

2020 Noxious Weed Control Annual Report

Bigfork Hydroelectric Project

FERC Project No. 2652



Prepared by:



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1.0 INTRODUCTION

The Bigfork Hydroelectric Project (FERC Project No. 2652) received a new operating license from the Federal Energy Regulatory Commission (FERC) July 25, 2003. Article 410 of the FERC License Order required that PacifiCorp file a noxious weed control plan with the FERC within one year from the date of the new license, and that the plan include the following elements:

1. Specific goals and objectives;
2. Measures to promote public education and awareness of the threat of noxious weeds;
3. Methods for the prevention and early detection of noxious weed infestations, including how frequent project lands and waters would be inspected;
4. Methods for controlling noxious weed infestations along with an evaluation of the costs and benefits of various treatment methods (mechanical, biological, and chemical);
5. Methods for evaluating the effectiveness of implemented noxious weed control measures;
6. Schedule for all actions contained in the plan and for filing noxious weed monitoring reports with the Commission; and
7. Schedule for periodically reviewing the plan to incorporate new data or changes in weed management practices.

On July 26, 2004, PacifiCorp submitted a Noxious Weed Management Plan pursuant to Article 410 of the new operating license. A FERC order approving and modifying the plan was issued by the FERC April 8, 2005. Following the FERC approval of the plan, PacifiCorp performed treatments and reported the results to the FERC in the annual noxious weed control report.

This report details the results of the noxious weed control program at PacifiCorp's Bigfork Hydroelectric Project located in Bigfork, Montana for 2020. The primary objective of this activity is to prevent noxious weed establishment and/or spread within the FERC project boundary lands in a manner that is consistent with all state laws and Flathead County ordinances that pertain to weed management. Specific goals of noxious weed control are:

1. Protect areas that are currently not infested with weeds;

2. Contain and reduce established weed populations and prevent spread to non-infested sites; and,
3. Restore, establish, and/or maintain healthy native plant communities.

In accordance with license Article 410 of the Bigfork Hydroelectric Project license, this report was sent out to the following agencies for a 30 day review: Flathead County Weed District, Montana Department of Environmental Quality, Montana Fish Wildlife and Parks, and United States Fish and Wildlife Service on November 20, 2020.

1.1 MONTANA STATE NOXIOUS WEED LAWS

Both state and county laws mandate control of noxious weeds in Montana. The state of Montana defines a noxious weed as “plants of foreign origin that can directly or indirectly injure agriculture, navigation, fish or wildlife, or public health” (Montana Weed Control Act, 2015): The Montana County Noxious Weed Control Act states that “It is unlawful for any person to permit any noxious weed to propagate or go to seed on the person’s land, except that any person who adheres to the noxious weed management program of the person’s weed management district or who has entered into and is in compliance with a noxious weed management agreement is considered to be in compliance with this section” (Montana Code Annotated Title 7 Chapter 22 Part 2116).

The state of Montana maintains a list of state noxious weeds, and for management purposes, has developed the following five priority rankings (Montana Department of Agriculture, 2019):

Priority 1A: These weeds are not present in Montana or have a very limited presence in Montana. Management criteria will require eradication if detected; education; and prevention.

Priority 1B: These weeds have limited presence in Montana. Management criteria will require eradication or containment and education.

Priority 2A: These weeds are common in isolated areas of Montana. Management criteria will require eradication or containment where less abundant. Management shall be prioritized by local weed districts.

Priority 2B: These weeds are abundant in Montana and widespread in many counties. Management criteria will require eradication or containment where less abundant. Management shall be prioritized by local weed districts.

Priority 3: Regulated Plants that are not on the Montana State noxious weed list. These regulated plants have the potential to have significant negative impacts. The plant may not be intentionally spread or sold other than as a contaminant in agricultural products. The state recommends research, education and prevention to minimize the spread of the regulated plant.

Montana State noxious weeds known to occur in Flathead County and the Bigfork Project FERC boundary are shown in Table 1 below.

Table 1. Montana and Flathead County Noxious Weeds List

Common Name	Scientific Name	Montana State Priority ¹	Flathead County Declared Noxious Weed ²	Known to Occur in Flathead County ³	Known to Occur in the Project Area
Baby's Breath	<i>Gypsophila paniculata</i>		2A	X	
Blueweed	<i>Echium vulgare</i>	1B		X	
Canada thistle	<i>Cirsium arvense</i>	2B		X	X
Common (European) buckthorn	<i>Rhamnus cathartica L.</i>	2A			
Common reed	<i>Phragmites australis ssp. australis</i>	1A			
Common tansy	<i>Tanacetum vulgare</i>	2B		X	X
Curlyleaf pondweed	<i>Potamogeton crispus</i>	2B		X	
Dalmatian toadflax	<i>Linaria dalmatica</i>	2B		X	
Diffuse knapweed	<i>Centaurea diffusa</i>	2B		X	
Dyer's woad	<i>Isatis tinctoria</i>	1A		X	
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>	2A		X	
Field bindweed	<i>Convolvulus arvensis</i>	2B		X	
Flowering rush	<i>Butomus umbellatus</i>	2A		X	
Hoary alyssum	<i>Berteroa incana</i>	2B		X	

Common Name	Scientific Name	Montana State Priority ¹	Flathead County Declared Noxious Weed ²	Known to Occur in Flathead County ³	Known to Occur in the Project Area
Houndstongue	<i>Cynoglossum officinale</i>	2B		X	X
Knotweed complex	<i>Polygonum spp.</i>	1B		X	
Leafy spurge	<i>Euphorbia esula</i>	2B		X	
Meadow hawkweed complex	<i>Heiracium caespitosium</i> <i>Heiracium praealtrum</i> <i>Heiracium floridundum</i>	2A		X	
Medusahead	<i>Taeniatherum caput-medusae</i>	1A			
Musk thistle	<i>Carduus nutans</i>		2A	X	X
Orange hawkweed	<i>Hieracium aruantiacum</i>	2A		X	X
Oxeye daisy	<i>Leucanthemum vulgare</i>	2B		X	X
Perennial pepperweed	<i>Lepidium latifolium</i>	2A		X	
Purple loosestrife	<i>Lythrum spp.</i>	1B		X	
Rush skeletonweed	<i>Chondrilla juncea</i>	1B		X	
Russian knapweed	<i>Acroptilon repens</i>	2B		X	
Russian thistle	<i>Salsola tragus</i>		2A	X	
Saltcedar	<i>Tamarix spp.</i>	2B		X	
Scotch broom	<i>Cytisus scoparius</i>	1B			
Spotted Knapweed	<i>Centaurea maculosa</i>	2B		X	X
St. Johnswort (goat weed)	<i>Hypericum perforatum</i>	2B		X	X
Sulfur (erect) cinquefoil	<i>Potentilla recta</i>	2B		X	
Tansy ragwort	<i>Senecio jacobea</i>	2A		X	X
Tall buttercup	<i>Ranunculus acris</i>	2A		X	
Tumble mustard	<i>Sisymbrium altissimum</i>		2A	X	
White campion	<i>Silene latifolia</i>		2A	X	

Common Name	Scientific Name	Montana State Priority ¹	Flathead County Declared Noxious Weed ²	Known to Occur in Flathead County	Known to Occur in Project Area
Whitetop	<i>Cardaria draba</i> , <i>Lepidium draba</i>)	2B			
Ventenata	<i>Ventenata dubia</i>	2A		X	
Yellowflag iris	<i>Iris pseudacorus</i>	2A		X	
Yellow toadflax	<i>Linaria vulgaris</i>	2B		X	
Yellowstar Thistle	<i>Centaurea solstitialis</i>	1A		X	X

Source: ¹ Montana Department of Agriculture 2020

² Flathead County 2020

³ Montana Weed Control Associations 2020

2.0 PROJECT LOCATION

The Bigfork Hydroelectric Project is located on the lower Swan River near the town of Bigfork, Montana; approximately 20 miles south of the City of Kalispell, in Flathead County (Figure 1). The project powerhouse discharges into the mouth of the Swan River near Bigfork Bay, an arm of Flathead Lake.

The project area includes those lands within the current FERC project boundary (Figure 2). Within the FERC boundary, there are several areas that are highly susceptible to noxious weed infestation due to frequent soil disturbance and human activities. These locations have been elevated to high priority areas for noxious weed control and include lands immediately adjacent to the diversion canal, project facilities, river access points, and areas in proximity to the Swan River Nature Trail and adjacent to maintenance and access roads.

