



# 2020 Invasive Plant Management on Village of Anmore Municipal Property by the Invasive Species Council of Metro Vancouver

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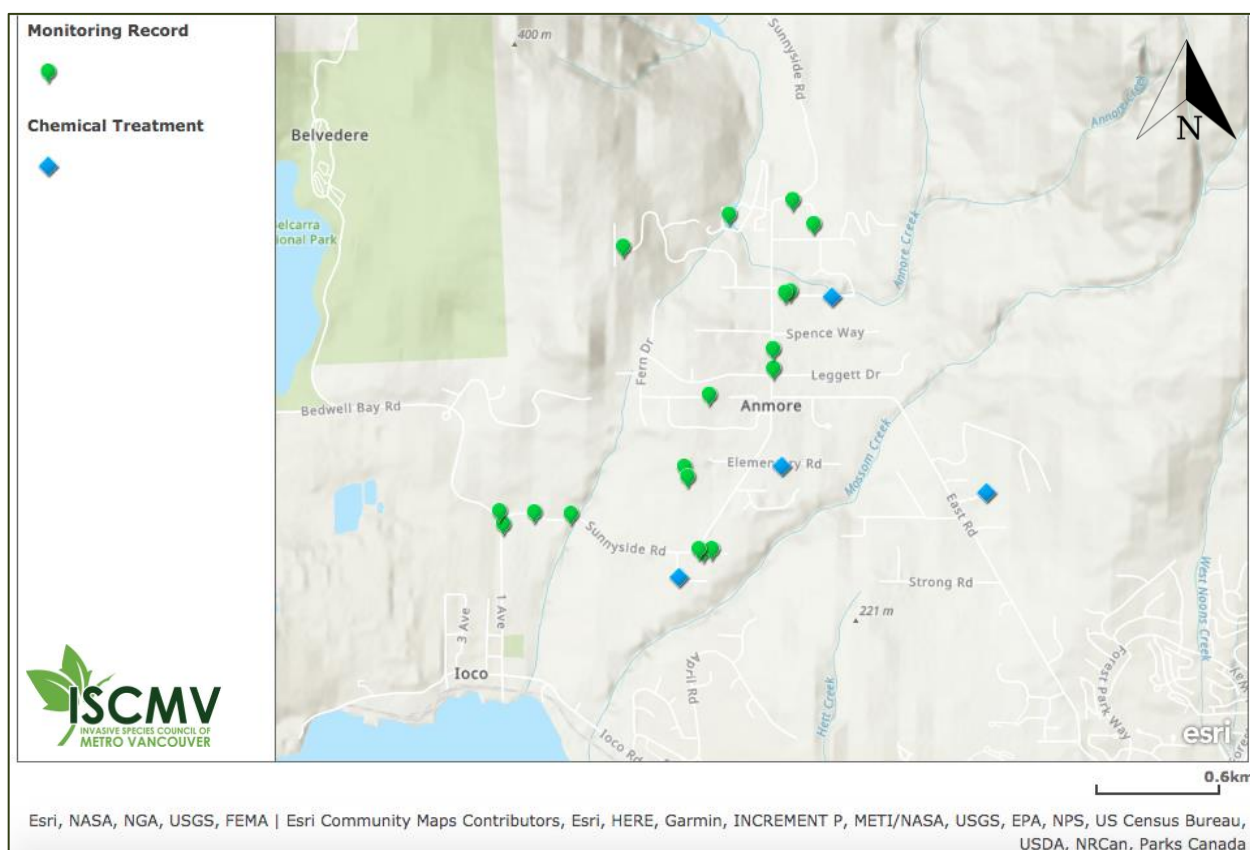
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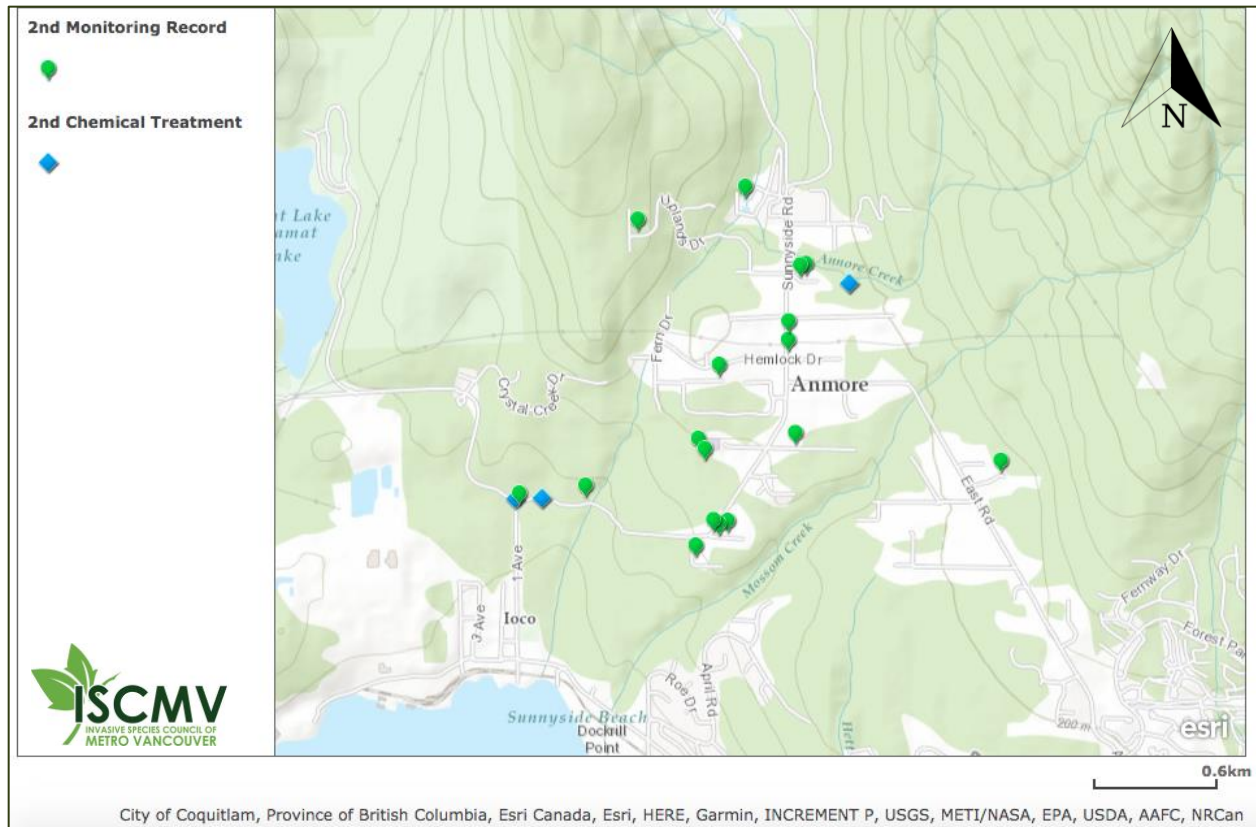
## 1.0 Introduction

