at other sites where the target species is problematic.

Note: Chemical fact sheets for aquatic pesticides used in Wisconsin are available from the Department of Natural Resources upon request.

Section VI - Applicant Responsibilities and Certification

1. The applicant has prepared a detailed map which shows the length, width and average depth of each area proposed for the control of rooted vegetation and the surface area in acres or square feet for each proposed algae treatment.
2. The applicant understands that the Department of Natural Resources may require supervision of any aquatic plant management project involving chemicals. Under s. NR 107.07, Wis. Adm. Code, supervision may include inspection of the proposed treatment area, chemicals and application equipment before, during or after treatment. The applicant is required to notify the regional office 4 working days in advance of each anticipated treatment with the date, time, location and size of treatment unless the Department waives this requirement. Do you request the Department to waive the advance notification requirement? Yes No
3. The applicant agrees to comply with all terms or conditions of this permit, if issued, as well as all provisions of Chapter NR 107, Wis. Adm. Code. The required application fee is attached.
4. The applicant has provided a copy of the current application to any affected property owners' association, inland lake district and, in the case of chemical applications for rooted aquatic plants, to all owners of property riparian or adjacent to the treatment area. The applicant has also provided a copy of the current chemical fact sheet for the chemicals proposed for use to any affected property owner's association or inland lake district.

Check if you are signing as Agent for Applicant.

I hereby certify that the above information is true and correct and that copies of this application have been provided to the appropriate parties named in Section II and that the conditions of the permit and pesticide use will be adhered to.


Signature of Applicant

February 2, 2016
Date Signed

All portions of this permit, map and accompanying cover letter must be in possession of the chemical applicator at time of treatment. During treatment all provisions of Chapter NR 107, specifically ss. NR 107.07 and NR 107.08, Wis. Adm. Code, must be complied with, as well as the specific conditions contained in the permit cover letter.

Chemical Aquatic Plant Control Application and Permit WPDES Pesticide Pollutant Permit Application

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Section VII - WPDES Permit Request

Is WPDES coverage being requested? Refer to <http://dnr.wi.gov/org/water/wm/ww/aquaticpesticides.htm> for more information.

Yes No If no, you do not need to complete this section.

Select which permit you are requesting:

WI-0064556-1 Aquatic Plants, Algae & Bacteria

WI-0064564-1 Aquatic Animals

WI-0064581-1 Mosquitoes & other Flying Insects

Indicate WPDES permittee responsible for the pollutant discharge: Applicator Sponsor

Do you expect the pest control activity will result in a detectable pollutant discharge to waters of the state beyond the treatment area boundary or a pollutant residual in waters of the state after the treatment project is completed? Yes No

If yes, identify the pollutant(s): _____

Are you planning to incorporate integrated pest management principles, as specified in the WPDES permit, into your pest control activity to minimize any pollutant residual or pollutant discharge beyond the treatment area? Yes No

Type of WPDES coverage being requested: One Treatment Site Statewide Coverage

For informational purposes, select areas of WI for most of your aquatic treatments: NW NE SW SE

Is WPDES coverage being requested for more than 1 year?

Yes No If yes, the permittee will remain in "active" WPDES status until a Notice of Termination is submitted.

I hereby certify that I am the authorized representative (as specified in Ch. NR 205.07(1)(g), Wis. Adm. Code) of the pest treatment activity which is the subject of this permit application. I certify that the information contained in this form and attachments is, to the best of my knowledge, true, accurate and complete.

Signature of Authorized Representative

Printed Name

Date Signed

Section VIII - Permit to Carry Out Chemical Treatment (Leave Blank - DNR Use Only)

The foregoing application is approved. Permission is hereby granted to the applicant to chemically treat the waters described in the application during the season of 2016.

Application fee received?

Yes No

State of Wisconsin
Department of Natural Resources
For the Secretary

Advance notification of treatment required?