3.0 BASELINE SURVEY

On May 23, 2005, PacifiCorp staff and Bob Gornick (a Montana state licensed pesticide applicator) performed a baseline survey of the project area to assess for the presence of noxious weeds. Based on the survey, six treatment sites were identified. Noxious weed surveys have been completed annually since the initial 2005 survey. Additional sites have been added to the survey inventory as warranted. In 2007, two survey/treatment sites were

added to the annual monitoring plan based on observed weed infestations. In 2009, another two survey/treatment sites were added to the annual monitoring plan. In 2017, after an inspection from the Flathead County Noxious Weed Control District and a PacifiCorp employee, five new treatment sites were added to the survey sites. In 2019 one additional treatment site was added totaling 17 survey/treatment sites. Treatments were implemented at all seventeen survey sights in 2020. Figure 2 outlines photo point locations for each site.

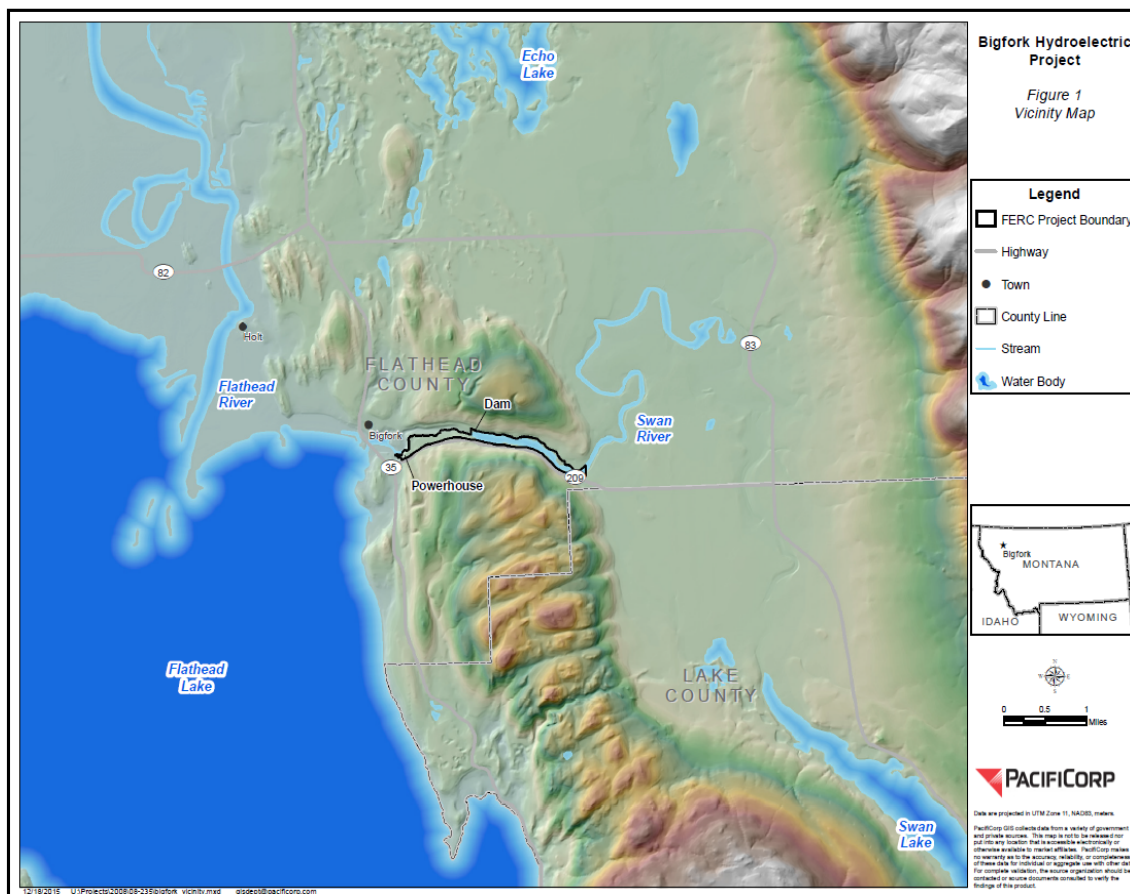
The treatment sites included:

- 1) Fenced in area near the old fish ladder (1N05);
- 2) Various locales along the Swan River Nature Trail (2N05);
- 3) A side trail south of the Swan River Nature Trail (3N17);
- 4) Parking area at the east trailhead for the Swan River Nature Trail (4N17);
- 5) The hill behind the powerhouse (1S05);
- 6) The flowline east to the FERC boundary (2S05);
- 7) Canal intake and access to Pacific Park (3S05);
- 8) Pacific Park and road along canal (4S05);
- 9) South Shore kayaker access parking lot (5S07);
- 10) Kearney Rapids boat launch at Swan River Bridge (6S07);
- 11) Concrete flume from headworks to Pacific Park (7S09);
- 12) Areas of Pacific Park around the parking area, picnic areas, and outhouse (8S09);
- 13) Backup generator enclosure (9S09);
- 14) Hillside above the forebay (10S17);
- 15) Hillside above the bifurcation (11S17);
- 16) Communications line clearing along concrete flume (12S17) and
- 17) Survey marker installed in 2018 north of the natural trail (1N19)

3.1 MONITORING LOCATIONS

Sites were chosen based on geographic location and vary in size based on the prevalence of the noxious weeds present. Noxious weed species composition and abundance varied at each location. Below is a brief description of the site location, weed species and prevalence. Site nomenclature was based on location in relation to the Swan River, north (N) or south (S), and include chronological ordering. The numbers 05 were added to the end of each site name to signify that these sites were identified during the baseline surveys in 2005. Additional sites identified during the 2007 survey have been identified with a numeric ordering of 07 for 2007. As stated above, two additional sites were identified in 2007. No new sites were identified in 2008. Two additional sites were identified in 2009. These sites have been identified with a numeric ordering of 09 to signify that they were identified in 2009. Five additional sites were identified during the inspection in 2017. These sites have been identified with the numeric ordering of 17 to signify they were identified in 2017. In 2019 one site was added due to construction of a survey marker identified with the numeric ordering of 19.