The Invasive Species Council of Metro Vancouver (ISCMV) was contracted to conduct invasive plant control and monitoring activities for the Village of Anmore on municipal property during the 2020 field season, following up from treatments carried out previous years. The ISCMV was also tasked with collecting and updating the orange hawkweed inventory within the village.

Each site was treated and/or monitored at least twice. First treatments were conducted during the month of June (Figure 1), and second treatments were conducted during September (Figure 2). Treatments were conducted under the ISCMV Pesticide Use License #18943. The ISCMV will submit the required pesticide use information for work conducted on Anmore lands in our annual report to BC Ministry of Environment. The ISCMV follows all required regulations and the guidance provided for invasive plant management on provincial public lands as outlined in the [Invasive Plant Pest Management Plan for Provincial Crown Lands in the South Coastal Region of British Columbia \(PMP\)](#).



**Figure 1:** Map of chemical treatment and monitoring record locations of 1<sup>st</sup> treatments in June 2020 on Village of Anmore municipal property, B.C.



**Figure 2:** Map of locations of 2<sup>nd</sup> treatments in September 2020 of chemical treatments and monitoring records on Village of Anmore municipal property, B.C.

## 2.0 Methods

### 2.1 Chemical Control Methods

Control of knotweed species was done using chemical control via hand sprayer application. The herbicide used for control work was **VP480 (formerly Vantage XRT)**, a non-selective herbicide with active ingredient glyphosate @ 480 g active ingredient/L.

### 2.2 Monitoring Methods

ISCMV monitored treatment sites throughout the 2020 field season. Data collection for control and monitoring work was conducted in accordance with guidelines set out by the [Invasive Alien Plant Program \(IAPP\) Application](#) administered by the BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development. Data is stored in the ISCMV files. Data on herbicide treatment and use, weather conditions, area covered by invasive plant, date/time, coordinates were recorded using an iPad. Photos of the site were also taken both during treatment and site follow up.

### 3.0 Results

#### 3.1 Treating and Monitoring Historical Sites

Sites that were treated in previous years showed high efficacy as the infestations have continued to reduce in size in 2020. The table below shows a comparison of knotweed and orange hawkweed sites that require treatments between 2019 and 2020. (Table 1).

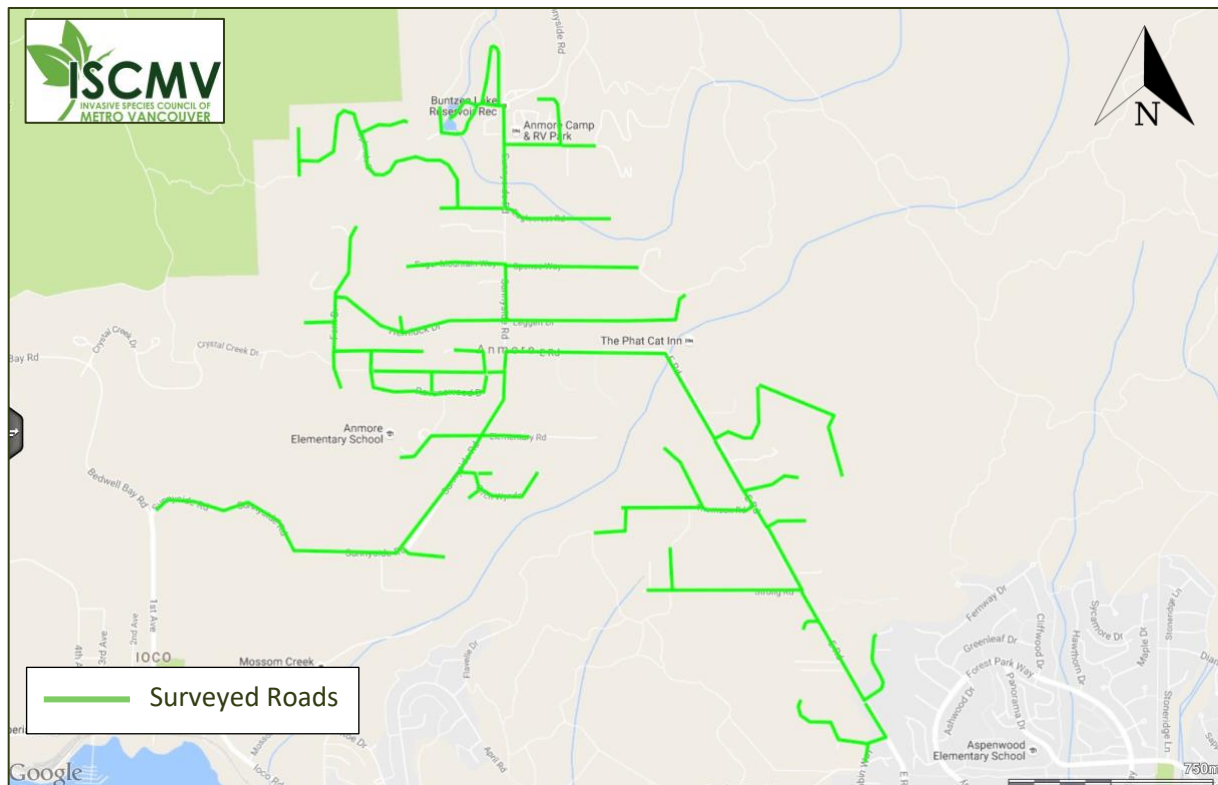
**Table 1:** Comparison of number of sites treated and monitored between first and second treatments in 2019 and 2020