Yes No

By *Jeanne Steen*
Regional Director or Designee

3/3/2016
Date Signed

3/7/2016
Date Mailed

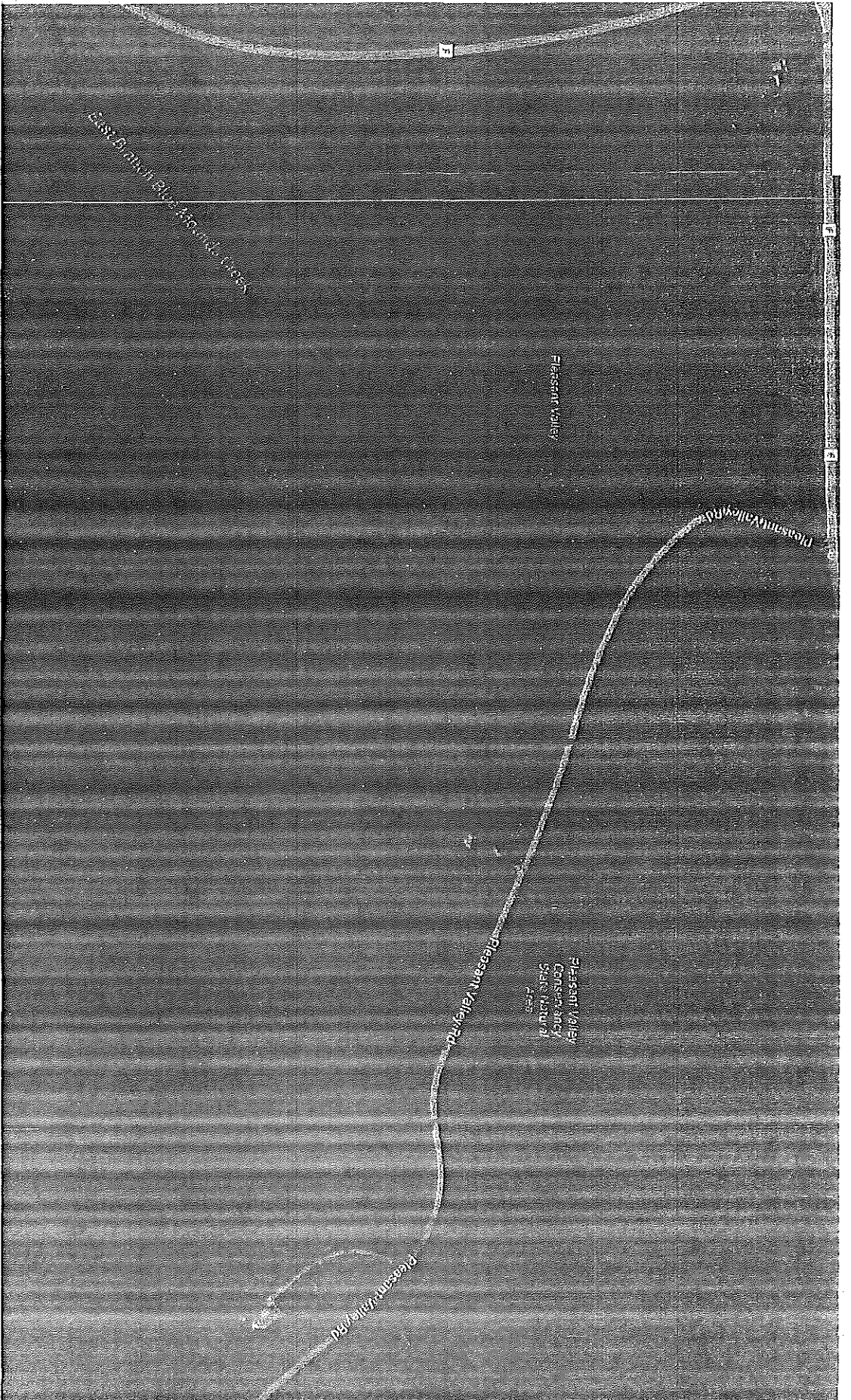
Please Note:

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to ss. 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to s. 227.48(2), Wis. Stats.

