



Green Mountain Power /  
To: Kingdom Community Wind  
Project File

Date: December 27, 2018

Memorandum

Project #: 57346.18

From: Mitch Jackman,  
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Environmental Scientist

Re: Year 6 (2018) Invasive Species Monitoring – Wind Farm

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## INTRODUCTION

On behalf of Green Mountain Power (“GMP”), VHB conducted monitoring for invasive plant species within the Wind Farm portion of the Kingdom Community Wind Project (“KCW” or “Project”) in Lowell, Vermont. The monitoring was conducted pursuant to the requirements of the Project’s Certificate of Public Good (“CPG”) issued in Vermont Public Service Board (“PSB”, renamed in 2017 to the Public Utility Commission or PUC) Docket No. 7628, and in accordance with the Project’s approved *Kingdom Community Wind Invasive Species Monitoring and Control Plan* (“Plan”).<sup>1</sup> KCW NNIS monitoring was required by Vermont Agency of Natural Resources (“ANR”) for 5 years following construction unless populations continue to grow. As the 2017 Year 5 monitoring found that populations grew, another year of monitoring was required. This memorandum and supporting attachments address the results of the sixth-year non-native invasive plant species monitoring, conducted during the summer of 2018.

The Plan requires monitoring in all areas where there has been construction soil disturbance, including re-vegetated rock fill slopes, rock cut slopes, crane path and access road surfaces, turbine pad surfaces, and any other construction sites within the limits of the Wind Farm, as well as 100 feet into the forest from the edge of disturbance where any invasive species are observed (“Study Area”). Per the Plan, invasive species monitoring began during the first full growing season following the completion of construction activities. The year 2018 represents Year 6 (the sixth full growing season), as construction was substantially completed in 2012.<sup>2</sup>

The following sections describe the monitoring methods, a brief presentation of results, as well as a summary of assessment and management recommendations. A list of the supporting documentation provided in the Attachments and referenced below includes:

- Attachment 1: Kingdom Community Wind Project, Lowell, Vermont, Invasive Vegetation Monitoring Map set, prepared by VHB;
- Attachment 2: Invasive Vegetation Monitoring Summary – Wind Farm Invasive Vegetation Monitoring, prepared by VHB;
- Attachment 3: Kingdom Community Wind – Wind Farm, Year 6 (2018) Invasive Vegetation Monitoring Photographs, prepared by VHB.

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<sup>1</sup> VHB. June 2011. *Kingdom Community Wind Invasive Species Monitoring and Control Plan*.

<sup>2</sup> The Notice of Termination for the Project’s Construction Stormwater Discharge (INDC) Permit (No. 6216-INDC.1) was filed on July 19, 2013.



## **METHODS**

Invasive species monitoring was conducted in accordance with the Plan by qualified VHB Environmental Scientists from July 13, 2018 through July 18, 2018. Those plant species that are considered Class A or B noxious weeds in Vermont per the Quarantine Rule<sup>3</sup> were documented and mapped. Per the Plan requirements, Class A or B plant occurrences were hand removed at the time of the survey if feasible. If not feasible, then occurrences were flagged in the field and treated via herbicide application or manual removal of seed heads shortly after the monitoring by qualified personnel. All identified occurrences and the type of control measure used are described in the table provided in Attachment 2, which also contains recommendations for follow-up monitoring and control in 2019, either through continued monitoring, hand removal, or application of herbicide.

In addition to monitoring for Class A or B noxious weeds, VHB similarly documented the occurrences of species on the Invasive Species Watch List for Vermont.<sup>4</sup> Presence of these species was documented to monitor the distribution and density of the plant occurrences in the event that it becomes necessary to develop a treatment and control plan. GMP then decided to control the occurrences of Watch List plant occurrences in conjunction with implementation of control measures for Class B plant occurrences.

Where invasive plants were observed, either Class A and B noxious weeds or Watch List species, VHB extended the inventory 100-feet into adjacent forestland, per the Plan requirements. VHB marked each documented occurrence with orange flagging coded with a unique identification and photographed and located each occurrence using sub-meter capable GPS. The number of stems present at an occurrence was enumerated or estimated. The 2018 invasive monitoring activities and subsequent manual control and herbicide application were conducted during an appropriate time in the growing season (after plant establishment but before/during seed development), which are expected to increase the effectiveness of the application.

## **RESULTS AND DISCUSSION**

Based on Year 6 monitoring, two Class B noxious weeds, purple loosestrife (*Lythrum salicaria*) and common reed (*Phragmites australis*) were observed and documented. Two species listed on the Watch List, reed canary grass (*Phalaris arundinacea*), and spotted knapweed (*Centaurea stoebe*), were also observed and documented. The occurrences of these four plant species are depicted on the maps provided in Attachment 1 and population occurrences over the course of the six-year monitoring period are summarized in Table 1, below. No invasive plants were observed outside the area of disturbance in the 100-foot vicinity.

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<sup>3</sup> Vermont Department of Agriculture, Food & Markets. 2012. *Quarantine #3 Noxious Weeds*.

<sup>4</sup> Department of Environmental Conservation. 2017. *Invasive Species Watch List for Vermont*.

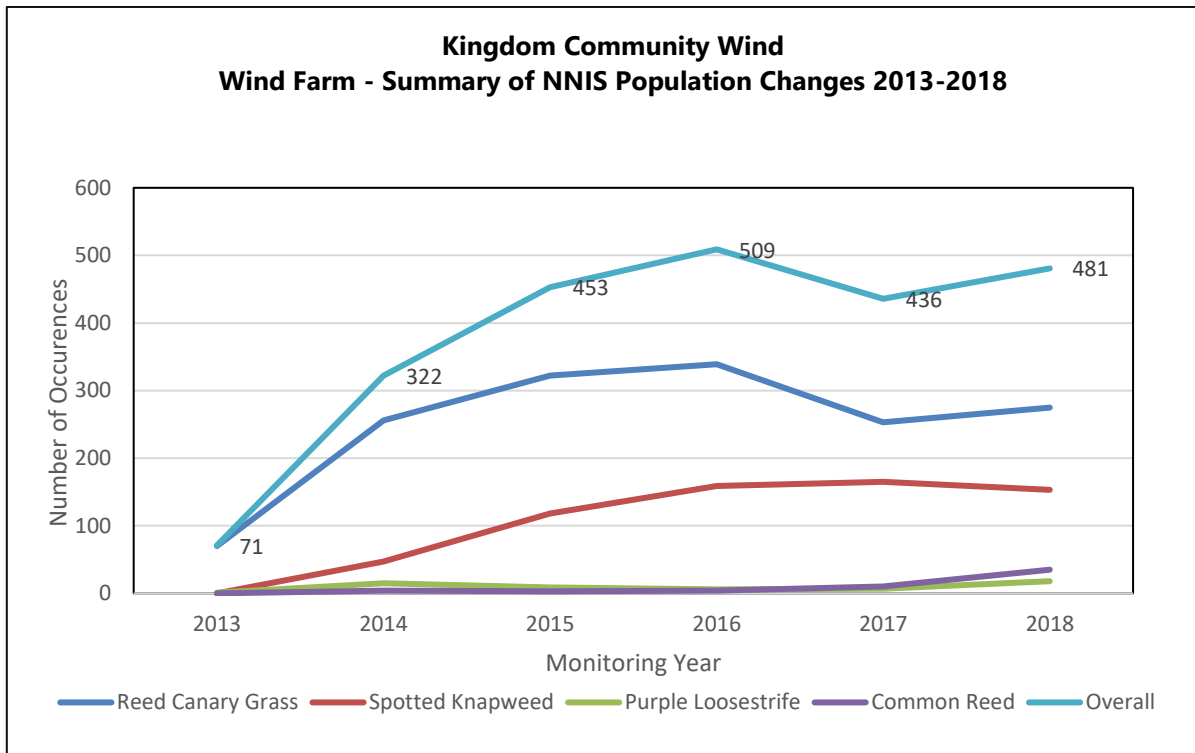


**Table 1. Sixth Year Summary of Invasive Plant Populations**

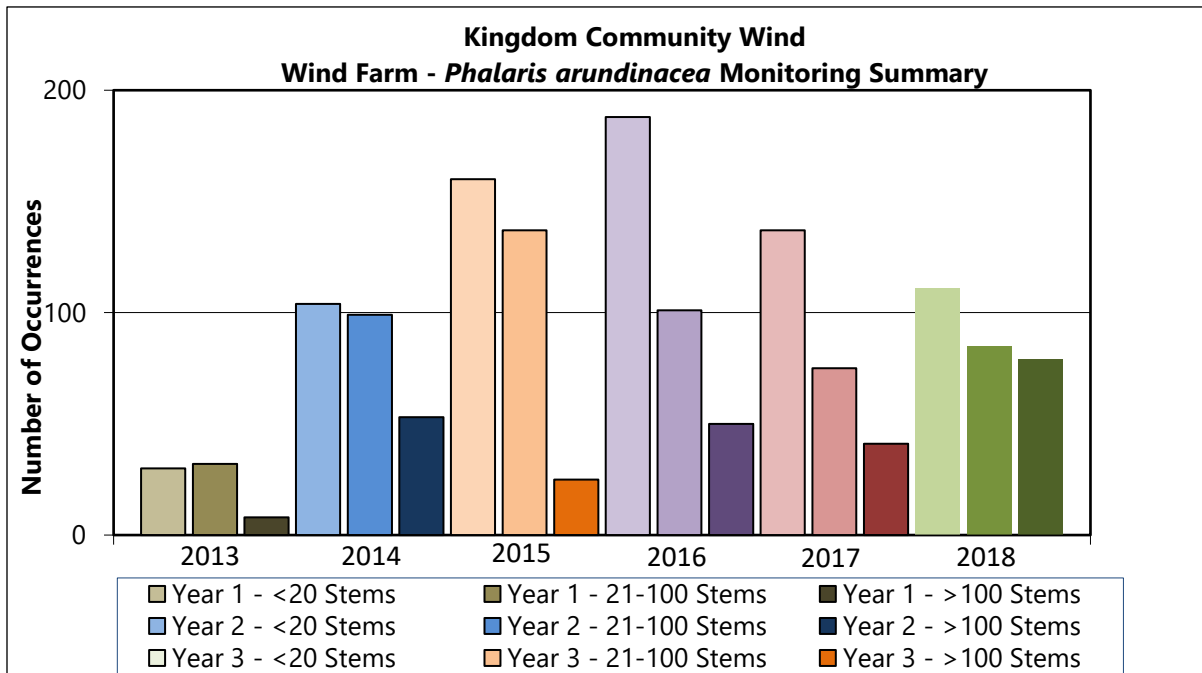
Species	Year 1 (2013)			Year 2 (2014)			Year 3 (2015)			Year 4 (2016)			Year 5 (2017)			Year 6 (2018)		
	Population Size	Population Size	Population Size	Population Size	Population Size	Population Size	Population Size	Population Size	Population Size	Population Size	Population Size	Population Size	Population Size	Population Size	Population Size	Population Size	Population Size	Population Size
	<20 Stems	21-100 Stems	>100 Stems	<20 Stems	21-100 Stems	>100 Stems	<20 Stems	21-100 Stems	>100 Stems	1-20 Stems	21-100 Stems	>100 Stems	1-20 Stems	21-100 Stems	>100 Stems	1-20 Stems	21-100 Stems	>100 Stems
<i>Phalaris arundinacea</i>	30	32	8	104	99	53	160	137	25	188	101	50	137	75	41	111	85	79
<i>Phragmites australis</i>	-	-	-	4	-	-	3	-	-	3	1	-	8	2	-	32	3	-
<i>Centaurea stoebe</i>	-	-	-	26	12	9	41	63	14	90	52	17	87	48	30	61	52	40
<i>Lonicera maackii</i>	-	-	-	-	-	-	1	-	-	1	-	-	1	-	-	-	-	-
<i>Lythrum salicaria</i>	1	-	-	14	1	-	9	-	-	5	1	0	5	2	-	18	-	-
<b>Sub-Total</b>	<b>31</b>	<b>32</b>	<b>8</b>	<b>148</b>	<b>112</b>	<b>62</b>	<b>214</b>	<b>200</b>	<b>39</b>	<b>287</b>	<b>155</b>	<b>67</b>	<b>238</b>	<b>127</b>	<b>71</b>	<b>222</b>	<b>140</b>	<b>119</b>
<b>Total:</b>	<b>71</b>			<b>322</b>			<b>453</b>			<b>599</b>			<b>436</b>			<b>481</b>		

During 2018, VHB located 18 purple loosestrife occurrences along the access road, mainly adjacent to stormwater treatment ponds, which represents an increase from the number of occurrences observed in 2017 (seven occurrences). The purple loosestrife colonies were all small in size ranging between one and 20 stems. This season represents the highest count of purple loosestrife observed at 18 occurrences, up from 15 occurrences during Year 2 monitoring in 2014. No purple loosestrife occurrences were found in the forested portions of the Study Area. Common reed was found in 10 locations in 2017 and in 35 in 2018. The common reed populations were found to be generally small; 32 populations were less than 20 stems and only three occurrences had a population size greater than 20 but less than 100 stems. During 2018, VHB did not observe any common reed occurrences within adjacent woodland areas. Common reed was observed mainly within roadside ditches or within or adjacent to stormwater treatment ponds and turbine pad surfaces. Morrow’s honeysuckle was not found during 2018 NNIS monitoring, which indicates that the single occurrence observed during 2017 monitoring has been exterminated.

As in previous years, reed canary grass was found to be the most abundant invasive species observed at the Wind Farm. The number of occurrences in 2018 is 275, which represents an increase of 22 total occurrences since 2017. Herbicide application commenced in 2014, however as reported previously, the timing of the 2014 application may have been too late in the season to be optimally effective and the following year in 2015, 66 new occurrences were observed. The 2015 application appears to have been more successful according to the monitoring data, and this is believed to explain the relatively small increase in new occurrences in 2016. Similarly, the timing of the 2016 herbicide application appears to have been even more successful as there was a decrease in reed canary grass occurrences found during 2017 monitoring. In 2018 the large populations (greater than 100 stems each) saw an increase of 38 occurrences (see Figure 1 below). There was also an increase in mid-size populations (between 21 and 100 stems), and an observed decline in small (less than 20 stems) populations. VHB did not observe any reed canary grass dispersion into the adjacent woodland near existing occurrences.