	Site First Treatment		Sites Second Treatment	
	Treatment	Monitoring	Treatment	Monitoring
<b>2019</b>	13 (190 m <sup>2</sup> )	17	3 (9 m <sup>2</sup> )	26
<b>2020</b>	4 (43 m <sup>2</sup> )	18	3 (139 m <sup>2</sup> )	17

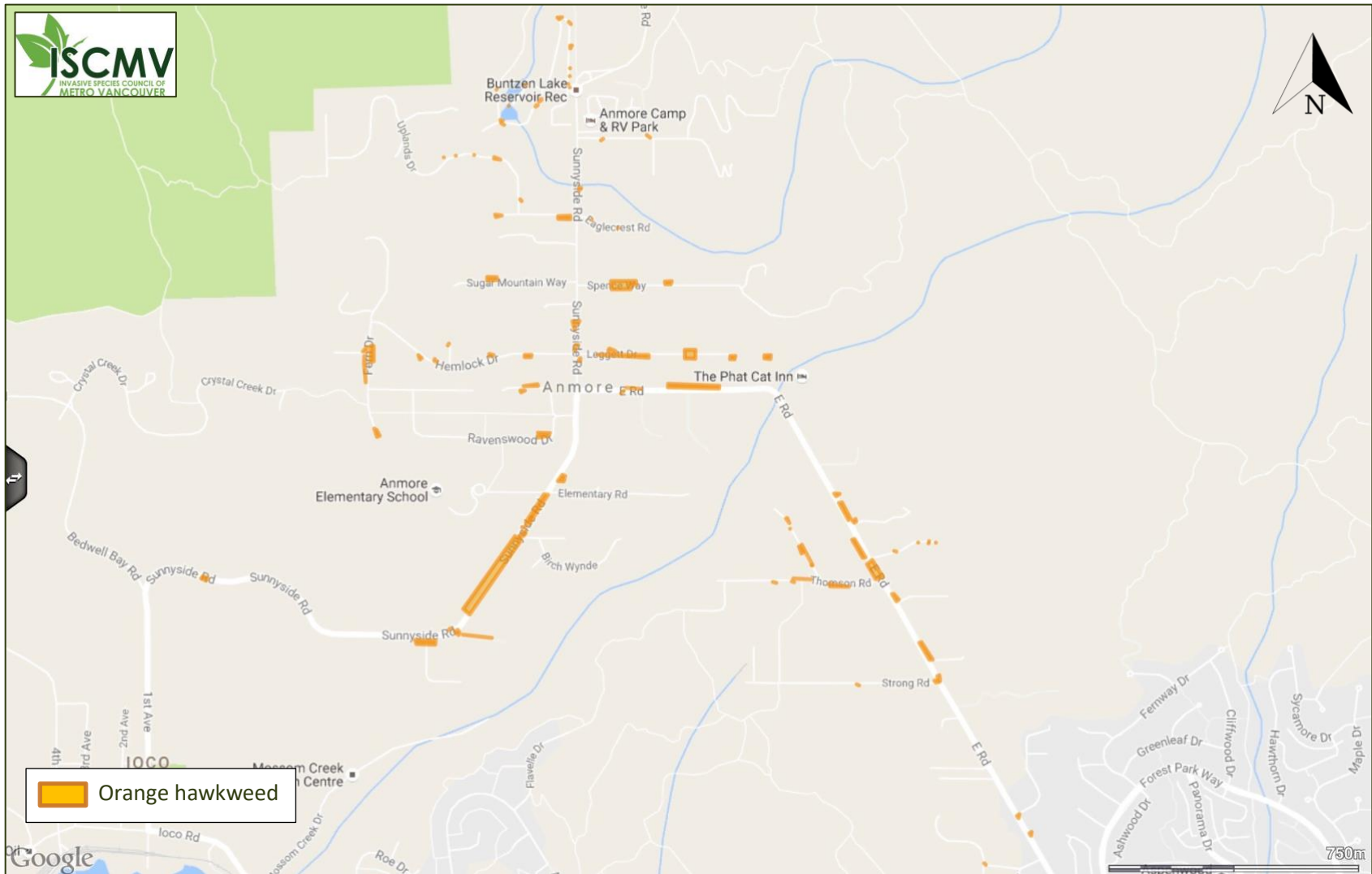
Raw data in csv, KML and shapefile formats can be supplied upon request.