To request a contested case hearing pursuant to s. 227.42, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. The filing of a request for a contested case hearing is not a prerequisite for judicial review and does not extend the 30-day period for filing a petition for judicial review.



Hybrid cattail clones (delineated in red) at Pleasant Valley Conservancy State Natural Area (T7N R6E Sec. 5, Dane County, WI)

Pleasant Valley Conservancy State Natural Area
Marsh Vegetation Inventory

| Botanical Name | Common Name | C value | Botanist | Guild |
|-------------------------------------|---------------------------|---------|--------------------|-------------------------|
| <i>Acer saccharinum</i> | Sugar Maple | 2 | Craig Annen | Tree |
| <i>Alisma subcordatum</i> | Water Plantain | 3 | Craig Annen | Emergent Forb |
| <i>Allium canadense</i> | Wild Onion | 4 | Patricia Trochlell | Forb |
| <i>Anemone canadensis</i> | Meadow Anemone | 4 | Patricia Trochlell | Forb |
| <i>Anaphalis margaritacea</i> | Pearly Everlasting | 3 | Patricia Trochlell | Forb |
| <i>Angelica atropurpurea</i> | Great Angelica | 6 | Patricia Trochlell | Calciphilic Forb |
| <i>Arnoglossum atriplicifolia</i> | Pale Indian Plantain | 4 | Patricia Trochlell | Forb |
| <i>Asclepias exaltata</i> | Poke Milkweed | 7 | Patricia Trochlell | Forb |
| <i>Asclepias incarnata</i> | Swamp Milkweed | 5 | Patricia Trochlell | Forb |
| <i>Asclepias syriaca</i> | Common Milkweed | 1 | Patricia Trochlell | Forb |
| <i>Aster borealis</i> | Bog Aster | 10 | Craig Annen | Bog Forb |
| <i>Aster firmus</i> | Shining Aster | 6 | Patricia Trochlell | Forb |
| <i>Aster lanceolatus</i> | Panicled Aster | 4 | Patricia Trochlell | Forb |
| <i>Aster novae-angliae</i> | New England Aster | 3 | Patricia Trochlell | Forb |
| <i>Aster pilosus</i> | Frost Aster | 1 | Patricia Trochlell | Forb |
| <i>Aster prenanthoides</i> | Crooked Aster | 9 | Patricia Trochlell | Forb |
| <i>Aster puniceus</i> | Red-Stemmed Aster | 6 | Patricia Trochlell | Forb |
| <i>Aster umbellatus</i> | Flat-Topped Aster | 6 | Patricia Trochlell | Forb |
| <i>Bidens cernuus</i> | Nodding Beggar's Ticks | 4 | Patricia Trochlell | Drawdown Forb |
| <i>Bromus ciliatus</i> | Fringed Brome | 7 | Patricia Trochlell | Grass |
| <i>Calamagrostis canadensis</i> | Blue-Joint Grass | 5 | Patricia Trochlell | Matrix Grass |
| <i>Caltha palustris</i> | Marsh Marigold | 6 | Patricia Trochlell | Calciphilic Forb |
| <i>Campanula aparinoides</i> | Marsh Bellflower | 7 | Patricia Trochlell | Forb |
| <i>Cardamine bulbosa</i> | Spring Cress | 6 | Sean Longabaugh | Forb |
| <i>Carex aquatilis</i> | Water Sedge | 7 | Craig Annen | Matrix Sedge (Very Wet) |
| <i>Carex bebbii</i> | Bebb's Oval Sedge | 4 | Josh Soulman | Sedge |
| <i>Carex comosa</i> | Bristly Lake Sedge | 5 | Craig Annen | Sedge |