**Figure 1.** Year to year summary of non-native invasive species for most abundant species observed at the KCW Wind Farm location. Note the moderating (2014 to 2016) and decreasing (2017) trend in overall new occurrences since herbicide application commenced in summer, 2014. In 2018 there was a slight increase in all species except spotted knapweed, although the total number of occurrences is still less than the maximum observed in 2016.



**Figure 2.** Six-year summary of *Phalaris arundinacea* occurrences and stem counts at the KCW Wind Farm location.

Spotted knapweed was found in 153 locations during 2018, which is slightly less than to the 165 occurrences mapped during 2017 monitoring. The population of spotted knapweed appears to be stabilizing, most likely attributed to timely herbicide application. Similar to monitoring data on reed canary grass, more than half of the spotted knapweed occurrences in 2018 (92) have a population size greater than 20 stems. Spotted knapweed was largely found along the sides of the access road, in roadside ditches, and other disturbed stony areas. During 2018, VHB observed that approximately 38 percent of the spotted knapweed occurrences were found along the access road. Although continuing to persist along the access road, VHB did not observe any spotted knapweed occurrences within adjacent woodland areas, during 2018.

Small occurrences (less than 20 stems) of the Watch List species reed canary grass and spotted knapweed have declined by 106 total occurrences since 2016, and medium sized occurrences (between 21 and 100 stems) have been declining since 2015. There has been an increase in larger occurrences (greater than 100 stems) of reed canary grass with an increase in 2018 of 92 percent and the number of large populations of spotted knapweed increasing by 30 percent. Of those larger populations which have increased, the access road is an area where new occurrences are most common. The spread and growth of invasive species at these locations may be due to the relatively high amount of vehicular activity (at least with respect to the area between Vermont Route 100 and the Operations Building), as well as ongoing mowing and disturbance of vegetation along the access road. Conversely, invasive species along the crane path and turbine pad slopes appear to be declining.

The maps provided in Attachment 1 include symbols that categorize invasive plant occurrences by their species and approximate stem count. Details of the individual occurrences, including control treatment(s) applied during the



applicable monitoring year and recommendations for future monitoring or control are included in Attachment 2. Table 1 above summarizes the Year 1 through Year 6 occurrences by species. A selection of photographs depicting representative conditions of invasive plant populations is provided in Attachment 3.

#### **ASSESSMENT AND MANAGEMENT RECOMMENDATIONS**

Overall, the presence of Class B noxious weeds within the Project area remains low. During 2018, Watch List species have increased overall and are still present in higher numbers along the access road, crane path, and transmission corridor. Because the observed locations of both Class B and Watch List invasive plants have remained localized and confined to disturbed areas as described above, VHB concludes that they do not presently pose a threat to surrounding undisturbed forested areas. In addition, as shown in Figure 1, it appears that the new occurrences suggest that herbicide applications and hand removal carried out in 2014 through 2017 were effective. In 2018, the increase in populations is minimal, however it is an increase and give reason to reconsider existing practices and opportunities for alternative managements.

During the Project design phase, the KCW access road was located in the same alignment and in close proximity to existing logging roads. This design decision was made in part so that overall Project disturbance would be minimized, including the spread of existing or introduction of new invasive plants. Thorough field investigation during the 2018 monitoring confirmed that invasive plants are not spreading into the undisturbed forest areas surrounding Project developments. Future monitoring and control, as necessary, should be carried out to prevent further spread with a special focus on those invasive species occurrences that encroach close to the edge or into the adjacent undisturbed forestland.

Only two Class B noxious weeds were observed, and as described above all Noxious Weeds are present in generally low abundance: purple loosestrife, and common reed. The total population of purple loosestrife has increased since 2017, however in years prior the population was relatively stable. It is noted that perhaps not enough time has passed to assess whether the existing control methods of herbicide and hand removal are effective as a means of long term control of this species. An increase in common reed occurrences was identified during the 2018 monitoring season but no Morrow's honeysuckle occurrences were found this year. Continued control methods as described in the monitoring summary table in Attachment 2 should be employed to control the spread of Class B noxious weeds present on site.

GMP has agreed to evaluate management approaches for Class B noxious weed species as well as Vermont Invasive Species Watch List species on an annual basis. Coincident with the 2017 monitoring recommendations, VHB recommended consideration of herbicide application to combat both the Class B noxious weeds and the Watch List plants in 2018. VHB's recommendation was to apply herbicide as the preferred control method, which is consistent with recommendations made between 2014 and 2017. However, in 2016, 2017, and 2018 invasive plants within the transmission line corridor could not be treated with herbicide as performed in 2014 and 2015 because the current Utility Herbicide Permit issued by the State of Vermont to GMP does not allow for the application of herbicide for reasons other than safety and reliability. As was done in 2016 and 2017, GMP contracted field crews from the Vermont Youth Conservation Corps who, under the supervision of VHB scientists, manually removed the seed heads from all invasive plant occurrences within the Project's transmission corridor (see the map set, Attachment 1). All seed head materials were bagged and removed for proper disposal in an off-site location.



## Memorandum

For all of the invasive species occurrences not in the transmission line corridor, Vegetation Control Services ("VCS") was contracted by GMP to apply herbicide to plants identified by VHB as shown on the invasive species mapping in Attachment 1. Herbicide application was carried out between August 2 and August 3, 2018, shortly after VHB's monitoring data collection was completed. VCS was aware of the restriction to not apply herbicide within 50 feet of a mapped wetland or stream. According to VCS records, a total of 65 gallons of mixture of Milestone and Rodeo was applied to VHB-flagged invasive plant occurrences across the Project area (except for the transmission corridor), including the restored logging roads (see Attachment 1).<sup>5</sup> During 2017 season 57.5 gallons of mixture was applied to NNIS per VCS records. VHB understands that the spray reports for the 2018 herbicide application were sent to the Vermont Agency of Agriculture, Food and Markets ("AAFM") as required by state law.

Overall, VHB recommends that GMP continue to prioritize the control of Noxious Weeds. These are the species that have already been recognized for their aggressive and destructive potential by including them on the Class B list, and the current populations are still small and localized, making the possibility of eradication or control down to extremely low rate of occurrence is feasible, efficient, and minimizes the use of herbicides. The number of large populations of Class B Noxious Weeds have grown in size since the 2017 season, to inhibit continued growth VHB recommends that GMP consider using multiple control treatments within the growing season. Where possible (anticipated along the access road), live plants could be cut or mowed when in early flower, followed by an herbicide application later in the summer. In this way, the below-ground energy store of existing occurrences is depleted while also maximizing efficiency of a single herbicide application. This control strategy may be feasible along the access road and certain portions of the crane path, however is not anticipated to be feasible on rock fill and turbine pad slopes. In such steeply sloped or less accessible areas, VHB recommends that GMP consider two herbicide applications. VHB suggests the annual monitoring to take place at least two weeks after the initial spray application to account for any occurrences that may have survived the initial treatment. The first application in the summer of 2019 will use the 2018 map to locate any surviving populations.

Though 2018 represents Year 6 of monitoring, per the Plan, GMP may only suspend monitoring with three successive years with no invasive species observed. As this has not transpired, VHB recommends that annual invasive plant monitoring and reporting should continue in 2019. Any herbicide treatment necessary in 2019 should be conducted by a licensed applicator, as it has been in the previous years of application of herbicide at KCW. As previously mentioned, per conditions set forth in the Plan, the Agency of Natural Resources must approve any proposed herbicide application within 50 feet of a wetland or stream.

The recommended Year 7 (2019) monitoring should be conducted in an appropriate timeframe in order to monitor invasive species in a timely manner. If GMP decides to implement the split-treatment recommended above, then it would be assumed that areas of the access road and crane path corridor would be mowed and so would not warrant the need for pre-mowing inventory or flagging. VHB recommends that the annual monitoring occur at least two weeks after mowing (or other initial control measure) to allow for regrowth and proper enumeration of NNIS populations.

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<sup>5</sup> This volume of herbicide includes that applied on the Logging Roads, reported under separate cover.



GMP will continue to coordinate with the Vermont Pesticide Advisory Council, the Vermont Agency of Agriculture, and ANR, as necessary and appropriate during 2019 in a similar manner to the annual coordination and reporting undertaken during the Year 1 through Year 6 invasive plant monitoring.

VHB concludes that GMP has met the terms of the Project's CPG as it relates to invasive plant monitoring and reporting described in the Plan. On behalf of GMP, VHB has conducted six consecutive years of invasive plant monitoring within the Wind Farm (as well as logging roads, described under separate cover) commencing the first full growing season after construction and ending after the 2018, or Year 6 monitoring. Per the Plan, monitoring and control activities will continue until there are three consecutive years with no invasive species detected. As an additional measure of due diligence, VHB recommends that GMP continue to monitor and control invasive plants in accordance with provisions of the Plan.

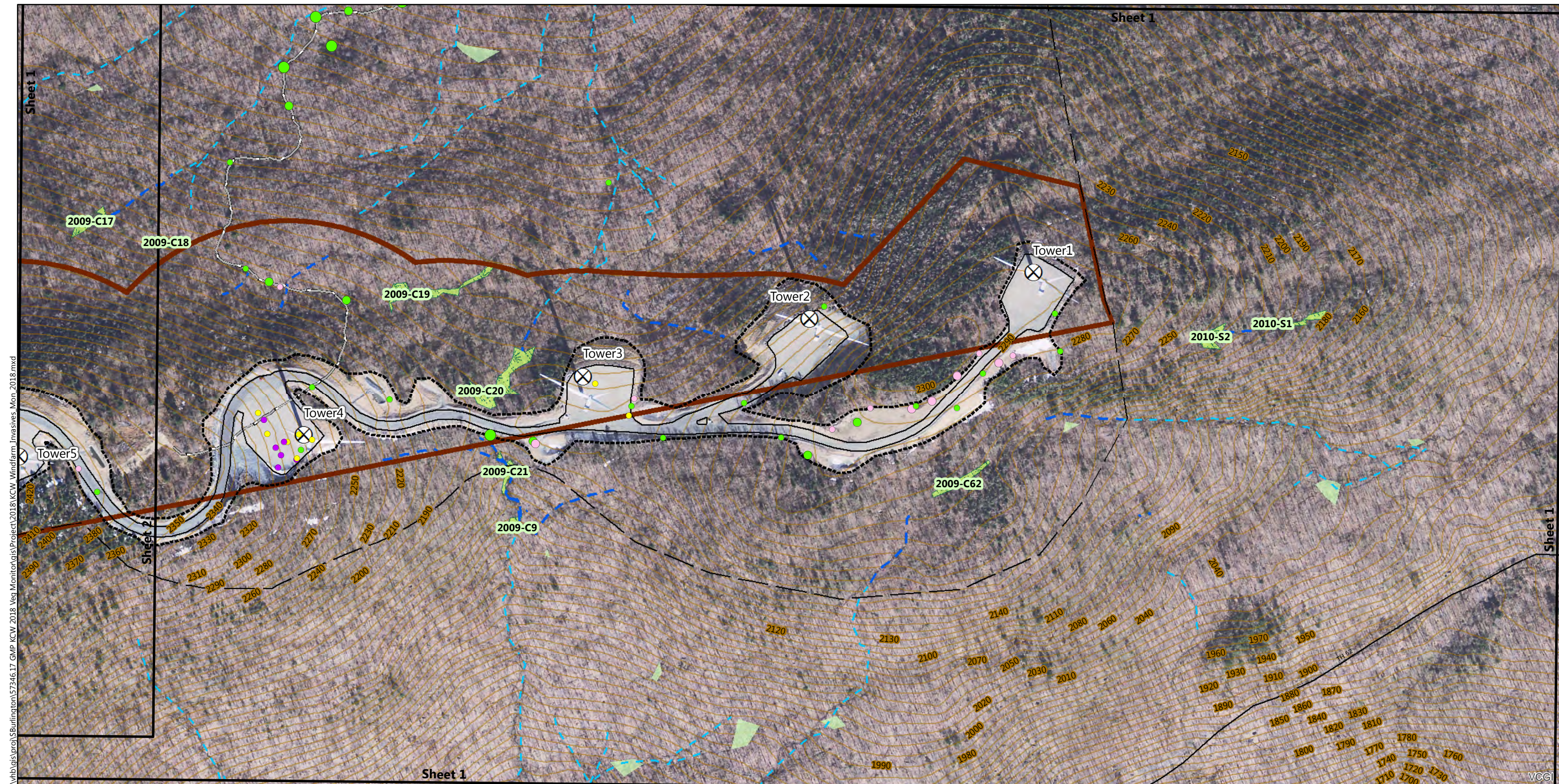
**ATTACHMENT**

- Attachment 1: Wind Farm Invasive Species Monitoring Map set
- Attachment 2: Invasive Vegetation Monitoring Summary
- Attachment 3: Invasive Vegetation Monitoring Photographs



# **ATTACHMENT 1**

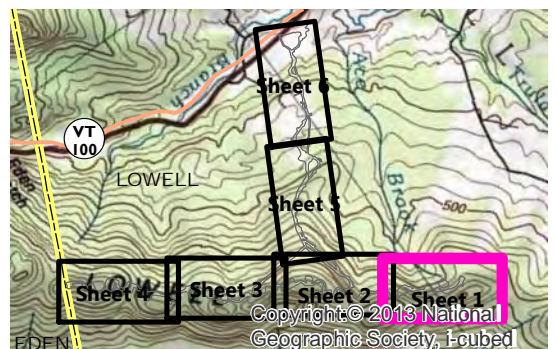




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| <ul style="list-style-type: none"> <li> Project Boundary (VHB)</li> <li> Mitigation Parcel</li> <li> Forest Road (VHB)</li> <li> Road Surface</li> <li> Landing</li> <li> As Built - Limits of Clearing (Horizon)</li> <li> As Built - Edge of Gravel (Horizon)</li> </ul> | <ul style="list-style-type: none"> <li> Tower Location (K&amp;L)</li> <li> Recon Stream (VHB)</li> <li> Delineated Stream (VHB)</li> <li> Recon Wetland (VHB)</li> <li> Delineated Wetland (VHB)</li> <li> Wetland Continues (VHB)</li> <li> 10 ft. Contour</li> </ul> | <p>2018 Invasive Species Locations (VHB)</p> <ul style="list-style-type: none"> <li> Centaurea stoebe, 1 to 20</li> <li> Centaurea stoebe, 21 to 100</li> <li> Centaurea stoebe, Greater than 100</li> <li> Lythrum salicaria, 1 to 20</li> <li> Lythrum salicaria, 21 to 100</li> <li> Phalaris arundinacea, 1 to 20</li> <li> Phalaris arundinacea, 21 to 100</li> </ul> | <ul style="list-style-type: none"> <li> Phalaris arundinacea, Greater than 100</li> <li> Phragmites australis, 1 to 20</li> <li> Phragmites australis, 21 to 100</li> <li> Phragmites australis, Greater than 100</li> <li> Sheet Index (VHB)</li> </ul> |
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### Kingdom Community Wind