Figure 1: Bigfork Project Area



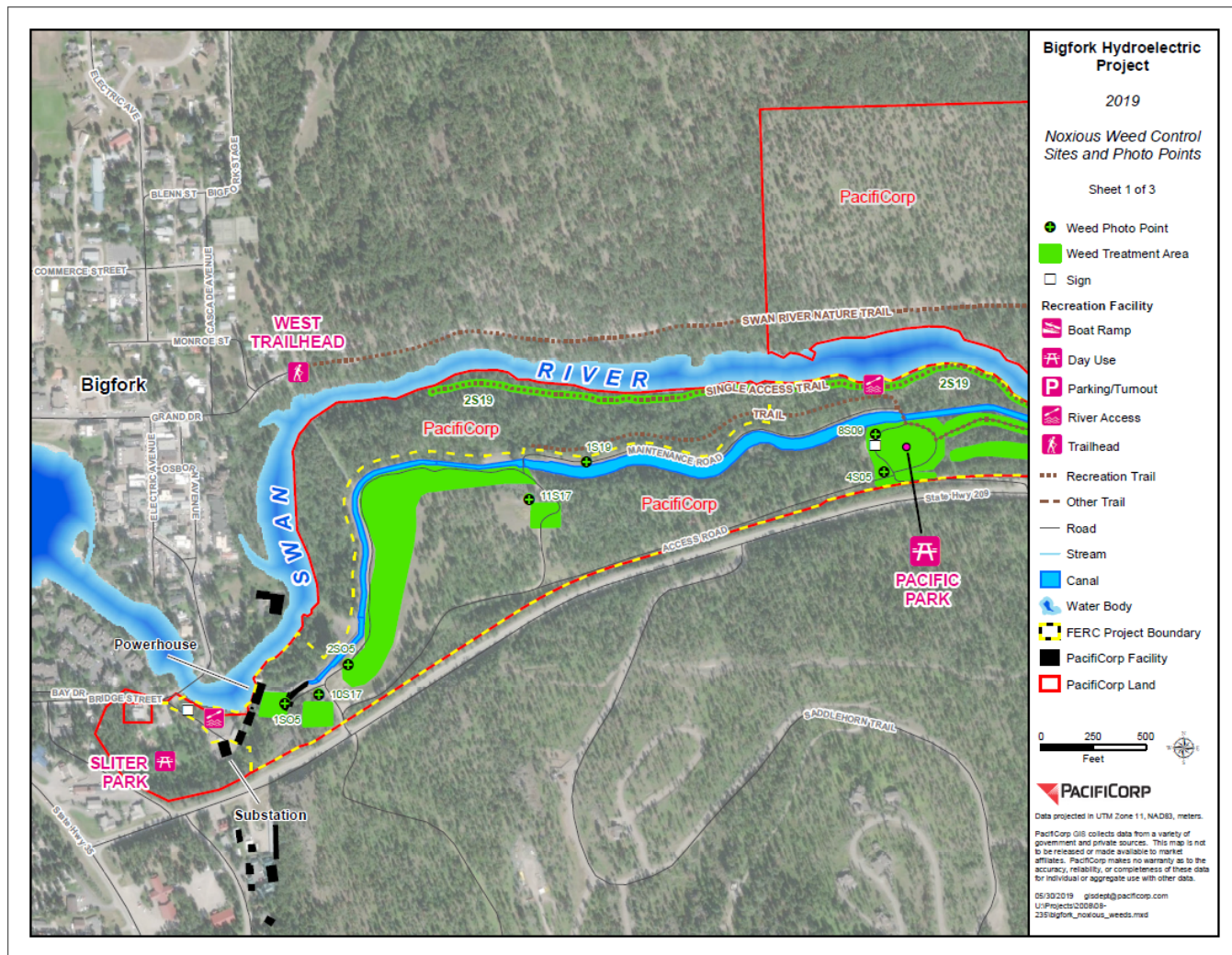


Figure 2: Noxious Weed Treatment Sites Sheet 1 of 3

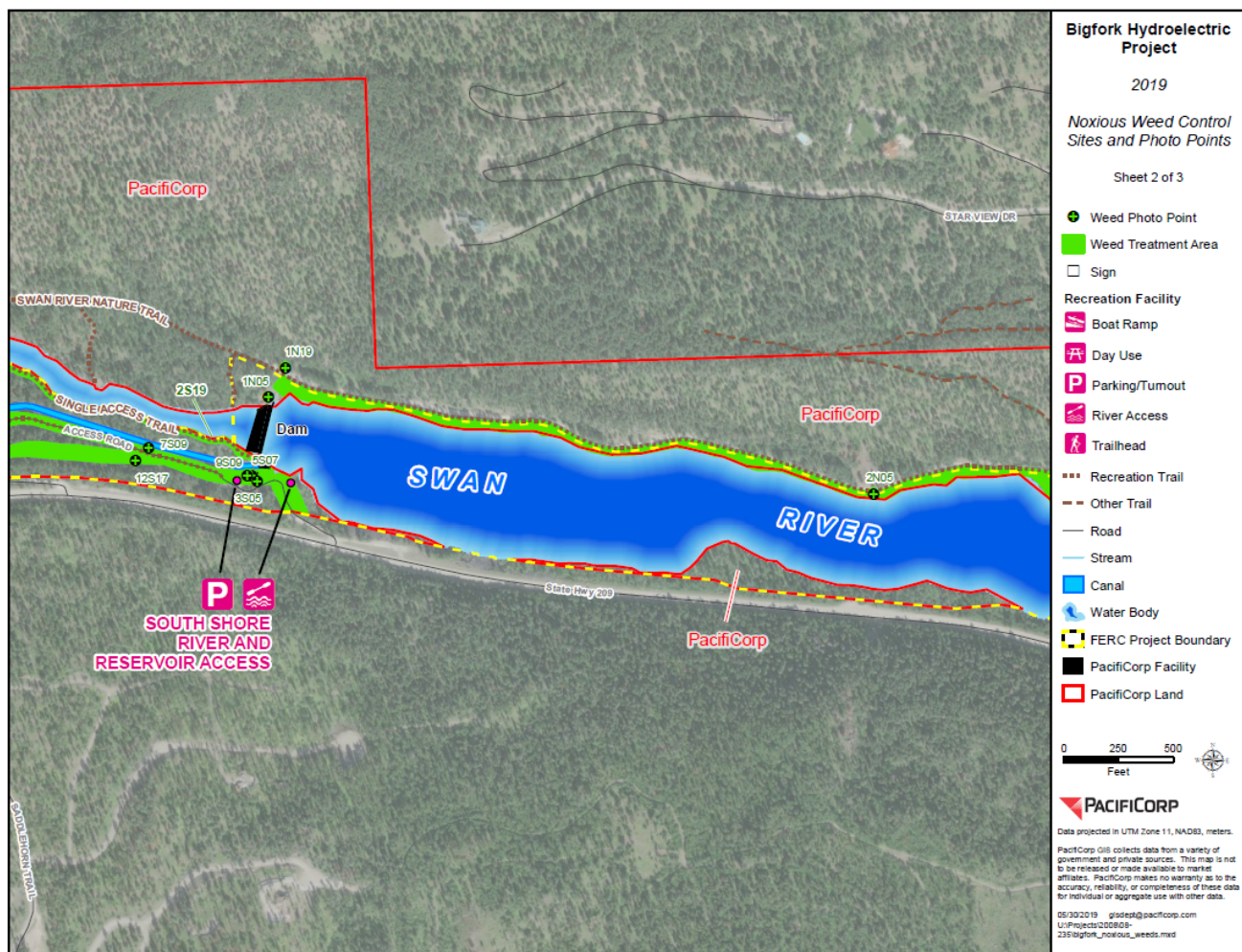


Figure 2: Noxious Weed Treatment Sites Sheet 2 or 3

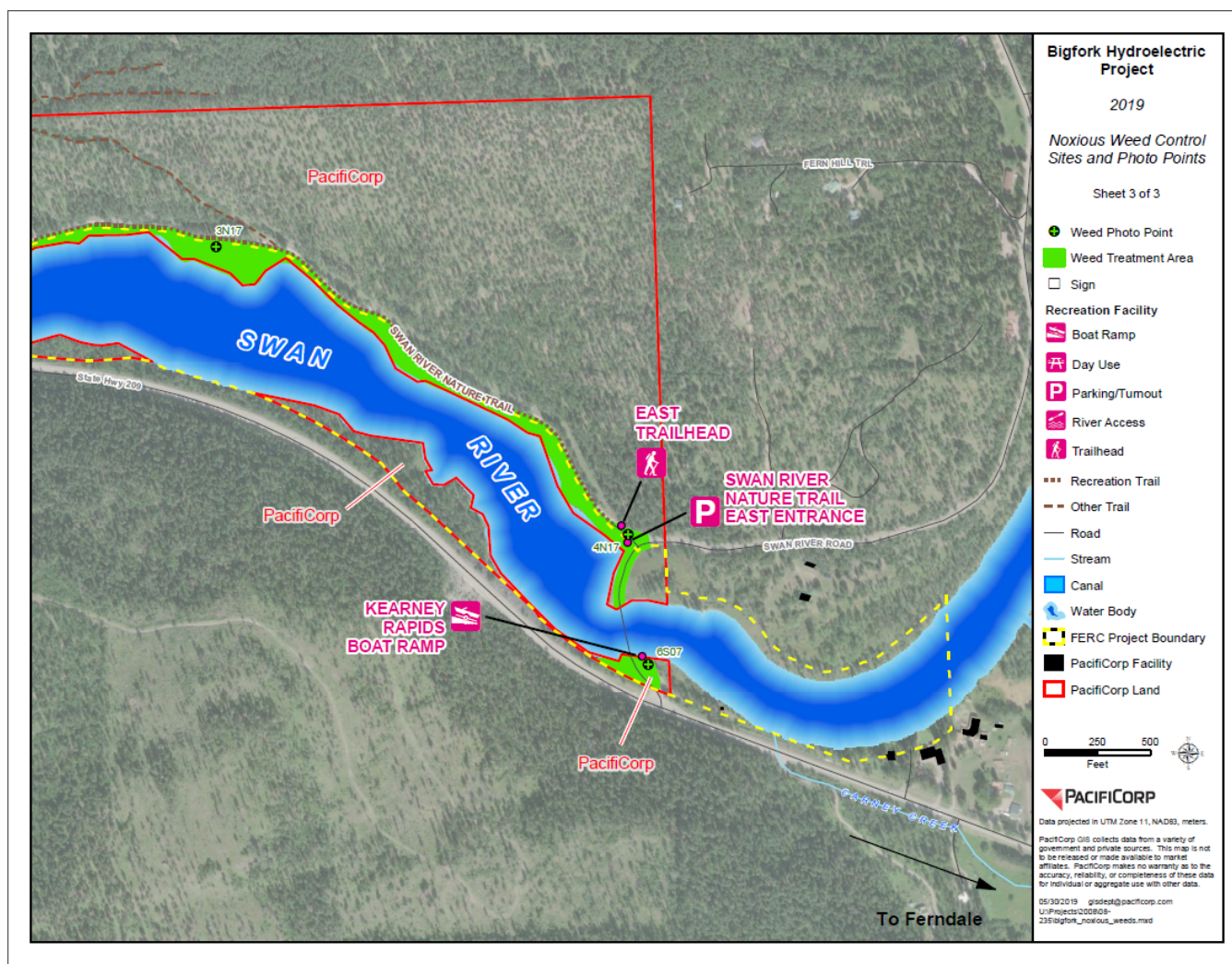


Figure 2: Noxious Weed Treatment Sites Sheet 3 or 3

Site 1N05

This site is located on the south edge of the Swan River Nature Trail near the decommissioned fish ladder. Now enclosed by fencing, this area has a history of soil disturbance caused by the construction, maintenance, and decommissioning of the fish ladder. The grass is well established and comprised mostly of native plants. The area was treated for Houndstongue (*Cynoglossum officinale*).