| <i>Carex crawfordii</i> | Crawford's Oval Sedge | 5 | Craig Annen | Sedge |
| <i>Carex diandra</i> | Bog Panicled Sedge | 9 | Ted Cochrane | Bog Sedge |
| <i>Carex hystericina</i> | Porcupine Sedge | 3 | Josh Soulman | Sedge |
| <i>Carex granularis</i> | Limestone Meadow Sedge | 3 | Josh Soulman | Calciphilic Sedge |
| <i>Carex interior</i> | Oak Sedge | 7 | Josh Soulman | Sedge |
| <i>Carex lacustris</i> | Lake Sedge | 6 | Josh Soulman | Matrix Sedge (Very Wet) |
| <i>Carex leptalea</i> | Slender Sedge | 9 | Josh Soulman | Sedge |
| <i>Carex pellita</i> | Broad-Leaved Woolly Sedge | 4 | Josh Soulman | Calciphilic Sedge |
| <i>Carex prairea</i> | Prairie Sedge | 10 | Josh Soulman | Sedge |
| <i>Carex scoparia</i> | Lance-Fruited Oval Sedge | 4 | Craig Annen | Bog Sedge |
| <i>Carex stipata</i> | Fox Sedge | 2 | Josh Soulman | Bog Sedge |
| <i>Carex stricta</i> | Tussock Sedge | 7 | Josh Soulman | Matrix Sedge (Moist) |
| <i>Carex trichocarpa</i> | Hairy-Fruit Sedge | 7 | Josh Soulman | Matrix Sedge (Wet) |
| <i>Carex tuckermanii</i> | Tuckerman's Sedge | 8 | Craig Annen | Riparian Sedge |
| <i>Carex utricularia</i> | Yellow Lake Sedge | 7 | Josh Soulman | Bog Sedge |
| <i>Carex vulpinoidea</i> | Brown Fox Sedge | 2 | Josh Soulman | Sedge |
| <i>Ceratophyllum demersum</i> | Coontail | 3 | Craig Annen | Aquatic (Calciphile) |
| <i>Chelone glabra</i> | Turtlehead | 7 | Patricia Trochlell | Forb |
| <i>Cicuta maculata</i> | Water-Hemlock | 6 | Patricia Trochlell | Forb |
| <i>Circaea lutetiana canadensis</i> | Enchanter's Nightshade | 2 | Patricia Trochlell | Forb |
| <i>Cirsium muticum</i> | Swamp Thistle | 8 | Patricia Trochlell | Forb |
| <i>Cuscuta granovii</i> | Swamp Dodder | 4 | Sean Longabaugh | Parasitic Forb |
| <i>Eleocharis acicularis</i> | Needle Spike Rush | 5 | Craig Annen | Sedge |
| <i>Eleocharis obtusa</i> | Blunt Spike Rush | 3 | Craig Annen | Sedge |
| <i>Eleocharis palustris</i> | Marsh Spike Rush | 6 | Craig Annen | Sedge |
| <i>Eleocharis rostellata</i> | Beaked Spike Rush | 10 | Craig Annen | Sedge |
| <i>Elodea canadensis</i> | Elodea | 3 | Craig Annen | Aquatic |
| <i>Elymus riparius</i> | Riverbank Wild Rye | 6 | Patricia Trochlell | Riparian Grass |
| <i>Epilobium coloratum</i> | Willow Herb | 3 | Patricia Trochlell | Forb |
| <i>Epilobium leptophyllum</i> | Marsh Willow Herb | 3 | Craig Annen | Forb |
| <i>Equisetum arvense</i> | Common Horsetail | 1 | Craig Annen | Fern Ally |
| <i>Equisetum fluviatile</i> | River Horsetail | 7 | Craig Annen | Fern Ally |
| <i>Erigeron pulchellus</i> | Robin's Plantain | 4 | Patricia Trochlell | Forb |
| <i>Erigeron strigosus</i> | Daisy Fleabane | 2 | Patricia Trochlell | Forb |
| <i>Eupatorium maculatum</i> | Spotted Joe-Pye Weed | 4 | Patricia Trochlell | Forb |