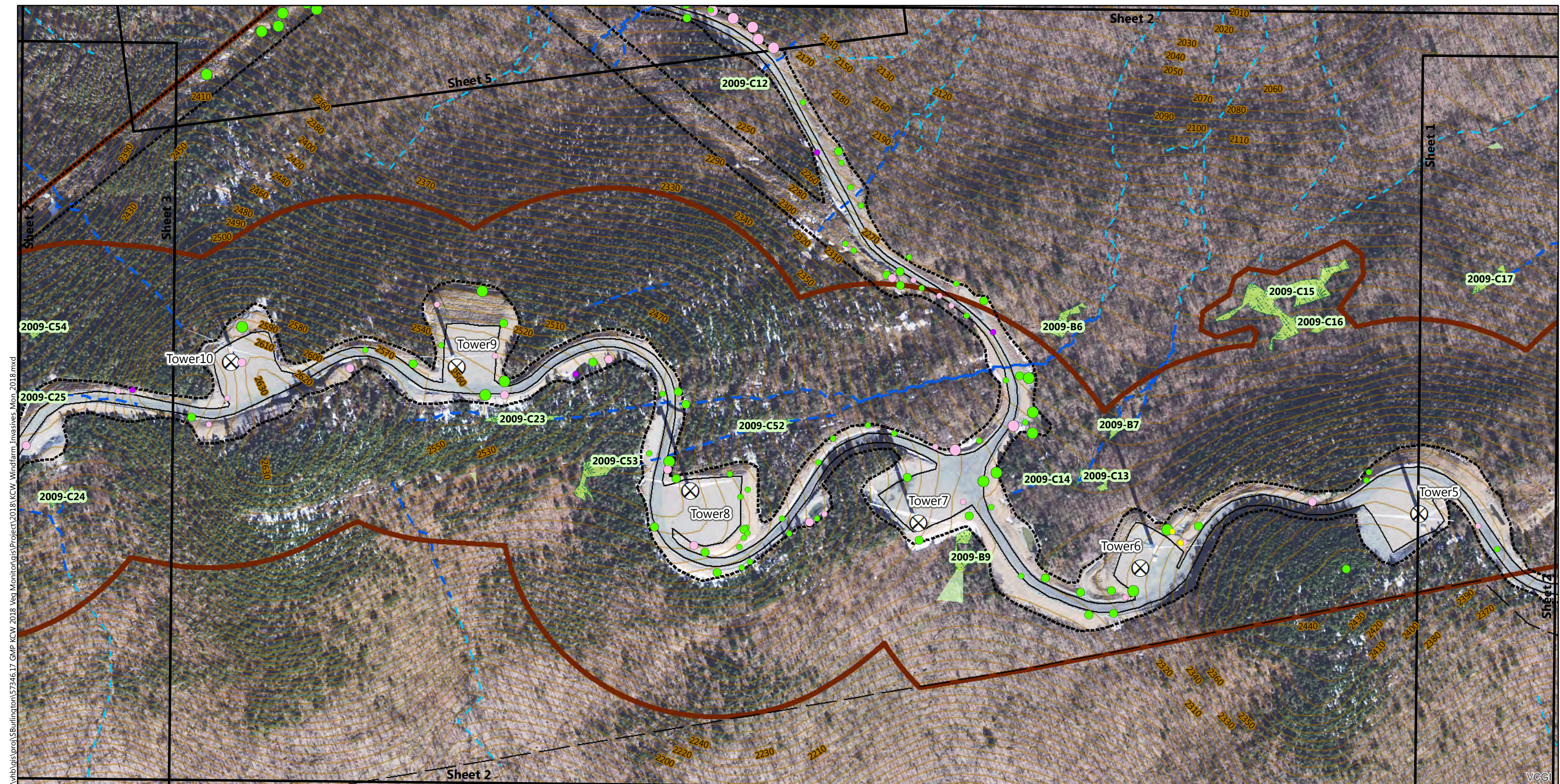
Lowell, Vermont

Sources:  
 Background imagery provided by VCGI (Collected in 2014)  
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 K&L (Krebs and Lansing - 2011)  
 VTrans (2015)  
 VHB - 2011-2018

### Windfarm 2018 Invasive Species Monitoring

Sheet Number 1 of 6





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### Kingdom Community Wind

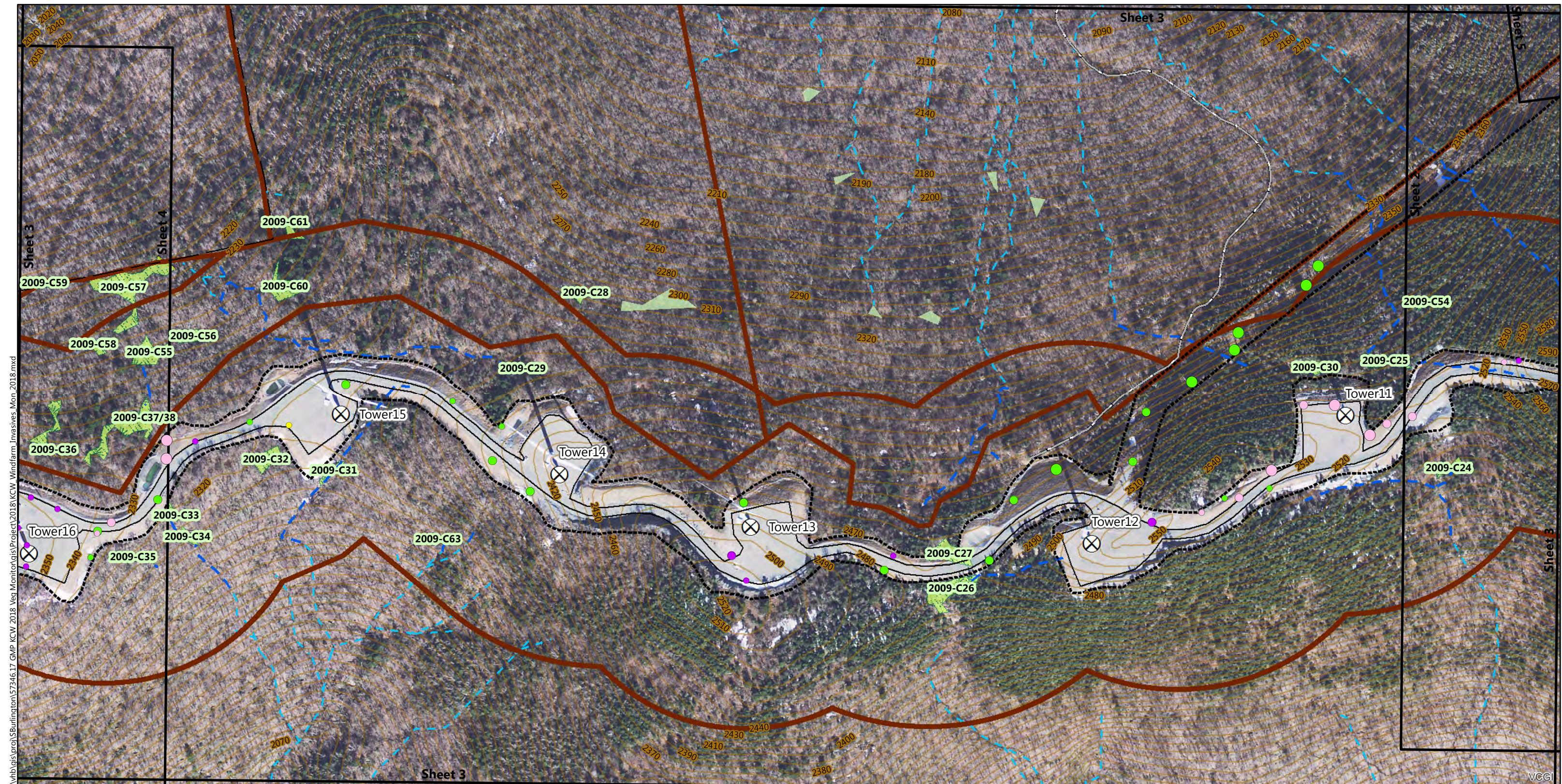
Lowell, Vermont

Sources:  
 Background imagery provided by VCGI (Collected in 2014)  
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 VTrans (2015)  
 VHB - 2011-2018

## Windfarm 2018 Invasive Species Monitoring

Sheet Number 2 of 6

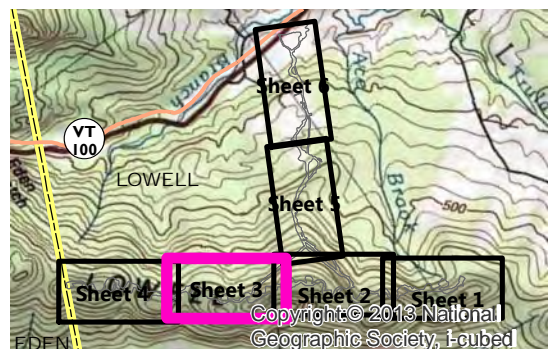




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### Kingdom Community Wind

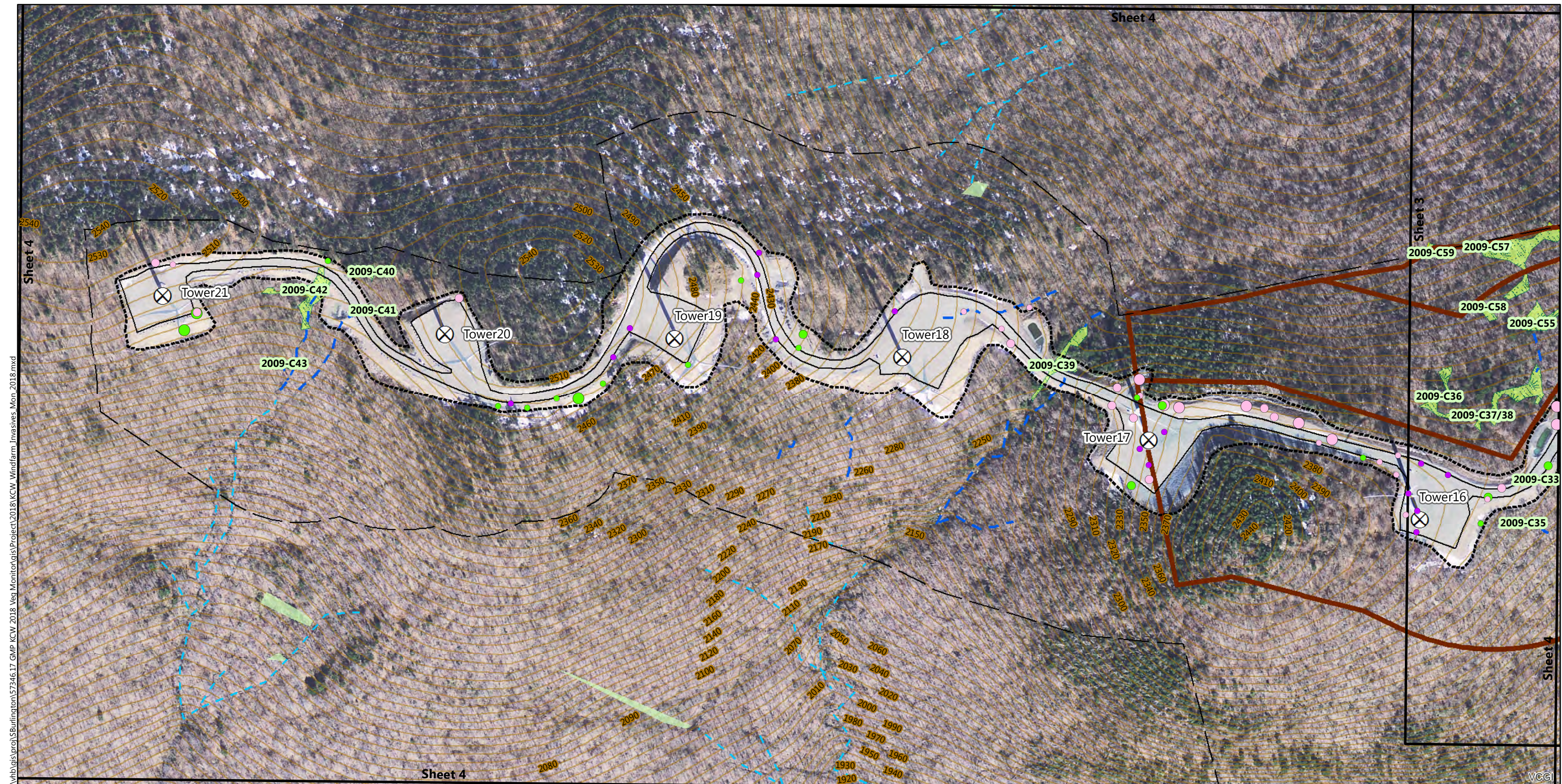
Lowell, Vermont

Sources:  
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 VTrans (2015)  
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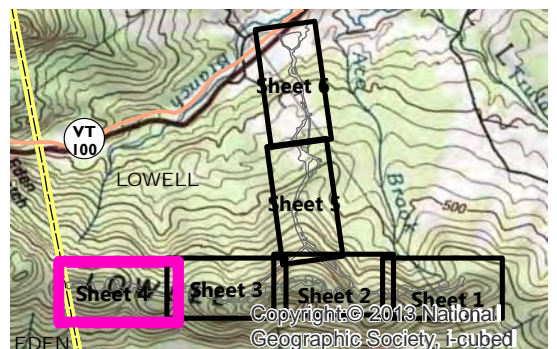
## Windfarm 2018 Invasive Species Monitoring

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- Project Boundary (VHB)
- Mitigation Parcel
- Forest Road (VHB)
- Road Surface
- Landing
- As Built - Limits of Clearing (Horizon)
- As Built - Edge of Gravel (Horizon)
- Tower Location (K&L)
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**Kingdom Community Wind**