<i>Site 1N05</i>		<i>Vegetative cover (%)</i>	<i>Weed Cover (%)</i>
2005	Baseline	80	65
	After Treatment	80	5
2006	Baseline	95	2
	After Treatment	95	2
2007	Baseline	95	2
	After Treatment	100	2
2008	Baseline	100	1
	After Treatment	100	1
2009	Baseline	100	1
	After Treatment	100	1
2010	Baseline	100	1
	After Treatment	100	1
2011	Baseline	100	1
	After Treatment	100	2
2012	Baseline	100	1
	After Treatment	100	1
2013	Baseline	100	1
	After Treatment	100	1
2014	Baseline	100	<1
	After Treatment	100	4
2015	Baseline	100	2
	After Treatment	100	1
2016	Baseline	100	1
	After Treatment	100	1
2017	Baseline	98	2
	After Treatment	100	1
2018	Baseline	98	2
	After Treatment	90	0
2019	Baseline	90	1
	After Treatment	98	2
2020	Baseline	90	3
	After Treatment	90	1

Site 2N05

This site was established to manage the noxious weeds adjacent to the Swan River Nature Trail. Due to the southern exposure and high public use this area is prone to noxious weeds. Spotted knapweed (*Centaurea maculosa*), continues to be a pervasive problem along the trail. Individual plants and small clusters of knapweed plants are found along sections of the trail with larger quantities found along the water's edge in areas frequented by fisherman. The area was treated for spotted knapweed, common tansy (*Tanacetum vulgare*), sulfur cinquefoil (*Potentilla recta*), and oxeye daisy (*Leucanthemum vulgare*) in 2020 with minimal residual plants.

	Site 2N05	Vegetative cover (%)	Weed Cover (%)
2005	Baseline	90	15
	After Treatment	90	5
2006	Baseline	90	2
	After Treatment	90	2
2007	Baseline	85	2
	After Treatment	85	1
2008	Baseline	80	1
	After Treatment	80	1
2009	Baseline	75	1
	After Treatment	70	0
2010	Baseline	60	1
	After Treatment	60	1
2011	Baseline	60	1
	After Treatment	65	1
2012	Baseline	60	3
	After Treatment	60	3
2013	Baseline	70	2
	After Treatment	70	3
2014	Baseline	70	2
	After Treatment	70	5
	Baseline	70	4

2015	After Treatment	70	5
2016	Baseline	70	3
	After Treatment	70	1
2017	Baseline	80	1
	After Treatment	95	2
2018	Baseline	85	2
	After Treatment	95	3
2019	Baseline	95	2
	After Treatment	98	1
2020	Baseline	95	3
	After Treatment	95	1

SITE 3N17

Site 3N17 is an unofficial trail south of the Swan River Nature Trail that has a historic establishment of spotted knapweed, orange hawkweed (*Hieracium aurantiacum*), noble yarrow (*Achillea nobilis*). All were effectively controlled with treatments this year.

	Site 3N17	Vegetative cover (%)	Weed Cover (%)
2018	Baseline	98	3
	After Treatment	98	1
2019	Baseline	75	1
	After Treatment	99	0
2020	Baseline	75	1
	After Treatment	95	1

SITE 4N17

Site 4N17 is the parking area for the east trailhead for the Swan River Nature Trail. The area received a lot of traffic and is susceptible to weed infestation from vehicles. Knapweed has been a continual problem in this area, so it was no surprise it appeared again near the parking areas and information signs in 2020 along with oxeye daisy. Weed control appears

to be effective since the knapweed didn't require a second treatment. The area will continue to be monitored.

	<i>Site 4N17</i>	<i>Vegetative cover (%)</i>	<i>Weed Cover (%)</i>
2018	Baseline	90	5
	After Treatment	60	2
2019	Baseline	75	10
	After Treatment	85	5
2020	Baseline	75	10
	After Treatment	90	0

Site 1S05

This site is located directly behind the powerhouse where the penstocks traverse the slope. The goal is to have grasses only in this area. There are a few shrubs that needed to be removed along with some dandelions that were documented during the summer survey. Shrubs were treated in 2020 and by the summer survey only grasses were growing.

	<i>Site 1S05</i>	<i>Vegetative cover (%)</i>	<i>Weed Cover (%)</i>
2005	Baseline	90	75
	After Treatment	90	5
2006	Baseline	90	30
	After Treatment	90	5
2007	Baseline	98	2
	After Treatment	95	2
2008	Baseline	98	1
	After Treatment	95	1
2009	Baseline	97	1
	After Treatment	95	1
2010	Baseline	100	1
	After Treatment	100	1
2011	Baseline	100	1
	After Treatment	100	1

2012	Baseline	100	1
	After Treatment	100	1
2013	Baseline	100	1
	After Treatment	100	4
2014	Baseline	100	<1
	After Treatment	100	1
2015	Baseline	100	<1
	After Treatment	100	2
2016	Baseline	100	1
	After Treatment	100	1
2017	Baseline	95	1
	After Treatment	90	1
2018	Baseline	95	1
	After Treatment	90	1
2019	Baseline	95	2
	After Treatment	85	3
2020	Baseline	95	2
	After Treatment	95	0

Site 2S05

This site, located on the south side of the Swan River, includes the area adjacent to the flowline and to the east and south of the FERC project boundary. The majority of this area has healthy grasses and forbs. However, the east and west ends of the open swale area, as well as the entire length of the earthed canal adjacent to the road continues to experience small amounts of spotted knapweed.

	<i>Site 2S05</i>	<i>Vegetative cover (%)</i>	<i>Weed Cover (%)</i>
2005	Baseline	95	75
	After Treatment	95	5
2006	Baseline	90	10
	After Treatment	90	2
2007	Baseline	100	2
	After Treatment	100	2
	Baseline	98	1

2008	After Treatment	99	1
2009	Baseline	99	1
	After Treatment	99	1
2010	Baseline	100	1
	After Treatment	100	1
2011	Baseline	100	1
	After Treatment	100	1
2012	Baseline	100	1
	After Treatment	100	1
2013	Baseline	100	1
	After Treatment	100	5
2014	Baseline	100	<1
	After Treatment	100	2
2015	Baseline	98	<1
	After Treatment	95	1
2016	Baseline	85	1
	After Treatment	85	1
2017	Baseline	90	1
	After Treatment	95	1
2018	Baseline	95	5
	After Treatment	95	2
2019	Baseline	98	2
	After Treatment	99	1
2020	Baseline	95	2
	After Treatment	95	1

Site 3S05

This site is located on the south side of the river and adjacent to the canal intake. The spring inspection noted spotted knapweed, common tansy, absinthe wormwood (*Artemisia absinthium*), and dandelion. Treatment was successful for most weeds, however houndstongue (*Cynoglossum officinale*) and spotted knapweed was detected later in the season and treated post surveys.

<i>Site 3S05</i>	<i>Vegetative cover (%)</i>	<i>Weed Cover (%)</i>
2005	Baseline	75
	After Treatment	70
2006	Baseline	5
	After Treatment	90
2007	Baseline	2
	After Treatment	100
2008	Baseline	2
	After Treatment	99
2009	Baseline	1
	After Treatment	99
2010	Baseline	0
	After Treatment	100
2011	Baseline	2
	After Treatment	100
2012	Baseline	3
	After Treatment	98
2013	Baseline	5
	After Treatment	60
2014	Baseline	3
	After Treatment	100
2015	Baseline	2
	After Treatment	100
2016	Baseline	1
	After Treatment	100
2017	Baseline	4
	After Treatment	100
2018	Baseline	3
	After Treatment	100
2019	Baseline	0
	After Treatment	100
2020	Baseline	1
	After Treatment	95
	Baseline	1
	After Treatment	98
	Baseline	1
	After Treatment	97
	Baseline	3
	After Treatment	95
	Baseline	3
	After Treatment	97

Site 4S05

This site covers the Pacific Park area and the access road adjacent to the canal across from the park. Some spotted knapweed was detected during the spring survey. A small amount of dandelion was observed along the access road. Treatment for these weeds were successful and no weeds were detected during the second survey.

	<i>Site 4S05</i>	<i>Vegetative cover (%)</i>	<i>Weed Cover (%)</i>
2005	Baseline	95	70
	After Treatment	95	5
2006	Baseline	95	5
	After Treatment	95	5
2007	Baseline	90	20
	After Treatment	80	2
2008	Baseline	80	2
	After Treatment	85	1
2009	Baseline	85	1
	After Treatment	85	10
2010	Baseline	80	5
	After Treatment	80	2
2011	Baseline	80	2
	After Treatment	75	1
2012	Baseline	80	2
	After Treatment	75	1
2013	Baseline	85	2
	After Treatment	80	2
2014	Baseline	85	<1
	After Treatment	80	<1
2015	Baseline	80	<1
	After Treatment	75	2
2016	Baseline	80	1
	After Treatment	80	1
2017	Baseline	95	1
	After Treatment	85	1

2018	Baseline	85	1
	After Treatment	85	1
2019	Baseline	85	2
	After Treatment	98	1
2020	Baseline	95	2
	After Treatment	97	0

Site 5S07

This site is located at the South Shore kayaker access parking lot. The vegetation in this area continues to become comprised mostly of native plants and weed populations are minimal. Small amounts of dandelion were detected this spring and a small patch of milk thistle (*Silubum marianum*) was detected in the summer survey. Both were treated successfully with minimal residual plants.