Pleasant Valley Conservancy State Natural Area
Marsh Vegetation Inventory

| Botanical Name | Common Name | C value | Botanist | Guild |
|------------------------------------|---|---------|--------------------|-------------------|
| <i>Eupatorium perfoliatum</i> | Boneset | 6 | Patricia Trochlell | Forb |
| <i>Galearis spectabilis</i> | Showy Orchis | 6 | Patricia Trochlell | Bog Forb |
| <i>Galium aparine</i> | Catchweed | 2 | Patricia Trochlell | Forb |
| <i>Galium boreale</i> | Northern Bedstraw | 5 | Patricia Trochlell | Forb |
| <i>Galium concinnum</i> | Pretty Bedstraw | 6 | Craig Annen | Forb |
| <i>Galium labradoricum</i> | Marsh Bedstraw | 10 | Craig Annen | Forb |
| <i>Geum aleppicum strictum</i> | Yellow Avens | 3 | Patricia Trochlell | Forb |
| <i>Geum canadense</i> | White Avens | 2 | Patricia Trochlell | Forb |
| <i>Glyceria canadensis</i> | Rattlesnake Manna Grass | 7 | Craig Annen | Grass |
| <i>Glyceria grandis</i> | American Manna Grass | 6 | Patricia Trochlell | Grass |
| <i>Glyceria striata</i> | Fowl Manna Grass | 4 | Patricia Trochlell | Grass |
| <i>Hasteola suaveolens</i> | Sweet Indian Plantain (Special Concern) | 8 | Patricia Trochlell | Forb |
| <i>Helenium autumnale</i> | Sneezeweed | 4 | Patricia Trochlell | Forb |
| <i>Helianthus grosseserratus</i> | Saw-Toothed Sunflower | 2 | Patricia Trochlell | Forb |
| <i>Helianthus tuberosus</i> | Jerusalem Artichoke | 2 | Patricia Trochlell | Forb |
| <i>Heracleum lanatum</i> | Cow Parsnip | 3 | Patricia Trochlell | Forb |
| <i>Impatiens capensis</i> | Jewel Weed | 2 | Patricia Trochlell | Forb |
| <i>Iris virginica shrevei</i> | Blue Flag Iris | 5 | Patricia Trochlell | Forb |
| <i>Juncus canadensis</i> | Rush | 7 | Craig Annen | Rush |
| <i>Juncus dudleyi</i> | Dudley's Rush | 4 | Patricia Trochlell | Rush |
| <i>Juncus nodosus</i> | Jointed Rush | 7 | Craig Annen | Rush |
| <i>Juncus tenuis</i> | Path Rush | 1 | Craig Annen | Rush |
| <i>Lathyrus palustris</i> | Marsh Pea | 5 | Patricia Trochlell | Forb |
| <i>Leersia oryzoides</i> | Rice Cut Grass | 3 | Patricia Trochlell | Grass |
| <i>Lemna minor</i> | Duckweed | 4 | Craig Annen | Aquatic |
| <i>Lemna turionifera</i> | Lesser Forked Duckweed | 2 | Craig Annen | Aquatic |
| <i>Liatris ligustylis</i> | Meadow Blazing Star | 7 | Amanda Budyak | Forb |
| <i>Lilium michiganense</i> | Turk's Cap Lily | 6 | Patricia Trochlell | Forb |
| <i>Lobelia cardinalis</i> | Cardnal Flower | 7 | Patricia Trochlell | Forb |
| <i>Lobelia kalmii</i> | Kalm's Lobelia | 9 | Craig Annen | Calciphillic Forb |