Lowell, Vermont

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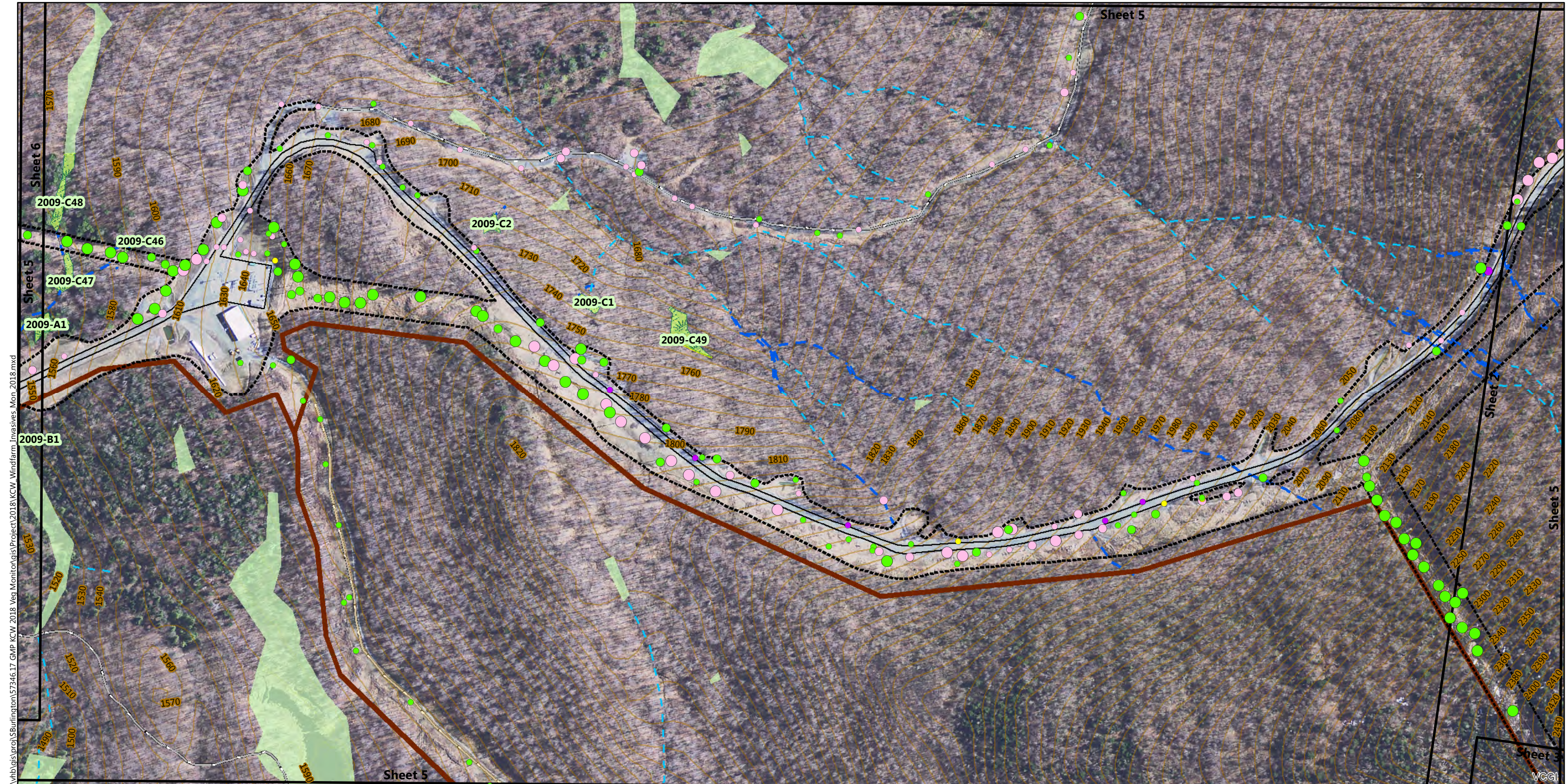
**Windfarm  
 2018 Invasive Species Monitoring**

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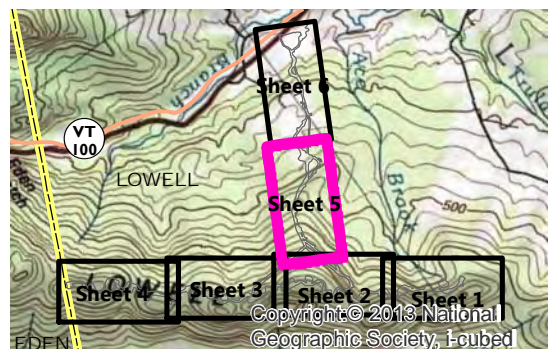




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| <ul style="list-style-type: none"> <li> Project Boundary (VHB)</li> <li> Mitigation Parcel</li> <li> Forest Road (VHB)</li> <li> Road Surface</li> <li> Landing</li> <li> As Built - Limits of Clearing (Horizon)</li> <li> As Built - Edge of Gravel (Horizon)</li> </ul> | <ul style="list-style-type: none"> <li> Tower Location (K&amp;L)</li> <li> Recon Stream (VHB)</li> <li> Delineated Stream (VHB)</li> <li> Recon Wetland (VHB)</li> <li> Delineated Wetland (VHB)</li> <li> Wetland Continues (VHB)</li> <li> 10 ft. Contour</li> </ul> | <p>2018 Invasive Species Locations (VHB)</p> <ul style="list-style-type: none"> <li> Centaurea stoebe, 1 to 20</li> <li> Centaurea stoebe, 21 to 100</li> <li> Centaurea stoebe, Greater than 100</li> <li> Lythrum salicaria, 1 to 20</li> <li> Lythrum salicaria, 21 to 100</li> <li> Phalaris arundinacea, 1 to 20</li> <li> Phalaris arundinacea, 21 to 100</li> </ul> | <ul style="list-style-type: none"> <li> Phalaris arundinacea, Greater than 100</li> <li> Phragmites australis, 1 to 20</li> <li> Phragmites australis, 21 to 100</li> <li> Phragmites australis, Greater than 100</li> <li> Sheet Index (VHB)</li> </ul> |
|--|--|--|--|



### Kingdom Community Wind

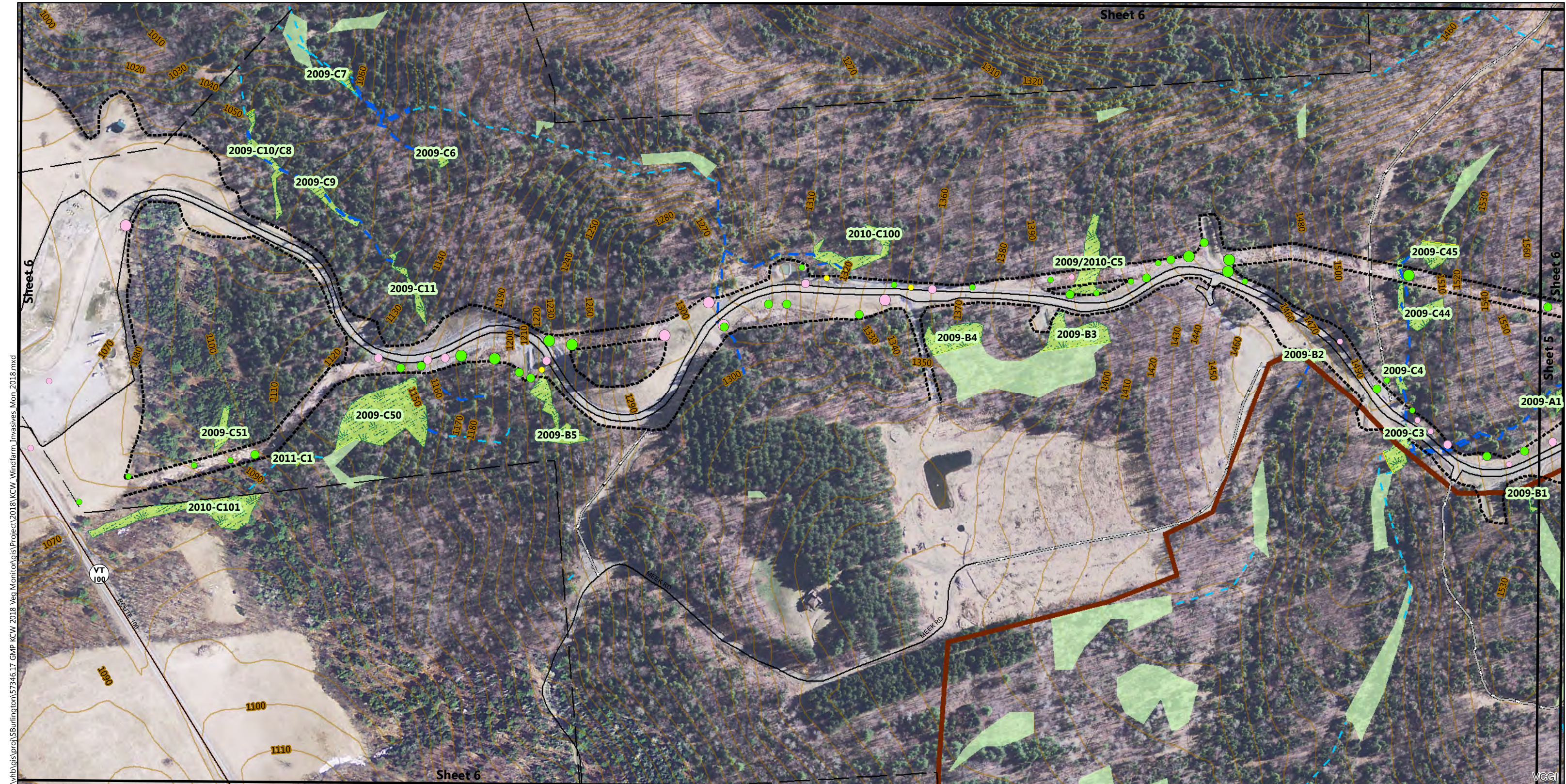
Lowell, Vermont

Sources:  
 Background imagery provided by VCGI (Collected in 2014)  
 Horizons/Blais - 2011  
 K&L (Krebs and Lansing - 2011)  
 VTrans (2015)  
 VHB - 2011-2018

### Windfarm 2018 Invasive Species Monitoring

Sheet Number 5 of 6

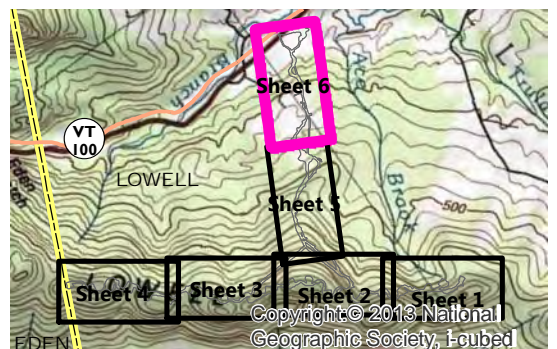




\\vhb\gis\proj\SBurlington\57346\17 GMP\_KCW\_2018 Veg Monitor\gis\Project\2018\KCW\_Windfarm\_Invasives\_Mon\_2018.mxd



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|--|--|--|--|
| <ul style="list-style-type: none"> <li> Project Boundary (VHB)</li> <li> Mitigation Parcel</li> <li> Forest Road (VHB)</li> <li> Road Surface</li> <li> Landing</li> <li> As Built - Limits of Clearing (Horizon)</li> <li> As Built - Edge of Gravel (Horizon)</li> </ul> | <ul style="list-style-type: none"> <li> Tower Location (K&amp;L)</li> <li> Recon Stream (VHB)</li> <li> Delineated Stream (VHB)</li> <li> Recon Wetland (VHB)</li> <li> Delineated Wetland (VHB)</li> <li> Wetland Continues (VHB)</li> <li> 10 ft. Contour</li> </ul> | <p>2018 Invasive Species Locations (VHB)</p> <ul style="list-style-type: none"> <li> Centaurea stoebe, 1 to 20</li> <li> Centaurea stoebe, 21 to 100</li> <li> Centaurea stoebe, Greater than 100</li> <li> Lythrum salicaria, 1 to 20</li> <li> Lythrum salicaria, 21 to 100</li> <li> Phalaris arundinacea, 1 to 20</li> <li> Phalaris arundinacea, 21 to 100</li> </ul> | <ul style="list-style-type: none"> <li> Phalaris arundinacea, Greater than 100</li> <li> Phragmites australis, 1 to 20</li> <li> Phragmites australis, 21 to 100</li> <li> Phragmites australis, Greater than 100</li> <li> Sheet Index (VHB)</li> </ul> |
|--|--|--|--|



### Kingdom Community Wind

Lowell, Vermont

Sources:  
 Background imagery provided by VCGI (Collected in 2014)  
 Horizons/Blais - 2011  
 K&L (Krebs and Lansing - 2011)  
 VTrans (2015)  
 VHB - 2011-2018