	Site 5S07	Vegetative cover (%)	Weed Cover (%)
2007	Baseline	60	30
	After Treatment	60	5
2008	Baseline	85	5
	After Treatment	85	1
2009	Baseline	85	1
	After Treatment	85	2
2010	Baseline	90	1
	After Treatment	90	5
2011	Baseline	95	4
	After Treatment	90	2
2012	Baseline	95	4
	After Treatment	90	2
2013	Baseline	90	1
	After Treatment	90	1
2014	Baseline	90	<1
	After Treatment	90	<1

2015	Baseline	92	1
	After Treatment	92	2
2016	Baseline	95	1
	After Treatment	95	1
2017	Baseline	95	1
	After Treatment	95	1
2018	Baseline	95	1
	After Treatment	95	1
2019	Baseline	98	1
	After Treatment		
2020	Baseline	98	1
	After Treatment	98	1

Site 6S07

This site includes road shoulders and vegetative buffer strips along the Kearney Rapids Boat Launch at Swan River Bridge. Spotted knapweed has established in areas disturbed during construction at the Kearney Rapid Boat Launch in 2017 along with common tansy, dandelion, and Canada thistle (*Cirsium arvense*). Later in the growing season, oxeye daisy was detected. This area is heavily used by boaters and will require continuous vigilant weed control due to the heavy use that it receives.

	Site 6S07	Vegetative cover (%)	Weed Cover (%)
2007	Baseline	95	50
	After Treatment	85	5
2008	Baseline	85	5
	After Treatment	85	1
2009	Baseline	85	1
	After Treatment	85	1
2010	Baseline	90	2
	After Treatment	90	3
2011	Baseline	90	3
	After Treatment	85	2
	Baseline	85	1

2012	After Treatment	80	4
2013	Baseline	85	1
	After Treatment	80	7
2014	Baseline	85	1
	After Treatment	80	2
2015	Baseline	85	2
	After Treatment	80	3
2016	Baseline	80	1
	After Treatment	80	1
2017	Baseline	85	1
	After Treatment	80	1
2018	Baseline	85	1
	After Treatment	80	2
2019	Baseline	80	2
	After Treatment	90	5
2020	Baseline	80	2
	After Treatment	80	2

Site 7S09

This site includes various locations along the north side of the concrete flume between the headworks and Pacific Park. Localized communities of knapweed were observed to the east of Pacific Park. Dandelion was also detected. This area was successfully treated in 2020 with only a residual amount of dandelion persisting.

	<i>Site 7S09</i>	<i>Vegetative cover (%)</i>	<i>Weed Cover (%)</i>
2009	Baseline	95	15
	After Treatment	85	2
2010	Baseline	75	0
	After Treatment	75	2
2011	Baseline	15	2
	After Treatment	40	5
	Baseline	20	5

2012	After Treatment	20	10
2013	Baseline	25	2
	After Treatment	30	4
2014	Baseline	25	<1
	After Treatment	50	2
2015	Baseline	60	1
	After Treatment	60	3
2016	Baseline	85	2
	After Treatment	95	0
2017	Baseline	95	1
	After Treatment	98	2
2018	Baseline	95	3
	After Treatment	98	2
2019	Baseline	95	2
	After Treatment	98	0
2020	Baseline	95	1
	After Treatment	95	1

Site 8S09

Site 8S09 was identified during the 2009 fall survey and began receiving herbicide treatment in 2010. This site includes areas of Pacific Park around the parking area, picnic areas, and outhouse. The 2020 inspections detected some dandelion distributed throughout the park. The grass is healthy and well established.

	<i>Site 8S09</i>	<i>Vegetative cover (%)</i>	<i>Weed Cover (%)</i>
2010	Baseline	85	10
	After Treatment	80	2
	Baseline	85	4

2011	After Treatment	85	5
2012	Baseline	85	10
	After Treatment	75	1
2013	Baseline	90	1
	After Treatment	95	3
2014	Baseline	95	<1
	After Treatment	90	<1
2015	Baseline	95	<1
	After Treatment	90	0
2016	Baseline	95	1
	After Treatment	95	1
2017	Baseline	98	2
	After Treatment	99	1
2018	Baseline	98	2
	After Treatment	99	1
2019	Baseline	99	1
	After Treatment	98	2
2020	Baseline	99	1
	After Treatment	99	1

SITE 9S09

Site 9S09 was identified during the 2013 survey and includes the area surrounding the generator enclosure. The final 2020 inspection located no vegetation within the generator enclosure and no invasives outside.

	<i>Site 9S09</i>	<i>Vegetative cover (%)</i>	<i>Weed Cover (%)</i>
2013	Baseline	3	2
	After Treatment	0	0
2014	Baseline	1	1
	After Treatment	0	0
2015	Baseline	0	0
	After Treatment	0	0

2016	Baseline	0	0
	After Treatment	0	0
2017	Baseline	1	1
	After Treatment	0	0
2018	Baseline	1	1
	After Treatment	0	0
2019	Baseline	2	1
	After Treatment	0	0
2020	Baseline	2	1
	After Treatment	2	1

SITE 10S17

Site 10S17 is the hillside above the forebay and was noted as an area of concern during an inspection by the Flathead County Weed Control Department (FCWCD) in fall of 2017. The area was recently disturbed during a construction project. Past treatments have been successful, only dandelion was detected during both surveys.

	<i>Site 10S17</i>	<i>Vegetative cover (%)</i>	<i>Weed Cover (%)</i>
2018	Baseline	95	4
	After Treatment	90	2
2019	Baseline	95	2
	After Treatment	97	1
2020	Baseline	95	2
	After Treatment	95	2

SITE 11S17

Site 11S17 is on the hillside above the bifurcation. The open meadow and hillside south of the bifurcation has scattered spotted knapweed, dandelion, and houndstongue. The area

was another site identified by the FCWCD which required continued attention. Herbicide treatment in 2020 was largely effective at controlling mullein and dandelion, however, knapweed and Canada thistle persist in this area and required a third late summer treatment.

	<i>Site 11S17</i>	<i>Vegetative cover (%)</i>	<i>Weed Cover (%)</i>
2018	Baseline	90	5
	After Treatment	95	3
2019	Baseline	90	3
	After Treatment	95	2
2020	Baseline	90	5
	After Treatment	90	2

SITE 12S17

Site 12S17 is along the utility line. During the both inspections several patches of knapweed was detected. Area was successfully treated post survey. We may consider planting grass seed fall of 2021 to discourage weed growth.

	<i>Site 12S17</i>	<i>Vegetative cover (%)</i>	<i>Weed Cover (%)</i>
2019	Baseline	93	3
	After Treatment	97	1
2020	Baseline	93	2
	After Treatment	93	1

SITE 1N19

Site 1N19 was established in 2019 due to a 2018 construction area for a survey marker. Area was successfully treated in 2019 and continues to be clear of any foliage.

	<i>Site 1N19</i>	<i>Vegetative cover (%)</i>	<i>Weed Cover (%)</i>
2019	Baseline	10	1
	After Treatment	25	1
2020	Baseline	5	0
	After Treatment	0	0

4.0 TREATMENT

Each of the weed treatment areas were treated with an herbicide application in 2020. These applications were applied by Sandry Construction and all required documentation has been supplied to the Flathead County Weed District for each day herbicides were applied. These forms include control methods used (chemical rate and amount applied), the date, time, and weather at the time the control methods were implemented. All sites were treated with a combination of the following herbicides and mixed with surfactants as needed to be effective:

Trade Name	EPA Registration	Active Ingredient
Transline®	62719-259	Clopyralid
Milestone®	566191-89-7	Aminopyralid
Amine®	34704-120	2-4-D

Successfully treating noxious weeds with herbicides requires timing for the target species and favorable conditions, specifically, clear weather with light to no winds. Herbicide treatments occurred over several days between June 9, 2020 and October 3, 2020.

The applicator used a handheld spray gun to complete the treatments. Documentation of the 2020 herbicide treatments are included Appendix A.