| <i>Lobelia siphilitica</i> | Great Blue Lobelia | 5 | Patricia Trochlell | Forb |
| <i>Lysimachia ciliata</i> | Fringed Loosestrife | 5 | Patricia Trochlell | Forb |
| <i>Lycopus americanus</i> | Water Horehound | 4 | Patricia Trochlell | Forb |
| <i>Lycopus uniflorus</i> | Bugleweed | 4 | Craig Annen | Forb |
| <i>Marchantia polymorpha</i> | Black-Lined Liverwort | NR | Craig Annen | Liverwort |
| <i>Mentha arvensis</i> | Wild Mint | 3 | Patricia Trochlell | Forb |
| <i>Monarda fistulosa</i> | Wild Bergamont | 3 | Patricia Trochlell | Forb |
| <i>Muhlenbergia glomerata</i> | Marsh Wild Timothy | 9 | Craig Annen | Grass |
| <i>Napaea dioica</i> | Glade Mallow | 6 | Patricia Trochlell | Forb |
| <i>Onoclea sensibilis</i> | Sensitive Fern | 5 | Amanda Budyak | Fern |
| <i>Oxalis stricta</i> | Yellow Wood Sorrel | 0 | Patricia Trochlell | Forb |
| <i>Oxypolis rigidior</i> | Cowbane | 6 | Patricia Trochlell | Forb |
| <i>Pedicularis lanceolata</i> | Swamp Betony | 8 | Patricia Trochlell | Hemiparasitic |
| <i>Platanthera huronensis</i> | Huron Green Orchid | 7 | Craig Annen | Bog |
| <i>Poa palustris</i> | Marsh Bluegrass | 5 | Patricia Trochlell | Grass |
| <i>Polemonium reptans</i> | Jacob's Ladder | 6 | Patricia Trochlell | Forb |
| <i>Polygonum hydropiperoides</i> | Water Pepper | 6 | Patricia Trochlell | Drawdown Forb |
| <i>Polygonum punctatum</i> | Smartweed | 5 | Patricia Trochlell | Drawdown Forb |
| <i>Polygonum amphibum</i> | Pink Smartweed | 5 | Craig Annen | Forb |
| <i>Potamogeton nodosus</i> | Long-Leaved Pondweed | 7 | Craig Annen | Aquatic |
| <i>Potamogeton pusillus</i> | Slender-Leaved Pondweed | 7 | Craig Annen | Aquatic |
| <i>Proserpinaca palustris</i> | Mermaid Weed | 8 | Craig Annen | Aquatic |
| <i>Quercus macrocarpa</i> | Bur Oak | 5 | Amanda Budyak | Tree |
| <i>Pycnanthemum virginianum</i> | Virginia Mountain Mint | 6 | Patricia Trochlell | Forb |
| <i>Ranunculus abortivus</i> | Kidney-Leaf Buttercup | 1 | Craig Annen | Forb |
| <i>Ranunculus hispidus nitidus</i> | Swamp Buttercup | 6 | Patricia Trochlell | Forb |
| <i>Ranunculus recurvatus</i> | Hooked Buttercup | 5 | Patricia Trochlell | Forb |
| <i>Ranunculus sceleratus</i> | Cursed Crow's Foot | 3 | Craig Annen | Forb |
| <i>Ribes americanum</i> | Black Currant | 4 | Patricia Trochlell | Shrub |
| <i>Rosa</i> sp. | Rose | NR | Craig Annen | Shrub |
| <i>Rudbeckia hirta</i> | Black-Eyed Susan | 4 | Patricia Trochlell | Forb |
| <i>Rudbeckia laciniata</i> | Cut-Leaved Coneflower | 6 | Patricia Trochlell | Forb |