### Windfarm 2018 Invasive Species Monitoring

Sheet Number 6 of 6



# **ATTACHMENT 2**



**Wind Farm Invasive Vegetation Monitoring Summary**

GMP Kingdom Community Wind Project

Year 6 (2018) Monitoring Results

Prepared by: VHB

Survey Date(s): July 13, 2018 - July 18 2018

Date: December 12, 2018

Unique Identification <sup>1</sup>	Species	Vermont Noxious Weed Classification <sup>2</sup>	Latitude <sup>3</sup>	Longitude <sup>3</sup>	Colony Size (Approximate # of Stems) <sup>4</sup>	Woodland Dispersal? <sup>5</sup>	2018 Treatment Activity	Recommendations
2018-CJS-47	Centaurea stoebe	NA	44.733422	-72.445349	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-1	Centaurea stoebe	NA	44.753339	-72.423623	B	No	Herbicide applied	Monitor 2019
ADL-CEST5-8	Centaurea stoebe	NA	44.757917	-72.417386	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-100	Centaurea stoebe	NA	44.753048	-72.423379	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-101	Centaurea stoebe	NA	44.752312	-72.424273	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-102	Centaurea stoebe	NA	44.751153	-72.424542	B	No	Herbicide applied	Monitor 2019
ADL-CEST8-103	Centaurea stoebe	NA	44.750973	-72.424558	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-104	Centaurea stoebe	NA	44.75088	-72.425116	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-105	Centaurea stoebe	NA	44.750664	-72.425351	B	No	Herbicide applied	Monitor 2019
ADL-CEST8-106	Centaurea stoebe	NA	44.750088	-72.424947	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-107	Centaurea stoebe	NA	44.749712	-72.424923	B	No	Herbicide applied	Monitor 2019
ADL-CEST8-108	Centaurea stoebe	NA	44.749366	-72.425056	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-111	Centaurea stoebe	NA	44.74244	-72.433546	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-112	Centaurea stoebe	NA	44.742342	-72.433367	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-113	Centaurea stoebe	NA	44.741613	-72.433152	B	No	Herbicide applied	Monitor 2019
ADL-CEST8-114	Centaurea stoebe	NA	44.741056	-72.434255	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-115	Centaurea stoebe	NA	44.740675	-72.434908	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-116	Centaurea stoebe	NA	44.740526	-72.435317	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-117	Centaurea stoebe	NA	44.740386	-72.435564	B	No	Herbicide applied	Monitor 2019
ADL-CEST8-118	Centaurea stoebe	NA	44.740366	-72.435727	B	No	Herbicide applied	Monitor 2019
ADL-CEST8-119	Centaurea stoebe	NA	44.740248	-72.43588	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-120	Centaurea stoebe	NA	44.73967	-72.436514	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-121	Centaurea stoebe	NA	44.739766	-72.436374	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-122	Centaurea stoebe	NA	44.739552	-72.436783	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-123	Centaurea stoebe	NA	44.739636	-72.436951	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-124	Centaurea stoebe	NA	44.758456	-72.417187	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-125	Centaurea stoebe	NA	44.758791	-72.422747	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-126	Centaurea stoebe	NA	44.758725	-72.422945	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-127	Centaurea stoebe	NA	44.758752	-72.423112	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-127	Centaurea stoebe	NA	44.758555	-72.423574	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-128	Centaurea stoebe	NA	44.758662	-72.423341	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-13	Centaurea stoebe	NA	44.75833	-72.414642	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-130	Centaurea stoebe	NA	44.75793	-72.42486	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-130	Centaurea stoebe	NA	44.75791	-72.425636	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-131	Centaurea stoebe	NA	44.757822	-72.428788	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-132	Centaurea stoebe	NA	44.758048	-72.430241	B	No	Herbicide applied	Monitor 2019
ADL-CEST8-133	Centaurea stoebe	NA	44.758053	-72.430571	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-134	Centaurea stoebe	NA	44.758216	-72.431048	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-135	Centaurea stoebe	NA	44.758256	-72.431219	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-136	Centaurea stoebe	NA	44.759421	-72.433136	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-15	Centaurea stoebe	NA	44.759042	-72.414746	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-16	Centaurea stoebe	NA	44.760165	-72.414183	B	No	Herbicide applied	Monitor 2019
ADL-CEST8-18	Centaurea stoebe	NA	44.768189	-72.407065	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-19	Centaurea stoebe	NA	44.767911	-72.407007	B	No	Herbicide applied	Monitor 2019
ADL-CEST8-20	Centaurea stoebe	NA	44.767599	-72.406944	B	No	Herbicide applied	Monitor 2019
ADL-CEST8-200	Centaurea stoebe	NA	44.759858	-72.433765	B	No	Herbicide applied	Monitor 2019
ADL-CEST8-201	Centaurea stoebe	NA	44.76122	-72.434603	A	No	Herbicide applied	Monitor 2019
ADL-CEST8-202	Centaurea stoebe	NA	44.761429	-72.434726	C	No	Herbicide applied	Monitor 2019
ADL-CEST8-3	Centaurea stoebe	NA	44.755779	-72.419358	B	No	Herbicide applied	Monitor 2019
ADL-CEST8-5	Centaurea stoebe	NA	44.755557	-72.418405	B	No	Herbicide applied	Monitor 2019
Cest -cjs-3	Centaurea stoebe	NA	44.758392	-72.419565	B	No	Herbicide applied	Monitor 2019
Cest-cjs-12	Centaurea stoebe	NA	44.757792	-72.417568	A	No	Herbicide applied	Monitor 2019
cest-cjs-130	Centaurea stoebe	NA	44.769226	-72.452318	B	No	Herbicide applied	Monitor 2019
cest-cjs-131	Centaurea stoebe	NA	44.769167	-72.452119	B	No	Herbicide applied	Monitor 2019
cest-cjs-131	Centaurea stoebe	NA	44.768705	-72.451041	B	No	Herbicide applied	Monitor 2019
cest-cjs-134	Centaurea stoebe	NA	44.768386	-72.449607	C	No	Herbicide applied	Monitor 2019
cest-cjs-135	Centaurea stoebe	NA	44.768445	-72.448935	C	No	Herbicide applied	Monitor 2019

**Wind Farm Invasive Vegetation Monitoring Summary**

GMP Kingdom Community Wind Project

Year 6 (2018) Monitoring Results

Prepared by: VHB

Survey Date(s): July 13, 2018 - July 18 2018

Date: December 12, 2018

Unique Identification <sup>1</sup>	Species	Vermont Noxious Weed Classification <sup>2</sup>	Latitude <sup>3</sup>	Longitude <sup>3</sup>	Colony Size (Approximate # of Stems) <sup>4</sup>	Woodland Dispersal? <sup>5</sup>	2018 Treatment Activity	Recommendations
cest-cjs-136	Centaurea stoebe	NA	44.768209	-72.448908	C	No	Herbicide applied	Monitor 2019
cest-cjs-138	Centaurea stoebe	NA	44.767698	-72.447014	C	No	Herbicide applied	Monitor 2019
cest-cjs-139	Centaurea stoebe	NA	44.763814	-72.438426	C	No	Herbicide applied	Monitor 2019
cest-cjs-140	Centaurea stoebe	NA	44.76384	-72.438211	C	No	Herbicide applied	Monitor 2019
cest-cjs-141	Centaurea stoebe	NA	44.764052	-72.437682	B	No	Herbicide applied	Monitor 2019
cest-cjs-142	Centaurea stoebe	NA	44.764215	-72.437258	B	No	Herbicide applied	Monitor 2019
cest-cjs-143	Centaurea stoebe	NA	44.763851	-72.437919	A	No	Herbicide applied	Monitor 2019
cest-cjs-144	Centaurea stoebe	NA	44.763784	-72.438116	A	No	Herbicide applied	Monitor 2019
cest-cjs-145	Centaurea stoebe	NA	44.763575	-72.438909	B	No	Herbicide applied	Monitor 2019
cest-cjs-146	Centaurea stoebe	NA	44.763672	-72.440236	A	No	Herbicide applied	Monitor 2019
cest-cjs-147	Centaurea stoebe	NA	44.763702	-72.440663	B	No	Herbicide applied	Monitor 2019
cest-cjs-148	Centaurea stoebe	NA	44.763721	-72.441271	A	No	Herbicide applied	Monitor 2019
cest-cjs-149	Centaurea stoebe	NA	44.764138	-72.441813	B	No	Herbicide applied	Monitor 2019
Cest-cjs-15	Centaurea stoebe	NA	44.756646	-72.417736	A	No	Herbicide applied	Monitor 2019
cest-cjs-150	Centaurea stoebe	NA	44.764316	-72.441919	A	No	Herbicide applied	Monitor 2019
cest-cjs-151	Centaurea stoebe	NA	44.764459	-72.441988	A	No	Herbicide applied	Monitor 2019
cest-cjs-152	Centaurea stoebe	NA	44.765402	-72.442346	A	No	Herbicide applied	Monitor 2019
cest-cjs-153	Centaurea stoebe	NA	<Null>	<Null>	A	No	Herbicide applied	Monitor 2019
cest-cjs-154	Centaurea stoebe	NA	44.767576	-72.446433	B	No	Herbicide applied	Monitor 2019
cest-cjs-155	Centaurea stoebe	NA	44.768172	-72.447769	B	No	Herbicide applied	Monitor 2019
Cest-cjs-16	Centaurea stoebe	NA	44.7565	-72.417765	B	No	Herbicide applied	Monitor 2019
Cest-cjs-18	Centaurea stoebe	NA	44.768414	-72.406791	A	No	Herbicide applied	Monitor 2019
Cest-cjs-19	Centaurea stoebe	NA	44.768276	-72.406819	B	No	Herbicide applied	Monitor 2019
Cest-cjs-2	Centaurea stoebe	NA	44.758348	-72.419649	A	No	Herbicide applied	Monitor 2019
Cest-cjs-22	Centaurea stoebe	NA	44.765509	-72.409211	A	No	Herbicide applied	Monitor 2019
Cest-cjs-28	Centaurea stoebe	NA	44.764571	-72.409505	B	No	Herbicide applied	Monitor 2019
Cest-cjs-30	Centaurea stoebe	NA	44.766744	-72.407416	A	No	Herbicide applied	Monitor 2019
Cest-cjs-31	Centaurea stoebe	NA	44.767125	-72.40734	A	No	Herbicide applied	Monitor 2019
Cest-cjs-32	Centaurea stoebe	NA	44.767413	-72.40702	B	No	Herbicide applied	Monitor 2019
Cest-cjs-40	Centaurea stoebe	NA	44.735264	-72.442866	B	No	Herbicide applied	Monitor 2019
Cest-cjs-48	Centaurea stoebe	NA	44.733307	-72.445499	B	No	Herbicide applied	Monitor 2019
Cest-cjs-48	Centaurea stoebe	NA	44.733336	-72.444697	B	No	Herbicide applied	Monitor 2019
Cest-cjs-5	Centaurea stoebe	NA	44.758531	-72.419388	A	No	Herbicide applied	Monitor 2019
Cest-cjs-50	Centaurea stoebe	NA	44.738757	-72.438943	A	No	Herbicide applied	Monitor 2019
Cest-cjs-51	Centaurea stoebe	NA	44.738933	-72.438489	A	No	Herbicide applied	Monitor 2019
Cest-cjs-52	Centaurea stoebe	NA	44.738918	-72.438274	B	No	Herbicide applied	Monitor 2019
Cest-cjs-53	Centaurea stoebe	NA	44.739301	-72.436896	B	No	Herbicide applied	Monitor 2019
Cest-cjs-54	Centaurea stoebe	NA	44.739387	-72.436611	B	No	Herbicide applied	Monitor 2019
Cest-cjs-55	Centaurea stoebe	NA	44.739169	-72.435882	B	No	Herbicide applied	Monitor 2019
Cest-cjs-57	Centaurea stoebe	NA	44.740563	-72.434974	A	No	Herbicide applied	Monitor 2019
Cest-cjs-58	Centaurea stoebe	NA	44.740888	-72.434329	A	No	Herbicide applied	Monitor 2019
Cest-cjs-59	Centaurea stoebe	NA	44.74094	-72.434079	A	No	Herbicide applied	Monitor 2019
Cest-cjs-6	Centaurea stoebe	NA	44.758632	-72.419035	A	No	Herbicide applied	Monitor 2019
Cest-cjs-60	Centaurea stoebe	NA	44.740793	-72.433606	A	No	Herbicide applied	Monitor 2019
Cest-cjs-61	Centaurea stoebe	NA	44.739433	-72.437037	B	No	Herbicide applied	Monitor 2019
Cest-cjs-67	Centaurea stoebe	NA	44.761702	-72.435094	C	No	Herbicide applied	Monitor 2019
Cest-cjs-68	Centaurea stoebe	NA	44.761473	-72.434999	C	No	Herbicide applied	Monitor 2019
Cest-cjs-69	Centaurea stoebe	NA	44.760944	-72.434668	C	No	Herbicide applied	Monitor 2019
Cest-cjs-7	Centaurea stoebe	NA	44.758663	-72.418849	A	No	Herbicide applied	Monitor 2019
Cest-cjs-70	Centaurea stoebe	NA	44.760749	-72.434616	C	No	Herbicide applied	Monitor 2019
Cest-cjs-71	Centaurea stoebe	NA	44.760512	-72.434457	C	No	Herbicide applied	Monitor 2019
Cest-cjs-72	Centaurea stoebe	NA	44.760226	-72.434314	C	No	Herbicide applied	Monitor 2019
Cest-cjs-74	Centaurea stoebe	NA	44.76004	-72.43421	C	No	Herbicide applied	Monitor 2019
Cest-cjs-75	Centaurea stoebe	NA	44.759799	-72.434019	C	No	Herbicide applied	Monitor 2019
Cest-cjs-76	Centaurea stoebe	NA	44.758624	-72.432619	B	No	Herbicide applied	Monitor 2019
cest-cjs-80	Centaurea stoebe	NA	44.771574	-72.454761	C	No	Herbicide applied	Monitor 2019
cest-cjs-81	Centaurea stoebe	NA	44.77071	-72.456541	A	No	Herbicide applied	Monitor 2019