5.0 RESULTS

The Bigfork Noxious Weed Spring Survey was performed on May 5, 2020. The follow-up summer survey was conducted July 8, 2020. These surveys confirmed that sites continue to maintain a noxious weed cover that is less than or equal to three percent apart from site 4N17 and 11S17. Site 4N17, the Swan River Natural Trail East Entrance Parking Lot was extended in 2019 to include the land south to the Swan River boarding the Swan River Road. This area had several patches of spotted knapweed and will require at least one more year of focused treatment. Site 11S17 is a large area and patches continue to surface in different areas every year. PacifiCorp will continue to be diligent in treating these areas. PacifiCorp removed shrubs and the scattered weeds at site 1S5 in 2020. As in previous years, at no time did the treatments throughout the project result in completely denuded soils that would have required revegetation to control the reestablishment of noxious weeds or contribute to potential erosion. Except for 9S09, this is a fenced generator facility that is void of all vegetation for operations. Photographs of all sites were taken during the spring baseline survey prior to any treatment and again following herbicide application in the summer survey to document the effectiveness of the treatments (Appendix B).

Overall, the treatments have maintained the cover of grasses and native forbs. Noxious weed density continues to be moderate. The Swan River Nature Trail (2N05) continues to be established with moderate amounts of knapweed in areas that are inaccessible to truck-mounted sprayers and will require special attention with backpack spraying. In other areas, foot traffic and vehicular use is creating soil disturbance which allows for weed growth, particularly at Kearney Rapids Boat Launch (6S07) and Pacific Park (8S09).

In undisturbed areas away from roadways, the treatment program is proving to be effective at keeping the weed population in check. Individual weeds are being found across the entire project but have not yet established large colonies. Multi-seasonal spraying will be employed site-wide to bring late season weed populations under control.

PacifiCorp will continue these treatments as needed through the duration of the FERC license and will provide annual reports by January 31 the following year.

As required in the order approving the Noxious Weed Control Plan, public information signs have been installed in the FERC project area. Noxious Weed Management Area signs have been placed in treatment areas accessible to the public to inform them of these management activities. Additional signs located at the powerhouse entrance, entrance to Swan River Nature Trail, and the entrance to Pacific Park inform the public about local noxious weeds and measures that should be taken to prevent their spread. These signs are included as Appendix C to this report.

6.0 MANAGEMENT RECOMENDATIONS

PacifiCorp conducts two noxious weed surveys, in spring and summer. For recommendations on top of the surveys, PacifiCorp has contracted Sandry Construction to provide recommendations related to controlling noxious weeds at the project site. Sandry Construction will provide, on an as needed basis, recommendations to reduce any spread of noxious weeds including, but not limited to, native seed mixes to be used for revegetation. Upon approval, Sandry Construction treated recommended sites. PacifiCorp recommends that sites continue to be monitored annually and treated as needed to control noxious weeds. It is anticipated that annual to biennial treatment should be sufficient to prevent the reestablishment of weeds at each site.

7.0 REFERENCES

- Montana Weed Control Act. 2015. Montana Department of Agriculture accessed at: <https://agr.mt.gov/Weeds>. November 17, 2020
- Flathead County. 2017. Flathead County Declared Noxious Weeds effective February 2017 accessed at: <https://flathead.mt.gov/weeds/FlatheadCountyDeclaredNoxiousWeeds.php>. November 17, 2020.
- Montana Department of Agriculture. 2019. Montana Noxious Weed List effective June 2019. Available at: <http://agr.mt.gov/weeds>. November 17, 2020.
- Thi University of Georgia Center for Invasive Species and Ecosystem Health. Noxious Weed Distribution Maps accessed at: EDDMapSWest. <https://www.eddmaps.org/>. November 17, 2020.
- Montana Weed Control Association (MWCA) (2019). Weed ID accessed at: <https://www.mtweed.org/weeds/weed-id/>. November 17, 2020.

Appendix A

Documentation of 20154 Herbicide Treatment

Attachment D

FLATHEAD COUNTY WEED DISTRICT -1257 Willow Glen Drive—Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 2 Date of Application: 6.9.2020
 Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal

State

County

Private XLocation description (mile markers, etc): Swan Nature trail North + South sideAcres treated (#): 63Hour began: 6 am Hour finished: 9 am Actual spray time: 3 Total hours: 3Wind direction: N S E W Wind velocity: 0-3 mph; 4-7 mph; 8-12 mphApproximate temperature: 47 Significant weather factors: N/a

Noxious weeds treated:

☒ Spotted knapweed ☒ Canada thistle ☐ Leafy Spurge ☒ St. Johnswort
☐ Dalmatian Toadflax ☒ Common tansy ☒ Oxeye Daisy ☒ Orange hawkweed
☐ Tansy Ragwort ☒ Houndstongue ☐ Tall buttercup OTHER: Mullin, dandelion, Cinquefoil.

Trade name: (refer to other side)

Chemical(s) applied:

Quantity used:

Mixture rate:

Milestone4.41 oz7 oz. per 100 gal

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Amine 420.16 oz1 quart per 100 galCarrier gallons used: 63

Surfactant total:

1 quart per 100 gal.

Description:

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carboxylic acid, 4-amino-3,6-dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo:

Special management posting areas:

Was application enforcement related?

Yes, was application method reviewed with landowners?

LANDOWNER SIGNATURE: _____ DATE: _____

Note: All equipment is 20 gallons per acre unless otherwise noted.

OFFICIAL RECORD - DO NOT DESTROY FOR _____

FLATHEAD COUNTY WEED DISTRICT -1257 Willow Glen Drive - Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 2 Date of Application: 6.9.2020
 Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal

State

County

Private

☒

Location description (mile markers, etc): East side of road along Swan River Rd Bridge

Acres treated (#): 14

Hour began: 9:20 Hour finished: 9:30 Actual spray time: 10 Min Total hours: 10 Min

Wind direction: N S E (W) Wind velocity: (0-3 mph) 4-7 mph; 8-12 mph

Approximate temperature: 50 Significant weather factors: N/A

Noxious weeds treated:

☒ Spotted knapweed☐ Canada thistle☐ Leafy Spurge☐ St. Johnswort☐ Dalmatian Toadflax☒ Common tansy☒ Oxeye Daisy☐ Orange hawkweed☒ Tansy Ragwort☐ Houndstongue☐ Tall buttercupOTHER: dandelion, mullein

Chemical(s) applied:

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Milestone0.98 oz7 oz. per 100 gal

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Amine 44.48 oz1 quart per 100 gal

Carrier gallons used:

14

Surfactant total:

1 quart per 100 gal

Description:

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carboxylic acid 4-amino-3,6</u> <u>dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo: _____

Special management posting areas: _____

Was application enforcement related? _____

If yes, was application method reviewed with landowners? _____

LANDOWNER SIGNATURE: _____ DATE: _____

Note: All equipment is 20 gallons per acre unless otherwise noted.

Attachment D

FLATHEAD COUNTY WEED DISTRICT -1257 Willow Glen Drive - Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 2 Date of Application: 6-9-2020
 Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal

State

County

Private

X

Location description (mile markers, etc): Fox hole areaAcres treated (#): .79Hour began: 10:15 Hour finished: 12:00 Actual spray time: 1.75 Total hours: 1.75Wind direction: N S E (W) Wind velocity: 0-3 mph; 4-7 mph; 8-12 mphApproximate temperature: 60 Significant weather factors: n/a

Noxious weeds treated:

☒ Spotted knapweed ☒ Canada thistle ☐ Leafy Spurge ☒ St. Johnswort
☐ Dalmatian Toadflax ☒ Common tansy ☒ Oxeye Daisy ☒ Orange hawkweed
☐ Tansy Ragwort ☒ Houndstongue ☐ Tall buttercup OTHER: mullein, dandelion

Chemical(s) applied:

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Milestone5.53 oz7 oz. per 100 gal

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Amine 425.28 oz1 quart per 100 galCarrier gallons used: 79

Surfactant total:

1 quart per 100 gal

Description:

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carbolic acid, 4-amino-3,6</u> <u>dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo: _____

Special management posting areas: _____

Was application enforcement related? _____

If yes, was application method reviewed with landowners? _____

LANDOWNER SIGNATURE: _____ DATE: _____

Note: All equipment is 20 gallons per acre unless otherwise noted.

Attachment D

FLATHEAD COUNTY WEED DISTRICT -1257 Willow Glen Drive - Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 2 Date of Application: 6.15.2020
 Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal

State

County

Private ☒

Location description (mile markers, etc): Foxhole area, 1519 Maintenance Rd., North side, Pacific Park

Acres treated (#): 1.4

Hour began: 6:50 Hour finished: 11:15 Actual spray time: 4.25 Total hours: 4.5

Wind direction: N S E W Wind velocity: 0-3 mph; 4-7 mph; 8-12 mph

Approximate temperature: 50 Significant weather factors: none

Noxious weeds treated:

☒ Spotted knapweed ☒ Canada thistle ☐ Leafy Spurge ☐ St. Johnswort
☐ Dalmatian Toadflax ☒ Common tansy ☐ Oxeye Daisy ☒ Orange hawkweed
☐ Tansy Ragwort ☒ Houndstongue ☐ Tall buttercup OTHER: dandelion, mullein

Chemical(s) applied:

Trade name: (refer to other side) <u>Milestone</u>	Quantity used: <u>9.8 oz</u>	Mixture rate: <u>7 oz. per 100 gal</u>
Trade name: (refer to other side) <u>Amine 4</u>	Quantity used: <u>44.8 oz</u>	Mixture rate: <u>1 quart per 100 gal</u>
Carrier gallons used: <u>140</u>	Surfactant total: <u>1 quart per 100 gal</u>	

Description:

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carboxylic acid, 4-amino-3,6-dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo:

Special management posting areas:

Was application enforcement related?