Pleasant Valley Conservancy State Natural Area
Marsh Vegetation Inventory

| Botanical Name | Common Name | C value | Botanist | Guild |
|---------------------------------|-------------------------------|---------|--------------------|-------------------|
| <i>Rumex orbiculatus</i> | Water Dock | 8 | Patricia Trochlell | Forb |
| <i>Sagittaria latifolia</i> | Arrowhead | 3 | Craig Annen | Emergent Forb |
| <i>Salix bebbiana</i> | Bebb's Willow | 7 | Patricia Trochlell | Tree |
| <i>Salix discolor</i> | Sage Willow | 2 | Patricia Trochlell | Tree |
| <i>Salix nigra</i> | Black Willow | 4 | Patricia Trochlell | Tree |
| <i>Sambucus canadensis</i> | Elderberry | 3 | Patricia Trochlell | Shrub |
| <i>Saxifraga pensylvanica</i> | Swamp Saxifrage | 7 | Patricia Trochlell | Forb |
| <i>Scirpus atrovirens</i> | Green-Headed Bulrush | 3 | Craig Annen | Sedge |
| <i>Scirpus cyperinus</i> | Woolgrass | 4 | Patricia Trochlell | Sedge |
| <i>Scirpus hattorianus</i> | Early Green Bulrush | 3 | Craig Annen | Sedge |
| <i>Scirpus validus</i> | Soft-Stem Bulrush | 4 | Patricia Trochlell | Sedge |
| <i>Scleria verticillata</i> | Low Nutrush (Special Concern) | 10 | Craig Annen | Sedge |
| <i>Scutellaria galericulata</i> | Marsh Skullcap | 5 | Patricia Trochlell | Forb |
| <i>Silphium perfoliatum</i> | Cup Plant | 4 | Patricia Trochlell | Forb |
| <i>Sium suave</i> | Water Parsnip | 5 | Patricia Trochlell | Forb |
| <i>Solidago canadensis</i> | Canada Goldenrod | 1 | Patricia Trochlell | Forb |
| <i>Solidago flexicaulis</i> | Zig-Zag Goldenrod | 6 | Craig Annen | Forb |
| <i>Solidago gigantea</i> | Late Goldenrod | 3 | Patricia Trochlell | Forb |
| <i>Solidago riddellii</i> | Riddell's Goldenrod | 7 | Craig Annen | Calciphillic Forb |
| <i>Solidago speciosa</i> | Showy Goldenrod | 5 | Craig Annen | Forb |
| <i>Solidago ulmifolia</i> | Elm-Leaved Goldenrod | 5 | Craig Annen | Forb |
| <i>Sphagnum</i> sp. | Sphagnum Moss | NR | Craig Annen | Moss |
| <i>Stachys palustris</i> | Hedge Nettle | 5 | Patricia Trochlell | Forb |
| <i>Stellaris longifolia</i> | Stitchwort | 5 | Patricia Trochlell | Forb |
| <i>Symplocarpus foetidus</i> | Skunk Cabbage | 8 | Patricia Trochlell | Calciphillic Forb |
| <i>Sparganium eurycarpum</i> | Bur-Reed | 5 | Craig Annen | Sedge |
| <i>Spartina pectinata</i> | Prairie Cordgrass | 5 | Craig Annen | Grass |
| <i>Teucrium canadense</i> | American Germander | 4 | Craig Annen | Forb |
| <i>Thalictrum dasycarpum</i> | Purple Meadow-Rue | 4 | Patricia Trochlell | Forb |
| <i>Typha latifolia</i> | Broad-Leaved Cattail | 1 | Patricia Trochlell | Emergent Forb |
| <i>Urtica dioica</i> | Stinging Nettle | 1 | Patricia Trochlell | Forb |
| <i>Valisneria americana</i> | Water Celery | 6 | Craig Annen | Aquatic |
| <i>Verbena hastata</i> | Blue Vervain | 3 | Patricia Trochlell | Forb |
| <i>Verbena stricta</i> | Hoary Vervain | 3 | Patricia Trochlell | Forb |
| <i>Verbena urticifolia</i> | Nettle-Leaved Vervain | 2 | Craig Annen | Forb |
| <i>Veronia fasciculata</i> | Ironweed | 5 | Patricia Trochlell | Forb |
| <i>Viburnum</i> sp. | Highbush Cranberry | NR | Patricia Trochlell | Shrub |
| <i>Vicia americana</i> | American Vetch | 4 | Patricia Trochlell | Forb |
| <i>Viola sororia</i> | Dooryard Violet | 3 | Patricia Trochlell | Forb |
| <i>Zizia aurea</i> | Golden Alexander | 7 | Patricia Trochlell | Forb |

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| Mean C | 4.90 |
| Modal C | 4.00 |
| Species Richness | 164 |
| FQA | 62.75 |

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| Proportion of species C ≥ 7 (S = 39) | 23.8% |
| Proportion of species C ≥ 8 (S = 17) | 10.4% |