**Wind Farm Invasive Vegetation Monitoring Summary**

GMP Kingdom Community Wind Project

Year 6 (2018) Monitoring Results

Prepared by: VHB

Survey Date(s): July 13, 2018 - July 18 2018

Date: December 12, 2018

Unique Identification <sup>1</sup>	Species	Vermont Noxious Weed Classification <sup>2</sup>	Latitude <sup>3</sup>	Longitude <sup>3</sup>	Colony Size (Approximate # of Stems) <sup>4</sup>	Woodland Dispersal? <sup>5</sup>	2018 Treatment Activity	Recommendations
cest-cjs-82	Centaurea stoebe	NA	44.770273	-72.45715	A	No	Herbicide applied	Monitor 2019
cest-cjs-84	Centaurea stoebe	NA	44.769456	-72.45284	B	No	Herbicide applied	Monitor 2019
Cest-cjs-85	Centaurea stoebe	NA	44.763615	-72.412982	A	No	Herbicide applied	Monitor 2019
Cest-cjs-86	Centaurea stoebe	NA	44.762725	-72.435144	A	No	Herbicide applied	Monitor 2019
Cest-cjs-87	Centaurea stoebe	NA	44.763795	-72.435645	A	No	Herbicide applied	Monitor 2019
Cest-cjs-88	Centaurea stoebe	NA	44.764005	-72.435658	A	No	Herbicide applied	Monitor 2019
Cest-cjs-98	Centaurea stoebe	NA	44.764447	-72.422339	B	No	Herbicide applied	Monitor 2019
JMP-CEST8-1	Centaurea stoebe	NA	44.752774	-72.423258	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-12	Centaurea stoebe	NA	44.755025	-72.421329	B	No	Herbicide applied	Monitor 2019
JMP-CEST8-15	Centaurea stoebe	NA	44.75952	-72.420896	B	No	Herbicide applied	Monitor 2019
JMP-CEST8-24	Centaurea stoebe	NA	44.757694	-72.416814	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-3	Centaurea stoebe	NA	44.754076	-72.422755	B	No	Herbicide applied	Monitor 2019
JMP-CEST8-30	Centaurea stoebe	NA	44.761208	-72.412694	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-36	Centaurea stoebe	NA	44.75137	-72.424409	B	No	Herbicide applied	Monitor 2019
JMP-CEST8-48	Centaurea stoebe	NA	44.741453	-72.433151	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-5	Centaurea stoebe	NA	44.755167	-72.421785	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-50	Centaurea stoebe	NA	44.739245	-72.438483	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-53	Centaurea stoebe	NA	44.757805	-72.425261	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-57	Centaurea stoebe	NA	44.757516	-72.428382	B	No	Herbicide applied	Monitor 2019
JMP-CEST8-58	Centaurea stoebe	NA	44.757536	-72.428527	B	No	Herbicide applied	Monitor 2019
JMP-CEST8-59	Centaurea stoebe	NA	44.757608	-72.42882	B	No	Herbicide applied	Monitor 2019
JMP-CEST8-65	Centaurea stoebe	NA	44.75783	-72.430065	B	No	Herbicide applied	Monitor 2019
JMP-CEST8-67	Centaurea stoebe	NA	44.757885	-72.430358	B	No	Herbicide applied	Monitor 2019
JMP-CEST8-68	Centaurea stoebe	NA	44.757938	-72.430647	C	No	Herbicide applied	Monitor 2019
JMP-CEST8-69	Centaurea stoebe	NA	44.758004	-72.43093	B	No	Herbicide applied	Monitor 2019
JMP-CEST8-7	Centaurea stoebe	NA	44.755031	-72.422731	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-70	Centaurea stoebe	NA	44.758073	-72.431201	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-72	Centaurea stoebe	NA	44.758122	-72.431449	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-73	Centaurea stoebe	NA	44.758217	-72.431749	C	No	Herbicide applied	Monitor 2019
JMP-CEST8-73B	Centaurea stoebe	NA	44.75832	-72.431889	C	No	Herbicide applied	Monitor 2019
JMP-CEST8-74	Centaurea stoebe	NA	44.758449	-72.432324	B	No	Herbicide applied	Monitor 2019
JMP-CEST8-75	Centaurea stoebe	NA	44.758775	-72.432316	B	No	Herbicide applied	Monitor 2019
JMP-CEST8-79	Centaurea stoebe	NA	44.759386	-72.433464	C	No	Herbicide applied	Monitor 2019
JMP-CEST8-82	Centaurea stoebe	NA	44.763818	-72.437843	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-83	Centaurea stoebe	NA	44.763985	-72.437339	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-84	Centaurea stoebe	NA	44.763803	-72.437617	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-84	Centaurea stoebe	NA	44.763687	-72.437633	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-85	Centaurea stoebe	NA	44.763639	-72.437557	A	No	Herbicide applied	Monitor 2019
JMP-CEST8-85	Centaurea stoebe	NA	44.763689	-72.437255	A	No	Herbicide applied	Monitor 2019
ADL-LYSA-1	Lythrum salicaria	B	44.759014	-72.414943	A	No	Herbicide applied	Monitor 2019
ADL-LYSA-1	Lythrum salicaria	B	44.758358	-72.431704	A	No	Herbicide applied	Monitor 2019
ADL-LYSA-2	Lythrum salicaria	B	44.759011	-72.414767	A	No	Herbicide applied	Monitor 2019
JMP-LYSA-46	Lythrum salicaria	B	44.743386	-72.432779	A	No	Herbicide applied	Monitor 2019
JMP-LYSA-60	Lythrum salicaria	B	44.757623	-72.428807	A	No	Herbicide applied	Monitor 2019
JMP-LYSA-62	Lythrum salicaria	B	44.757752	-72.429249	A	No	Herbicide applied	Monitor 2019
Lysa -cjs-9	Lythrum salicaria	B	44.762807	-72.411156	A	No	Herbicide applied	Monitor 2019
Lysa-cjs-1	Lythrum salicaria	B	44.765313	-72.409651	A	No	Herbicide applied	Monitor 2019
Lysa-cjs-10	Lythrum salicaria	B	44.763013	-72.411224	A	No	Herbicide applied	Monitor 2019
Lysa-cjs-11	Lythrum salicaria	B	44.762947	-72.411376	A	No	Herbicide applied	Monitor 2019
Lysa-cjs-12	Lythrum salicaria	B	44.762827	-72.411387	A	No	Herbicide applied	Monitor 2019
Lysa-cjs-13	Lythrum salicaria	B	44.762728	-72.41162	A	No	Herbicide applied	Monitor 2019
Lysa-cjs-13	Lythrum salicaria	B	44.762775	-72.411897	A	No	Herbicide applied	Monitor 2019
Lysa-cjs-2	Lythrum salicaria	B	44.76538	-72.409082	A	No	Herbicide applied	Monitor 2019
lysa-cjs-20	Lythrum salicaria	B	44.768655	-72.451146	A	No	Herbicide applied	Monitor 2019
lysa-cjs-25	Lythrum salicaria	B	44.767681	-72.446654	A	No	Herbicide applied	Monitor 2019
lysa-cjs-26	Lythrum salicaria	B	44.768121	-72.447512	A	No	Herbicide applied	Monitor 2019
Lysa-cjs-4	Lythrum salicaria	B	44.763491	-72.437371	A	No	Herbicide applied	Monitor 2019

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Unique Identification <sup>1</sup>	Species	Vermont Noxious Weed Classification <sup>2</sup>	Latitude <sup>3</sup>	Longitude <sup>3</sup>	Colony Size (Approximate # of Stems) <sup>4</sup>	Woodland Dispersal? <sup>5</sup>	2018 Treatment Activity	Recommendations
2018-phar-7	Phalaris arundinacea	NA	44.75151	-72.426622	C	No	Removed and bagged to dispose	Monitor 2019
ADL-PHAR-1	Phalaris arundinacea	NA	44.749606	-72.425026	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-1	Phalaris arundinacea	NA	44.753533	-72.423977	C	No	Herbicide applied	Monitor 2019
ADL-PHAR-10	Phalaris arundinacea	NA	44.739521	-72.436787	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-10	Phalaris arundinacea	NA	44.755994	-72.418185	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-100	Phalaris arundinacea	NA	44.759691	-72.433544	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-101	Phalaris arundinacea	NA	44.76004	-72.433807	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-102	Phalaris arundinacea	NA	44.760118	-72.433958	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-103	Phalaris arundinacea	NA	44.760501	-72.434167	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-104	Phalaris arundinacea	NA	44.761279	-72.434439	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-105	Phalaris arundinacea	NA	44.76148	-72.434607	C	No	Herbicide applied	Monitor 2019
ADL-PHAR-106	Phalaris arundinacea	NA	44.76139	-72.434665	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-11	Phalaris arundinacea	NA	44.756	-72.418126	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-11	Phalaris arundinacea	NA	44.758086	-72.416851	C	No	Herbicide applied	Monitor 2019
ADL-PHAR-12	Phalaris arundinacea	NA	44.755598	-72.418255	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-12	Phalaris arundinacea	NA	44.76033	-72.413209	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-13	Phalaris arundinacea	NA	44.758562	-72.417134	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-14	Phalaris arundinacea	NA	44.755869	-72.418049	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-14	Phalaris arundinacea	NA	44.758554	-72.416968	C	No	Herbicide applied	Monitor 2019
ADL-PHAR-15	Phalaris arundinacea	NA	44.755953	-72.418105	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-15	Phalaris arundinacea	NA	44.758669	-72.417177	C	No	Herbicide applied	Monitor 2019
ADL-PHAR-16	Phalaris arundinacea	NA	44.756324	-72.41801	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-16	Phalaris arundinacea	NA	44.75877	-72.417637	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-17	Phalaris arundinacea	NA	44.756884	-72.418293	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-17	Phalaris arundinacea	NA	44.757114	-72.418419	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-17	Phalaris arundinacea	NA	44.758825	-72.417546	C	No	Herbicide applied	Monitor 2019
ADL-PHAR-18	Phalaris arundinacea	NA	44.757572	-72.418008	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-18	Phalaris arundinacea	NA	44.758919	-72.418651	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-19	Phalaris arundinacea	NA	44.758821	-72.419031	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-19	Phalaris arundinacea	NA	44.758816	-72.419026	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-2	Phalaris arundinacea	NA	44.754545	-72.422324	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-2	Phalaris arundinacea	NA	44.748571	-72.426577	C	No	Removed and bagged to dispose	Monitor 2019
ADL-PHAR-20	Phalaris arundinacea	NA	44.758624	-72.419649	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-20	Phalaris arundinacea	NA	44.757948	-72.416861	C	No	Herbicide applied	Monitor 2019
ADL-PHAR-21	Phalaris arundinacea	NA	44.757865	-72.416547	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-21	Phalaris arundinacea	NA	44.758561	-72.42052	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-21	Phalaris arundinacea	NA	44.757866	-72.415436	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-22	Phalaris arundinacea	NA	44.758584	-72.420783	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-22	Phalaris arundinacea	NA	44.75804	-72.41503	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-23	Phalaris arundinacea	NA	44.758653	-72.421097	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-23	Phalaris arundinacea	NA	44.758267	-72.414813	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-23	Phalaris arundinacea	NA	44.758419	-72.414643	C	No	Herbicide applied	Monitor 2019
ADL-PHAR-24	Phalaris arundinacea	NA	44.758691	-72.421227	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-25	Phalaris arundinacea	NA	44.758705	-72.421982	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-25	Phalaris arundinacea	NA	44.758989	-72.414998	C	No	Herbicide applied	Monitor 2019
ADL-PHAR-26	Phalaris arundinacea	NA	44.758758	-72.422754	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-26 ADL	Phalaris arundinacea	NA	44.759231	-72.4148	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-27	Phalaris arundinacea	NA	44.758545	-72.423591	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-27	Phalaris arundinacea	NA	44.76066	-72.413989	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-28	Phalaris arundinacea	NA	44.758402	-72.423838	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-28	Phalaris arundinacea	NA	44.760723	-72.414051	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-29	Phalaris arundinacea	NA	44.758187	-72.424391	C	No	Herbicide applied	Monitor 2019
ADL-PHAR-29	Phalaris arundinacea	NA	44.763775	-72.411041	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-3	Phalaris arundinacea	NA	44.748109	-72.42659	B	No	Removed and bagged to dispose	Monitor 2019
ADL-PHAR-3	Phalaris arundinacea	NA	44.755097	-72.421461	C	No	Herbicide applied	Monitor 2019
ADL-PHAR-30	Phalaris arundinacea	NA	44.757779	-72.426714	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-30	Phalaris arundinacea	NA	44.767343	-72.408694	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-31	Phalaris arundinacea	NA	44.757769	-72.428766	A	No	Herbicide applied	Monitor 2019

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ADL-PHAR-32	Phalaris arundinacea	NA	44.758011	-72.429623	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-33	Phalaris arundinacea	NA	44.75823	-72.431087	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-34	Phalaris arundinacea	NA	44.75854	-72.432233	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-35	Phalaris arundinacea	NA	44.75954	-72.433084	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-4	Phalaris arundinacea	NA	44.756268	-72.420048	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-5	Phalaris arundinacea	NA	44.756258	-72.419868	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-5	Phalaris arundinacea	NA	44.755831	-72.419424	C	No	Herbicide applied	Monitor 2019
ADL-PHAR-6	Phalaris arundinacea	NA	44.744884	-72.431166	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-6	Phalaris arundinacea	NA	44.75579	-72.419198	B	No	Herbicide applied	Monitor 2019
ADL-PHAR-7	Phalaris arundinacea	NA	44.756193	-72.418845	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-7	Phalaris arundinacea	NA	44.756236	-72.418555	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-7	Phalaris arundinacea	NA	44.744671	-72.431789	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-8	Phalaris arundinacea	NA	44.756145	-72.418537	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-8	Phalaris arundinacea	NA	44.743126	-72.433104	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-9	Phalaris arundinacea	NA	44.756024	-72.418188	A	No	Herbicide applied	Monitor 2019
ADL-PHAR-9	Phalaris arundinacea	NA	44.739656	-72.436519	B	No	Herbicide applied	Monitor 2019
ADL-PHAU-3	Phalaris arundinacea	NA	44.746184	-72.428593	B	No	Herbicide applied	Monitor 2019
Cest-cjs-20	Phalaris arundinacea	NA	44.768106	-72.406836	A	No	Herbicide applied	Monitor 2019
JMO-PHAR-16	Phalaris arundinacea	NA	44.756146	-72.420145	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-11	Phalaris arundinacea	NA	44.75489	-72.421469	C	No	Herbicide applied	Monitor 2019
JMP-PHAR-14	Phalaris arundinacea	NA	44.755825	-72.420983	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-17	Phalaris arundinacea	NA	44.755735	-72.419656	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-18	Phalaris arundinacea	NA	44.755377	-72.418886	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-2	Phalaris arundinacea	NA	44.752691	-72.423457	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-21	Phalaris arundinacea	NA	44.755573	-72.41796	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-23	Phalaris arundinacea	NA	44.757433	-72.417473	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-25	Phalaris arundinacea	NA	44.757662	-72.416628	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-26	Phalaris arundinacea	NA	44.757177	-72.416761	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-27	Phalaris arundinacea	NA	44.757707	-72.41564	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-28	Phalaris arundinacea	NA	44.757979	-72.414743	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-29	Phalaris arundinacea	NA	44.758159	-72.414571	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-31	Phalaris arundinacea	NA	44.761216	-72.412323	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-32	Phalaris arundinacea	NA	44.763296	-72.411747	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-33	Phalaris arundinacea	NA	44.766261	-72.408342	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-34	Phalaris arundinacea	NA	44.766957	-72.407298	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-4	Phalaris arundinacea	NA	44.754282	-72.422821	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-41	Phalaris arundinacea	NA	44.749977	-72.424786	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-42	Phalaris arundinacea	NA	44.747611	-72.426174	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-42	Phalaris arundinacea	NA	44.746814	-72.426867	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-44	Phalaris arundinacea	NA	44.744738	-72.430309	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-44	Phalaris arundinacea	NA	44.744635	-72.430896	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-45	Phalaris arundinacea	NA	44.744006	-72.432754	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-47	Phalaris arundinacea	NA	44.742061	-72.433025	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-48	Phalaris arundinacea	NA	44.741468	-72.433165	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-49	Phalaris arundinacea	NA	44.741275	-72.432957	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-51	Phalaris arundinacea	NA	44.737502	-72.439925	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-52	Phalaris arundinacea	NA	44.758335	-72.423697	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-54	Phalaris arundinacea	NA	44.757743	-72.425373	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-55	Phalaris arundinacea	NA	44.757564	-72.426935	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-56	Phalaris arundinacea	NA	44.757521	-72.428022	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-6	Phalaris arundinacea	NA	44.754844	-72.422294	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-61	Phalaris arundinacea	NA	44.757635	-72.428803	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-63	Phalaris arundinacea	NA	44.757798	-72.429644	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-66	Phalaris arundinacea	NA	44.757786	-72.429882	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-71	Phalaris arundinacea	NA	44.758197	-72.431584	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-76	Phalaris arundinacea	NA	44.758686	-72.432654	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-77	Phalaris arundinacea	NA	44.75885	-72.432877	A	No	Herbicide applied	Monitor 2019