If yes, was application method reviewed with landowners?

LANDOWNER SIGNATURE: DATE:

Note: All equipment is 20 gallons per acre unless otherwise noted.

OFFICIAL RECORD DO NOT DESTROY FOR

Attachment D

FLATHEAD COUNTY WEED DISTRICT -1257 Willow Glen Drive - Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 2 Date of Application: 6.19.2020
 Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal

State

County

Private ☒Location description (mile markers, etc): Trail North of Maintenance Rd., 1519Acres treated (#): 23Hour began: 9:15 Hour finished: 9:55 Actual spray time: 40 min Total hours: 40 minWind direction: N S ☒ E W Wind velocity: 0-3 mph 4-7 mph; 8-12 mphApproximate temperature: 60 Significant weather factors: none

Noxious weeds treated:

☒ Spotted knapweed ☒ Canada thistle ☐ Leafy Spurge ☐ St. Johnswort
☐ Dalmatian Toadflax ☐ Common tansy ☐ Oxeye Daisy ☒ Orange hawkweed
☐ Tansy Ragwort ☒ Houndstongue ☐ Tall buttercup OTHER: dandelion, mullein

Chemical(s) applied:

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Milestone1.61 oz7 oz. per 100 gal

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Amine 47.36 oz1 quart per 100 galCarrier gallons used: 23

Surfactant total:

1 quart per 100 gal

Description:

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carbolic acid, 4-amino-3,6</u> <u>dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo:

Special management posting areas:

Was application enforcement related?

If yes, was application method reviewed with landowners?

LANDOWNER SIGNATURE: _____ DATE: _____

Note: All equipment is 20 gallons per acre unless otherwise noted.

Attachment D

FLATHEAD COUNTY WEED DISTRICT -1257 Willow Glen Drive--Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 5 Date of Application: 6.19.2020
 Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal

State

County

Private ☒

Location description (mile markers, etc): Pacificorp access rd. 7509-12517
S. of Canal trail going up hill south of Canal

Acres treated (#): 12

Hour began: 10:10 Hour finished: 11:30 Actual spray time: 1 hr 20 min Total hours: 1 hr 20 min

Wind direction: N S ☒ E W Wind velocity: 0-3 mph 4-7 mph; 8-12 mph

Approximate temperature: 60 Significant weather factors: none

Noxious weeds treated:

☒ Spotted knapweed ☒ Canada thistle ☐ Leafy Spurge ☒ St. Johnswort
☐ Dalmatian Toadflax ☒ Common tansy ☐ Oxeye Daisy ☒ Orange hawkweed
☐ Tansy Ragwort ☒ Houndstongue ☐ Tall buttercup OTHER: mullein, dandelion

Chemical(s) applied:

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Milestone0.84 oz7 oz. per 100 gal

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Amine 43.84 oz1 quart per 100 galCarrier gallons used: 12

Surfactant total:

1 quart per 100 gal

Description:

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carboxylic acid, 4-amino-3,6-dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo:

Special management posting areas:

Was application enforcement related?

If yes, was application method reviewed with landowners?

LANDOWNER SIGNATURE: _____ DATE: _____

Note: All equipment is 20 gallons per acre unless otherwise noted.

FLATHEAD COUNTY WEED DISTRICT -1257 Willow Glen Drive - Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 5 Date of Application: 6.19.2020
 Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal _____ State _____ County _____ Private X

Location description (mile markers, etc): Foxhole area

Acres treated (#): 23
 Hour began: 11:35 Hour finished: 12:15 Actual spray time: 40 min Total hours: 40 min
 Wind direction: N S E W Wind velocity: 0-3 mph 4-7 mph; 8-12 mph
 Approximate temperature: 70 Significant weather factors: none

Noxious weeds treated:

☒ Spotted knapweed ☒ Canada thistle _____ Leafy Spurge _____ St. Johnswort
 _____ Dalmatian Toadflax _____ Common tansy _____ Oxeye Daisy _____ Orange hawkweed
 _____ Tansy Ragwort ☒ Houndstongue _____ Tall buttercup OTHER: mullein, dandelion

Chemical(s) applied:

Trade name: (refer to other side) <u>Milestone</u>	Quantity used: <u>1.61 oz</u>	Mixture rate: <u>7 oz. per 100 gal</u>
Trade name: (refer to other side) <u>Amine 4</u>	Quantity used: <u>7.36 oz</u>	Mixture rate: <u>1 quart per 100 gal</u>
Carrier gallons used: <u>23</u>	Surfactant total: <u>1 quart per 100 gal</u>	

Description: _____

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carbolic acid, 4-amino-3,6</u> <u>dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo: _____

Special management posting areas: _____

Vas application enforcement related? _____

If yes, was application method reviewed with landowners? _____

LANDOWNER SIGNATURE: _____ DATE: _____

Note: All equipment is 20 gallons per acre unless otherwise noted.

Attachment D

FLATHEAD COUNTY WEED DISTRICT -1257 Willow Glen Drive - Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 5 Date of Application: 6.20.2020
 Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal

State

County

Private ☒Location description (mile markers, etc): Road/Trail off nature trailAcres treated (#): 5Hour began: 8:00 Hour finished: 9:30 Actual spray time: 1.5 Total hours: 1.5Wind direction: N S E W Wind velocity: 0-3 mph; 4-7 mph; 8-12 mphApproximate temperature: 65 Significant weather factors: none

Noxious weeds treated:

☒ Spotted knapweed ☒ Canada thistle ☐ Leafy Spurge ☒ St. Johnswort
☐ Dalmatian Toadflax ☐ Common tansy ☒ Oxeye Daisy ☒ Orange hawkweed
☐ Tansy Ragwort ☒ Houndstongue ☐ Tall buttercup OTHER: mullein, dandelion, cinquefoil

Chemical(s) applied:

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Milestone3.5 oz7 oz. per 100 gal

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Amine 416 oz1 quart per 100 galCarrier gallons used: 50

Surfactant total:

1 quart per 100 gal

Description:

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carboxylic acid: 4-amino-3,6</u> <u>dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo:

Special management posting areas:

Was application enforcement related?

If yes, was application method reviewed with landowners?

LANDOWNER SIGNATURE: _____ DATE: _____

Note: All equipment is 20 gallons per acre unless otherwise noted.

Attachment D

FLATHEAD COUNTY WEED DISTRICT -1257 Willow Glen Drive - Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 5 Date of Application: 6.20.2020
 Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal

State

County

Private

☒Location description (mile markers, etc): Trail off south access road 12317Acres treated (#): 5Hour began: 6:30 Hour finished: 7:30 Actual spray time: 1 hr Total hours: 1Wind direction: N S E W Wind velocity: 0-3 mph 4-7 mph; 8-12 mphApproximate temperature: 65 Significant weather factors: none

Noxious weeds treated:

☒ Spotted knapweed ☐ Canada thistle ☐ Leafy Spurge ☐ St. Johnswort
☐ Dalmatian Toadflax ☐ Common tansy ☐ Oxeye Daisy ☒ Orange hawkweed
☐ Tansy Ragwort ☐ Houndstongue ☐ Tall buttercup OTHER: dandelion

Chemical(s) applied:

Trade name: (refer to other side) <u>Milestone</u>	Quantity used: <u>3.5 oz</u>	Mixture rate: <u>7 oz. per 100 gal</u>
Trade name: (refer to other side) <u>Amine 4</u>	Quantity used: <u>16 oz</u>	Mixture rate: <u>1 quart per 100 gal</u>
Carrier gallons used: <u>50</u>	Surfactant total: <u>1 quart per 100 gal</u>	

Description:

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carbolic acid, 4-amino-3,6</u> <u>dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo:

Special management posting areas:

Was application enforcement related?

If yes, was application method reviewed with landowners?

LANDOWNER SIGNATURE: _____ DATE: _____

Note: All equipment is 20 gallons per acre unless otherwise noted.