#### 3.2 Orange Hawkweed Inventory

Roads were surveyed (Figure 3), and orange hawkweed inventory was collected throughout the 2020 field season. Polygons (areas where the orange hawkweed was found) were created to better manage and prioritize the infestations throughout the village. The estimated amount of orange hawkweed found along roadsides was 958 m<sup>2</sup> (Figure 4).



**Figure 3:** Map of the roads surveyed for orange hawkweed in Anmore, B.C during the 2020 field season.



**Figure 4:** Inventory map of orange hawkweed polygons found throughout Anmore, B.C during the 2020 field season, an approximate area of 958 m<sup>2</sup> of orange hawkweed was found throughout the village along roads. *To view these polygons and their details, download the “orange hawkweed inventory 2020” kmz. file provided, and simply drag and drop into Google Earth to easily view an interactive map including all of the details.*

## 4.0 Recommendations

### 4.1 Monitoring

Monitoring should be completed on all knotweed sites treated during the 2021 field season to ensure that if knotweed returns it is re-treated. Monitoring of knotweed species can begin in late April and early May. Sites found with re-growth should be retreated as early as possible as the greatest degree of long-term efficacy will be experienced with swift follow-up treatments.

### 4.2 Training and Outreach

After a number of years of treatments, the knotweed sites found in Anmore have greatly reduced in size, some having been monitored for multiple years. Having an internal staff person trained to apply herbicide would benefit the Village greatly, as a trained staff person could respond to small isolated sites, time sensitive reports from the public, and potentially undertake all regular applications for knotweed and orange hawkweed. Please speak to the ISCMV if this is of interest; there are multiple ways to obtain a pesticide license and the ISCMV offers a pesticide applicator's course every spring.

Providing education to residents about orange hawkweed is also advised, as orange hawkweed was observed frequently on private property adjacent to the municipal sites surveyed.

### 4.3 Orange Hawkweed Management

There are many challenges with treating extensive infestations of orange hawkweed. One challenge is the proximity to water as there are many restrictions when using herbicides.

- Glyphosate products cannot be used within 1 m of the high-water mark of any running water (referred to the pesticide free zone "PFZ"), including ditches, streams and lakes. Even though water may not be present at the time of herbicide application, the "dry stream" is protected year-round. Glyphosate is also a non-selective herbicide, meaning it kills any plant it comes in contact with, including grass.
- Herbicides with the active ingredient aminopyralid are used on infestations in fields because they do not kill grass species, and only target broad leaf plants, such as orange hawkweed. Aminopyralid also has its challenges as it requires a 10 m PFZ, and also cannot be used within 10 m of a tree line. The orange hawkweed sites throughout Anmore are mostly either within 10 m of a ditch, or a tree line, meaning there are very limited sites that this herbicide could be applied.

Comparing these two herbicides shows the challenges; one will kill grass along roads and will not be aesthetically pleasing for a period of time after treatment, and one has many site limitations but will not kill grass.

Treatment of orange hawkweed can begin as early as May depending on the season, and should be done before plants go to seed. It is recommended that there be one initial treatment in late spring and a follow-up treatment in late summer or early fall 2020. There are two recommended treatment methods for orange hawkweed that would be beneficial to use together:

1. When orange hawkweed is widespread along roadsides, it is recommended to design a **mowing plan** for when the species is flowering (June-July). This would prevent the flowers from going to seed, which would minimize the spread of this plant. Although this does not eradicate the species, it would allow for control, especially near the PFZ along ditches where herbicide cannot be applied.
2. As seen on the map in Figure 4, orange hawkweed is prevalent in the village and treating all of it with **herbicide** would be a large task. Herbicide treatments for the smaller more isolated infestations would be a great start as it would prevent these from spreading or becoming more established.

Using both of these methods would help in the control of the species, and would minimize spread.