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JMP-PHAR-78	Phalaris arundinacea	NA	44.759197	-72.433252	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-8	Phalaris arundinacea	NA	44.755401	-72.422043	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-86	Phalaris arundinacea	NA	44.763728	-72.437275	A	No	Herbicide applied	Monitor 2019
JMP-PHAR-87	Phalaris arundinacea	NA	44.763394	-72.437407	B	No	Herbicide applied	Monitor 2019
JMP-PHAR-9	Phalaris arundinacea	NA	44.755424	-72.422524	C	No	Herbicide applied	Monitor 2019
Pha-cjs-103	Phalaris arundinacea	NA	44.758189	-72.431852	A	No	Herbicide applied	Monitor 2019
Phar-cjs-49	Phalaris arundinacea	NA	44.764295	-72.409926	C	No	Herbicide applied	Monitor 2019
Phar-cjs-1	Phalaris arundinacea	NA	44.749155	-72.426075	B	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-10	Phalaris arundinacea	NA	44.755401	-72.426685	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-100	Phalaris arundinacea	NA	44.758882	-72.433135	A	No	Herbicide applied	Monitor 2019
Phar-cjs-101	Phalaris arundinacea	NA	44.75866	-72.432685	A	No	Herbicide applied	Monitor 2019
Phar-cjs-102	Phalaris arundinacea	NA	44.758516	-72.432593	C	No	Herbicide applied	Monitor 2019
Phar-cjs-104	Phalaris arundinacea	NA	44.757694	-72.429762	B	No	Herbicide applied	Monitor 2019
Phar-cjs-105	Phalaris arundinacea	NA	44.757708	-72.429403	B	No	Herbicide applied	Monitor 2019
Phar-cjs-107	Phalaris arundinacea	NA	44.76288	-72.411205	A	No	Herbicide applied	Monitor 2019
Phar-cjs-108	Phalaris arundinacea	NA	44.761861	-72.434882	B	No	Herbicide applied	Monitor 2019
Phar-cjs-109	Phalaris arundinacea	NA	44.76269	-72.435136	A	No	Herbicide applied	Monitor 2019
Phar-cjs-11	Phalaris arundinacea	NA	44.755502	-72.426786	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-111	Phalaris arundinacea	NA	44.763374	-72.435436	A	No	Herbicide applied	Monitor 2019
Phar-cjs-112	Phalaris arundinacea	NA	44.7635	-72.435547	A	No	Herbicide applied	Monitor 2019
Phar-cjs-113	Phalaris arundinacea	NA	44.763749	-72.435636	A	No	Herbicide applied	Monitor 2019
Phar-cjs-114	Phalaris arundinacea	NA	44.763957	-72.435616	A	No	Herbicide applied	Monitor 2019
Phar-cjs-115	Phalaris arundinacea	NA	44.764228	-72.436037	A	No	Herbicide applied	Monitor 2019
Phar-cjs-116	Phalaris arundinacea	NA	44.764333	-72.436637	A	No	Herbicide applied	Monitor 2019
Phar-cjs-12	Phalaris arundinacea	NA	44.755726	-72.426702	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-12	Phalaris arundinacea	NA	44.75563	-72.426857	C	No	Herbicide applied	Monitor 2019
Phar-cjs-13	Phalaris arundinacea	NA	44.755764	-72.426566	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-15	Phalaris arundinacea	NA	44.75593	-72.426782	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-16	Phalaris arundinacea	NA	44.756135	-72.426828	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-17	Phalaris arundinacea	NA	44.756276	-72.426875	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-18	Phalaris arundinacea	NA	44.756352	-72.426768	C	No	Removed and bagged to dispose	Monitor 2019
phar-cjs-180	Phalaris arundinacea	NA	44.769649	-72.456954	A	No	Herbicide applied	Monitor 2019
phar-cjs-181	Phalaris arundinacea	NA	44.769631	-72.456267	A	No	Herbicide applied	Monitor 2019
phar-cjs-182	Phalaris arundinacea	NA	44.76943	-72.455487	A	No	Herbicide applied	Monitor 2019
phar-cjs-183	Phalaris arundinacea	NA	44.769311	-72.455064	A	No	Herbicide applied	Monitor 2019
phar-cjs-184	Phalaris arundinacea	NA	44.769247	-72.454767	B	No	Herbicide applied	Monitor 2019
phar-cjs-184	Phalaris arundinacea	NA	44.769281	-72.45266	B	No	Herbicide applied	Monitor 2019
phar-cjs-184	Phalaris arundinacea	NA	44.769208	-72.452427	B	No	Herbicide applied	Monitor 2019
phar-cjs-185	Phalaris arundinacea	NA	44.768843	-72.450889	C	No	Herbicide applied	Monitor 2019
phar-cjs-186	Phalaris arundinacea	NA	44.768192	-72.448912	B	No	Herbicide applied	Monitor 2019
phar-cjs-186	Phalaris arundinacea	NA	44.769113	-72.451931	C	No	Herbicide applied	Monitor 2019
phar-cjs-186	Phalaris arundinacea	NA	44.768715	-72.450671	C	No	Herbicide applied	Monitor 2019
phar-cjs-187	Phalaris arundinacea	NA	44.768173	-72.448295	B	No	Herbicide applied	Monitor 2019
phar-cjs-187	Phalaris arundinacea	NA	44.768946	-72.451588	C	No	Herbicide applied	Monitor 2019
phar-cjs-188	Phalaris arundinacea	NA	44.768095	-72.448099	B	No	Herbicide applied	Monitor 2019
phar-cjs-189	Phalaris arundinacea	NA	44.768731	-72.451408	B	No	Herbicide applied	Monitor 2019
phar-cjs-189	Phalaris arundinacea	NA	44.767701	-72.44738	B	No	Herbicide applied	Monitor 2019
Phar-cjs-19	Phalaris arundinacea	NA	44.756436	-72.426871	C	No	Removed and bagged to dispose	Monitor 2019
phar-cjs-190	Phalaris arundinacea	NA	44.76742	-72.44599	A	No	Herbicide applied	Monitor 2019
phar-cjs-190	Phalaris arundinacea	NA	44.768638	-72.451318	B	No	Herbicide applied	Monitor 2019
phar-cjs-191	Phalaris arundinacea	NA	44.767136	-72.445099	A	No	Herbicide applied	Monitor 2019
phar-cjs-192	Phalaris arundinacea	NA	44.766797	-72.443834	A	No	Herbicide applied	Monitor 2019
phar-cjs-193	Phalaris arundinacea	NA	44.766767	-72.443675	B	No	Herbicide applied	Monitor 2019
phar-cjs-194	Phalaris arundinacea	NA	44.766713	-72.443459	C	No	Herbicide applied	Monitor 2019
phar-cjs-195	Phalaris arundinacea	NA	44.766754	-72.443213	B	No	Herbicide applied	Monitor 2019
phar-cjs-196	Phalaris arundinacea	NA	44.766512	-72.443047	C	No	Herbicide applied	Monitor 2019
phar-cjs-197	Phalaris arundinacea	NA	44.766512	-72.443047	C	No	Herbicide applied	Monitor 2019

**Wind Farm Invasive Vegetation Monitoring Summary**

GMP Kingdom Community Wind Project

Year 6 (2018) Monitoring Results

Prepared by: VHB

Survey Date(s): July 13, 2018 - July 18 2018

Date: December 12, 2018

Unique Identification <sup>1</sup>	Species	Vermont Noxious Weed Classification <sup>2</sup>	Latitude <sup>3</sup>	Longitude <sup>3</sup>	Colony Size (Approximate # of Stems) <sup>4</sup>	Woodland Dispersal? <sup>5</sup>	2018 Treatment Activity	Recommendations
phar-cjs-198	Phalaris arundinacea	NA	44.765614	-72.441199	C	No	Herbicide applied	Monitor 2019
phar-cjs-199	Phalaris arundinacea	NA	44.764764	-72.439889	B	No	Herbicide applied	Monitor 2019
Phar-cjs-2	Phalaris arundinacea	NA	44.749514	-72.426467	B	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-20	Phalaris arundinacea	NA	44.756599	-72.426855	C	No	Removed and bagged to dispose	Monitor 2019
phar-cjs-200	Phalaris arundinacea	NA	44.764544	-72.439504	C	No	Herbicide applied	Monitor 2019
phar-cjs-201	Phalaris arundinacea	NA	44.764398	-72.439325	C	No	Herbicide applied	Monitor 2019
phar-cjs-202	Phalaris arundinacea	NA	44.764269	-72.4391	C	No	Herbicide applied	Monitor 2019
phar-cjs-203	Phalaris arundinacea	NA	44.764179	-72.438997	C	No	Herbicide applied	Monitor 2019
phar-cjs-204	Phalaris arundinacea	NA	44.764053	-72.438686	B	No	Herbicide applied	Monitor 2019
phar-cjs-205	Phalaris arundinacea	NA	44.763939	-72.43858	B	No	Herbicide applied	Monitor 2019
phar-cjs-206	Phalaris arundinacea	NA	44.763854	-72.438537	C	No	Herbicide applied	Monitor 2019
phar-cjs-207	Phalaris arundinacea	NA	44.763847	-72.438372	C	No	Herbicide applied	Monitor 2019
phar-cjs-208	Phalaris arundinacea	NA	44.763887	-72.43808	C	No	Herbicide applied	Monitor 2019
phar-cjs-209	Phalaris arundinacea	NA	44.764039	-72.437768	C	No	Herbicide applied	Monitor 2019
Phar-cjs-21	Phalaris arundinacea	NA	44.756701	-72.426939	C	No	Removed and bagged to dispose	Monitor 2019
phar-cjs-210	Phalaris arundinacea	NA	44.764171	-72.437292	C	No	Herbicide applied	Monitor 2019
phar-cjs-211	Phalaris arundinacea	NA	44.764302	-72.437121	B	No	Herbicide applied	Monitor 2019
phar-cjs-212	Phalaris arundinacea	NA	44.763732	-72.438737	C	No	Herbicide applied	Monitor 2019
phar-cjs-213	Phalaris arundinacea	NA	44.763645	-72.438966	C	No	Herbicide applied	Monitor 2019
phar-cjs-214	Phalaris arundinacea	NA	44.763641	-72.439213	C	No	Herbicide applied	Monitor 2019
phar-cjs-215	Phalaris arundinacea	NA	44.763757	-72.44102	B	No	Herbicide applied	Monitor 2019
phar-cjs-216	Phalaris arundinacea	NA	44.76388	-72.441458	B	No	Herbicide applied	Monitor 2019
phar-cjs-217	Phalaris arundinacea	NA	44.764556	-72.441986	A	No	Herbicide applied	Monitor 2019
phar-cjs-218	Phalaris arundinacea	NA	44.764878	-72.442238	B	No	Herbicide applied	Monitor 2019
phar-cjs-219	Phalaris arundinacea	NA	44.7649	-72.44208	A	No	Herbicide applied	Monitor 2019
Phar-cjs-22	Phalaris arundinacea	NA	44.756857	-72.426925	C	No	Removed and bagged to dispose	Monitor 2019
phar-cjs-220	Phalaris arundinacea	NA	44.766281	-72.443009	A	No	Herbicide applied	Monitor 2019
phar-cjs-221	Phalaris arundinacea	NA	44.766776	-72.444239	A	No	Herbicide applied	Monitor 2019
phar-cjs-221	Phalaris arundinacea	NA	44.766733	-72.444051	B	No	Herbicide applied	Monitor 2019
phar-cjs-221	Phalaris arundinacea	NA	44.766428	-72.443129	C	No	Herbicide applied	Monitor 2019
phar-cjs-222	Phalaris arundinacea	NA	44.766835	-72.444684	A	No	Herbicide applied	Monitor 2019
phar-cjs-223	Phalaris arundinacea	NA	44.766938	-72.444977	B	No	Herbicide applied	Monitor 2019
phar-cjs-224	Phalaris arundinacea	NA	44.76778	-72.446822	A	No	Herbicide applied	Monitor 2019
phar-cjs-225	Phalaris arundinacea	NA	44.768314	-72.447712	A	No	Herbicide applied	Monitor 2019
Phar-cjs-23	Phalaris arundinacea	NA	44.756997	-72.426921	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-24	Phalaris arundinacea	NA	44.757078	-72.426896	B	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-25	Phalaris arundinacea	NA	44.757212	-72.426831	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-26	Phalaris arundinacea	NA	44.758247	-72.420261	A	No	Herbicide applied	Monitor 2019
Phar-cjs-27	Phalaris arundinacea	NA	44.758269	-72.42013	A	No	Herbicide applied	Monitor 2019
Phar-cjs-28	Phalaris arundinacea	NA	44.758371	-72.419639	B	No	Herbicide applied	Monitor 2019
Phar-cjs-29	Phalaris arundinacea	NA	44.758411	-72.419435	B	No	Herbicide applied	Monitor 2019
Phar-cjs-3	Phalaris arundinacea	NA	44.749994	-72.426423	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-30	Phalaris arundinacea	NA	44.758483	-72.419572	B	No	Herbicide applied	Monitor 2019
Phar-cjs-31	Phalaris arundinacea	NA	44.758549	-72.419245	A	No	Herbicide applied	Monitor 2019
Phar-cjs-32	Phalaris arundinacea	NA	44.758715	-72.418632	A	No	Herbicide applied	Monitor 2019
Phar-cjs-32	Phalaris arundinacea	NA	44.758648	-72.417699	A	No	Herbicide applied	Monitor 2019
Phar-cjs-33	Phalaris arundinacea	NA	44.757432	-72.418288	A	No	Herbicide applied	Monitor 2019
Phar-cjs-34	Phalaris arundinacea	NA	44.75657	-72.417747	A	No	Herbicide applied	Monitor 2019
Phar-cjs-35	Phalaris arundinacea	NA	44.756294	-72.417809	A	No	Herbicide applied	Monitor 2019
Phar-cjs-36	Phalaris arundinacea	NA	44.755865	-72.41782	A	No	Herbicide applied	Monitor 2019
Phar-cjs-36	Phalaris arundinacea	NA	44.755777	-72.417823	A	No	Herbicide applied	Monitor 2019
Phar-cjs-38	Phalaris arundinacea	NA	44.768938	-72.40689	A	No	Herbicide applied	Monitor 2019
Phar-cjs-39	Phalaris arundinacea	NA	44.768771	-72.406476	A	No	Herbicide applied	Monitor 2019
Phar-cjs-4	Phalaris arundinacea	NA	44.75047	-72.426421	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-40	Phalaris arundinacea	NA	44.767737	-72.406687	A	No	Herbicide applied	Monitor 2019
Phar-cjs-41	Phalaris arundinacea	NA	44.766431	-72.407343	B	No	Herbicide applied	Monitor 2019
Phar-cjs-42	Phalaris arundinacea	NA	44.766338	-72.407719	A	No	Herbicide applied	Monitor 2019

**Wind Farm Invasive Vegetation Monitoring Summary**

GMP Kingdom Community Wind Project

Year 6 (2018) Monitoring Results

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Date: December 12, 2018

Unique Identification <sup>1</sup>	Species	Vermont Noxious Weed Classification <sup>2</sup>	Latitude <sup>3</sup>	Longitude <sup>3</sup>	Colony Size (Approximate # of Stems) <sup>4</sup>	Woodland Dispersal? <sup>5</sup>	2018 Treatment Activity	Recommendations
Phar-cjs-43	Phalaris arundinacea	NA	44.765502	-72.408606	A	No	Herbicide applied	Monitor 2019
Phar-cjs-44	Phalaris arundinacea	NA	44.765449	-72.409159	A	No	Herbicide applied	Monitor 2019
Phar-cjs-45	Phalaris arundinacea	NA	44.764566	-72.409549	B	No	Herbicide applied	Monitor 2019
Phar-cjs-49	Phalaris arundinacea	NA	44.767459	-72.407019	A	No	Herbicide applied	Monitor 2019
Phar-cjs-5	Phalaris arundinacea	NA	44.750589	-72.426562	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-6	Phalaris arundinacea	NA	44.751323	-72.426522	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-60	Phalaris arundinacea	NA	44.734537	-72.444223	A	No	Herbicide applied	Monitor 2019
Phar-cjs-61	Phalaris arundinacea	NA	44.733147	-72.44461	C	No	Herbicide applied	Monitor 2019
Phar-cjs-62	Phalaris arundinacea	NA	44.733327	-72.444686	C	No	Herbicide applied	Monitor 2019
Phar-cjs-63	Phalaris arundinacea	NA	44.734961	-72.441504	A	No	Herbicide applied	Monitor 2019
Phar-cjs-64	Phalaris arundinacea	NA	44.735157	-72.44127	A	No	Herbicide applied	Monitor 2019
Phar-cjs-65	Phalaris arundinacea	NA	44.735415	-72.441144	A	No	Herbicide applied	Monitor 2019
Phar-cjs-66	Phalaris arundinacea	NA	44.735572	-72.44098	C	No	Herbicide applied	Monitor 2019
Phar-cjs-69	Phalaris arundinacea	NA	44.735821	-72.440938	A	No	Herbicide applied	Monitor 2019
Phar-cjs-70	Phalaris arundinacea	NA	44.736523	-72.440487	A	No	Herbicide applied	Monitor 2019
Phar-cjs-71	Phalaris arundinacea	NA	44.737352	-72.440927	A	No	Herbicide applied	Monitor 2019
Phar-cjs-74	Phalaris arundinacea	NA	44.739011	-72.435958	B	No	Herbicide applied	Monitor 2019
Phar-cjs-76	Phalaris arundinacea	NA	44.740796	-72.434491	A	No	Herbicide applied	Monitor 2019
Phar-cjs-77	Phalaris arundinacea	NA	44.7637	-72.437733	A	No	Herbicide applied	Monitor 2019
Phar-cjs-78	Phalaris arundinacea	NA	44.763576	-72.437176	A	No	Herbicide applied	Monitor 2019
Phar-cjs-78	Phalaris arundinacea	NA	44.763752	-72.437181	C	No	Herbicide applied	Monitor 2019
Phar-cjs-79	Phalaris arundinacea	NA	44.763378	-72.437179	C	No	Herbicide applied	Monitor 2019
Phar-cjs-8	Phalaris arundinacea	NA	44.754638	-72.426749	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-80	Phalaris arundinacea	NA	44.763264	-72.437223	C	No	Herbicide applied	Monitor 2019
Phar-cjs-81	Phalaris arundinacea	NA	44.763149	-72.437289	B	No	Herbicide applied	Monitor 2019
Phar-cjs-82	Phalaris arundinacea	NA	44.763157	-72.437401	B	No	Herbicide applied	Monitor 2019
Phar-cjs-83	Phalaris arundinacea	NA	44.763015	-72.437143	B	No	Herbicide applied	Monitor 2019
Phar-cjs-84	Phalaris arundinacea	NA	44.762972	-72.437003	C	No	Herbicide applied	Monitor 2019
Phar-cjs-85	Phalaris arundinacea	NA	44.762864	-72.436876	C	No	Herbicide applied	Monitor 2019
Phar-cjs-86	Phalaris arundinacea	NA	44.762795	-72.436708	C	No	Herbicide applied	Monitor 2019
Phar-cjs-87	Phalaris arundinacea	NA	44.762805	-72.436523	C	No	Herbicide applied	Monitor 2019
Phar-cjs-88	Phalaris arundinacea	NA	44.76358	-72.43741	A	No	Herbicide applied	Monitor 2019
Phar-cjs-88	Phalaris arundinacea	NA	44.76258	-72.436021	C	No	Herbicide applied	Monitor 2019
Phar-cjs-89	Phalaris arundinacea	NA	44.762232	-72.435498	C	No	Herbicide applied	Monitor 2019
Phar-cjs-9	Phalaris arundinacea	NA	44.755255	-72.426763	C	No	Removed and bagged to dispose	Monitor 2019
Phar-cjs-90	Phalaris arundinacea	NA	44.762162	-72.435464	C	No	Herbicide applied	Monitor 2019
Phar-cjs-91	Phalaris arundinacea	NA	44.761997	-72.435377	B	No	Herbicide applied	Monitor 2019
Phar-cjs-92	Phalaris arundinacea	NA	44.761826	-72.435266	C	No	Herbicide applied	Monitor 2019
Phar-cjs-94	Phalaris arundinacea	NA	44.761545	-72.435069	C	No	Herbicide applied	Monitor 2019
Phar-cjs-95	Phalaris arundinacea	NA	44.761292	-72.434975	C	No	Herbicide applied	Monitor 2019
Phar-cjs-96	Phalaris arundinacea	NA	44.761122	-72.43486	C	No	Herbicide applied	Monitor 2019
Phar-cjs-97	Phalaris arundinacea	NA	44.760866	-72.43468	C	No	Herbicide applied	Monitor 2019
Phar-cjs-98	Phalaris arundinacea	NA	44.760264	-72.434439	B	No	Herbicide applied	Monitor 2019
Phar-cjs-99	Phalaris arundinacea	NA	44.759955	-72.434168	A	No	Herbicide applied	Monitor 2019
Phase-cjs-14	Phalaris arundinacea	NA	44.755815	-72.426778	C	No	Removed and bagged to dispose	Monitor 2019
Phau-cjs-10	Phalaris arundinacea	NA	44.737395	-72.439827	A	No	Herbicide applied	Monitor 2019
ADL-PHAU-1	Phragmites australis	B	44.75242	-72.424175	A	No	Herbicide applied	Monitor 2019
ADL-PHAU-10	Phragmites australis	B	44.758133	-72.424323	B	No	Herbicide applied	Monitor 2019
ADL-PHAU-100	Phragmites australis	B	44.760145	-72.434037	A	No	Herbicide applied	Monitor 2019
ADL-PHAU-102	Phragmites australis	B	44.761041	-72.434544	A	No	Herbicide applied	Monitor 2019
ADL-PHAU-11	Phragmites australis	B	44.757859	-72.429468	A	No	Herbicide applied	Monitor 2019
ADL-PHAU-12	Phragmites australis	B	44.75896	-72.432795	A	No	Herbicide applied	Monitor 2019
ADL-PHAU-2	Phragmites australis	B	44.748964	-72.425329	B	No	Herbicide applied	Monitor 2019
ADL-PHAU-300	Phragmites australis	B	44.746953	-72.426941	A	No	Herbicide applied	Monitor 2019
ADL-PHAU-5	Phragmites australis	B	44.742639	-72.433324	A	No	Herbicide applied	Monitor 2019
ADL-PHAU-5	Phragmites australis	B	44.745816	-72.42816	B	No	Herbicide applied	Monitor 2019



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ADL-PHAU-6	Phragmites australis	B	44.741303	-72.433687	A	No	Herbicide applied	Monitor 2019
ADL-PHAU-7	Phragmites australis	B	44.741175	-72.434	A	No	Herbicide applied	Monitor 2019
ADL-PHAU-8	Phragmites australis	B	44.738273	-72.439465	A	No	Herbicide applied	Monitor 2019
JMP-PHAU-13	Phragmites australis	B	44.755639	-72.420995	A	No	Herbicide applied	Monitor 2019
JMP-PHAU-43	Phragmites australis	B	44.745783	-72.4278	A	No	Herbicide applied	Monitor 2019
JMP-PHAU-64	Phragmites australis	B	44.757879	-72.429989	A	No	Herbicide applied	Monitor 2019
JMP-PHAU-80	Phragmites australis	B	44.762802	-72.411414	A	No	Herbicide applied	Monitor 2019
JMP-PHAU-81	Phragmites australis	B	44.762777	-72.411782	A	No	Herbicide applied	Monitor 2019
Pham-cjs-13	Phragmites australis	B	44.758815	-72.418269	A	No	Herbicide applied	Monitor 2019
Pham-cjs-16	Phragmites australis	B	44.762796	-72.411145	A	No	Herbicide applied	Monitor 2019
Phar-cjs-1	Phragmites australis	B	44.735063	-72.441434	A	No	Herbicide applied	Monitor 2019
Phau-cjs-11	Phragmites australis	B	44.737624	-72.441064	A	No	Herbicide applied	Monitor 2019
Phau-cjs-12	Phragmites australis	B	44.758533	-72.42138	A	No	Herbicide applied	Monitor 2019
Phau-cjs-14	Phragmites australis	B	44.762624	-72.411205	A	No	Herbicide applied	Monitor 2019
Phau-cjs-15	Phragmites australis	B	44.762709	-72.411306	A	No	Herbicide applied	Monitor 2019
Phau-cjs-16	Phragmites australis	B	44.762711	-72.411418	A	No	Herbicide applied	Monitor 2019
Phau-cjs-2	Phragmites australis	B	44.736034	-72.441121	A	No	Herbicide applied	Monitor 2019
Phau-cjs-3	Phragmites australis	B	44.736309	-72.441284	A	No	Herbicide applied	Monitor 2019
Phau-cjs-4	Phragmites australis	B	44.73728	-72.440078	A	No	Herbicide applied	Monitor 2019
Phau-cjs-5	Phragmites australis	B	44.739243	-72.436032	A	No	Herbicide applied	Monitor 2019
Phau-cjs-6	Phragmites australis	B	44.739264	-72.436258	A	No	Herbicide applied	Monitor 2019
Phau-cjs-7	Phragmites australis	B	44.739529	-72.436244	A	No	Herbicide applied	Monitor 2019
Phau-cjs-8	Phragmites australis	B	44.740923	-72.433798	A	No	Herbicide applied	Monitor 2019
Phau-cjs-8	Phragmites australis	B	44.740773	-72.433356	A	No	Herbicide applied	Monitor 2019
Phau-cjs-9	Phragmites australis	B	44.740893	-72.43356	A	No	Herbicide applied	Monitor 2019

**Notes:**

Invasive vegetation survey for the Wind Farm was conducted by VHB - July 13-18, 2018.

<sup>1</sup> A Unique Identification was assigned to each population of non-native species found within the monitoring area; individual populations may consist of multiple sub-populations in the same general vicinity.

<sup>2</sup> Vermont Noxious Weed Classification follows the VT Agency of Agriculture, Food, & Markets 20 031 020 Quarantine #3 - Noxious Weeds

<sup>3</sup> Occurrences mapped via use of GPS Location - LAT/LONG in NAD 83

<sup>4</sup>Population size code A= less than or equal to 20 stems, B= between 21 and 100 stems, C= greater than 100 stems

<sup>5</sup>Where invasive plants occur, assessments include up to 100-feet into adjoining woodland

\\vhb\gbl\proj\SBurlington\57346.18 GMP KCW FY19 Reporting\ssheets\2018 NNIS\{KCW\_2018\_Inv Veg Summary\_Wind\_Farm.xlsx}2018 Wind Farm Invasives

# **ATTACHMENT 3**



GMP Kingdom Community Wind (KCW) - Lowell, Vermont  
Wind Farm  
Sixth Annual (2018) Invasive Vegetation Monitoring Photographs



Photograph 1. Representative view of a small, isolated population of *Phalaris arundinacea*



Photograph 2. Representative view of a small, population of *Centaurea stoebe*



Photograph 3. View of a small *Phalaris arundinacea* occurrence along the access road



Photograph 4. Small, isolated occurrence of *Phragmites australis* within a stormwater treatment pond



Photograph 5. View of a large, dense population of *Phalaris arundinacea* within the transmission corridor



Photograph 6. Representative view of a small, isolated population of *Lythrum salicaria*



GMP Kingdom Community Wind (KCW) - Lowell, Vermont  
Wind Farm  
Sixth Annual (2018) Invasive Vegetation Monitoring Photographs



Photograph 7. Representative view of small, scattered population of *Phragmites australis* located along the access road



Photograph 8. Representative view of a small *Lythrum salicaria* occurrence located near a stormwater pond along the access road



Photograph 9. View of a dense population of *Phalaris arundinacea* within the transmission corridor



Photograph 10. Representative view of a small, population of *Centaurea stoebe* along the transmission corridor