OFFICIAL RECORD - DO NOT DESTROY FOR UP TO 5 YEARS AFTER DATE OF APPLICATION

Attachment D

FLATHEAD COUNTY WEED DISTRICT -1257 Willow Glen Drive - Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 2 Date of Application: 6.20.2020
 Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal

State

County

Private ☒Location description (mile markers, etc): 4 bay / PenstocksAcres treated (#): 5Hour began: 10:00 Hour finished: 11:00 Actual spray time: 1 Total hours: 1Wind direction: N S E W Wind velocity: 0-3 mph 4-7 mph; 8-12 mphApproximate temperature: 65 Significant weather factors: none

Noxious weeds treated:

☒ Spotted knapweed ☒ Canada thistle ☐ Leafy Spurge ☐ St. Johnswort☐ Dalmatian Toadflax ☐ Common tansy ☒ Oxeye Daisy ☐ Orange hawkweed☐ Tansy Ragwort ☒ Houndstongue ☐ Tall buttercup OTHER: mullein, dandelion

Chemical(s) applied:

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Milestone3.5 oz7 oz. per 100 gal

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Amine 416 oz1 quart per 100 galCarrier gallons used: 50

Surfactant total:

1 quart per 100 gal

Description:

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carbolic acid, 4-amino-3,6</u> <u>dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo:

Special management posting areas:

Was application enforcement related?

If yes, was application method reviewed with landowners?

LANDOWNER SIGNATURE: _____ DATE: _____

Note: All equipment is 20 gallons per acre unless otherwise noted.

Attachment D

FLATHEAD COUNTY WEED DISTRICT -1257 Willow Glen Drive—Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 2 Date of Application: 6.24.2020
 Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal

State

County

Private

☒Location description (mile markers, etc): 4 Bay / PenstockAcres treated (#): 5Hour began: 8:30 Hour finished: 10:30 Actual spray time: 2 Total hours: 2Wind direction: (N) S E W Wind velocity: (0-3 mph) 4-7 mph; 8-12 mphApproximate temperature: 65 Significant weather factors: None

Noxious weeds treated:

☒ Spotted knapweed ☒ Canada thistle ☐ Leafy Spurge ☐ St. Johnswort
☐ Dalmatian Toadflax ☐ Common tansy ☒ Oxeye Daisy ☐ Orange hawkweed
☐ Tansy Ragwort ☒ Houndstongue ☐ Tall buttercup OTHER: mullein, dandelion

Chemical(s) applied:

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Milestone3.5 oz7 oz. per 100 gal

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Amine 416 oz1 quart per 100 galCarrier gallons used: 50

Surfactant total:

1 quart per 100 gal

Description:

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carbolic acid, 4-amino-3,6</u> <u>dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo: _____

Special management posting areas: _____

Was application enforcement related? _____

If yes, was application method reviewed with landowners? _____

LANDOWNER SIGNATURE: _____ DATE: _____

Note: All equipment is 20 gallons per acre unless otherwise noted.

OFFICIAL RECORD DO NOT DESTROY FOR UP TO 5 YEARS AFTER DATE OF APPLICATION

Attachment D

FLATHEAD COUNTY WEED DISTRICT - 1257 Willow Glen Drive - Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 2 Date of Application: 7.18.2020
 Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal _____ State _____ County _____ Private X

Location description (mile markers, etc): Boundary Line for FERC Fishing trail

Acres treated (#): 10
 Hour began: 9:00 Hour finished: 9:30 Actual spray time: .5 Total hours: .5
 Wind direction: N S E W Wind velocity: 0-3 mph 4-7 mph 8-12 mph
 Approximate temperature: 70 Significant weather factors: none

Noxious weeds treated:

☒ Spotted knapweed ☒ Canada thistle _____ Leafy Spurge _____ St. Johnswort
 _____ Dalmatian Toadflax _____ Common tansy ☒ Oxeye Daisy _____ Orange hawkweed
 _____ Tansy Ragwort ☒ Houndstongue _____ Tall buttercup OTHER: muller, dandelion

Chemical(s) applied:

Trade name: (refer to other side) <u>Milestone</u>	Quantity used: <u>.7</u>	Mixture rate: <u>7 oz. per 100 gal</u>
Trade name: (refer to other side) <u>Amine 4</u>	Quantity used: <u>3.2</u>	Mixture rate: <u>1 quart per 100 gal</u>
Carrier gallons used: <u>10</u>	Surfactant total: <u>1 quart per 100 gal</u>	

Description: _____

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carbolic acid 4-amino-3,6</u> <u>dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo: _____

Special management posting areas: _____

Vas application enforcement related? _____

If yes, was application method reviewed with landowners? _____

LANDOWNER SIGNATURE: _____ DATE: _____

Note: All equipment is 20 gallons per acre unless otherwise noted.

OFFICIAL RECORD - DO NOT DESTROY FOR AT LEAST 5 YEARS

Attachment D

FLATHEAD COUNTY WEED DISTRICT -1257 Willow Glen Drive - Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 2 Date of Application: 8.1.2020
 Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal _____ State _____ County _____ Private X

Location description (mile markers, etc): Reservoir project - Canal

Acres treated (#): 7
 Hour began: 6:30 Hour finished: 10:30 Actual spray time: 4 Total hours: 4
 Wind direction: N S E W Wind velocity: 0-3 mph 4-7 mph 8-12 mph
 Approximate temperature: 75 Significant weather factors: none

Noxious weeds treated:

☒ Spotted knapweed ☒ Canada thistle ☐ Leafy Spurge ☒ St. Johnswort
☐ Dalmatian Toadflax ☒ Common tansy ☒ Oxeye Daisy ☒ Orange hawkweed
☐ Tansy Ragwort ☐ Houndstongue ☐ Tall buttercup OTHER: mullein

Chemical(s) applied:

Trade name: (refer to other side) <u>Milestone</u>	Quantity used: <u>6.025</u>	Mixture rate: <u>7 oz. per 100 gal</u>
Trade name: (refer to other side) <u>Amine 4</u>	Quantity used: <u>22.08</u>	Mixture rate: <u>1 quart per 100 gal</u>
Carrier gallons used: <u>70</u>	Surfactant total:	<u>1 quart per 100 gal</u>

Description:

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carboxylic acid, 4-amino-3,6-dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo: _____

Special management posting areas: _____

Was application enforcement related? _____

If yes, was application method reviewed with landowners? _____

LANDOWNER SIGNATURE: _____ DATE: _____

Note: All equipment is 20 gallons per acre unless otherwise noted.

OFFICIAL RECORD - DO NOT DESTROY FOR AT LEAST 5 YEARS

Attachment D

FLATHEAD COUNTY WEED DISTRICT - 1257 Willow Glen Drive - Kalispell, MT 59901 - (406) 758-5798 - FAX (406) 758-5888

Applicator: Joe B + Rick S Equipment # 2 Date of Application: 8.3.2020Area of Application: Bigfork Hydroelectric Project

Please check one of the following:

Federal

State

County

Private

☒Location description (mile markers, etc): Parking lot projectAcres treated (#): 8Hour began: 6:00Hour finished: 9:00Actual spray time: 3Total hours: 3

Wind direction: N

S

E

W

Wind velocity: 0-3 mph

4-7 mph;

8-12 mph

Approximate temperature: 75Significant weather factors: none

Noxious weeds treated:

☒ Spotted knapweed☐ Canada thistle☐ Leafy Spurge☐ St. Johnswort☐ Dalmatian Toadflax☐ Common tansy☒ Oxeye Daisy☒ Orange hawkweed☐ Tansy Ragwort☒ Houndstongue☐ Tall buttercupOTHER: Mullein,

Chemical(s) applied:

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Milestone6.5 oz7 oz. per 100 gal

Trade name: (refer to other side)

Quantity used:

Mixture rate:

Amine 428. oz1 quart per 100 galCarrier gallons used: 80

Surfactant total:

1 quart per 100 gal.

Description:

Trade name: (refer to other side) <u>Milestone</u>	Trade name: (refer to other side) <u>Amine 4</u>
Manufacturer #: (refer to other side) <u>Dow AgroSciences</u>	Manufacturer #: (refer to other side) <u>Tekno2 Inc</u>
E.P.A. Registration #: <u>62719-519</u>	E.P.A. Registration #: <u>42750-19-55467</u>
Active ingredient: <u>aminopyralid: 2-pyridine</u>	Active ingredient: <u>2,4-Dichlorophenoxyacetic acid</u>
Active ingredient: <u>Carboxylic acid, 4-amino-3,6-dichloro-2-pyridinecarboxylic acid</u>	Active ingredient: <u>dimethaline salt</u>

Memo:

Special management posting areas:

Was application enforcement related?

If yes, was application method reviewed with landowners?

LANDOWNER SIGNATURE: _____ DATE: _____

Note: All equipment is 20 gallons per acre unless otherwise noted.

OFFICIAL RECORD - DO NOT DESTROY FOR AT LEAST 5 YEARS

Appendix B

Noxious Weed Photographs – Baseline & Treatment

Appendix B Photos

1) 1N05, fenced in area near the old fish ladder, before and after treatment.

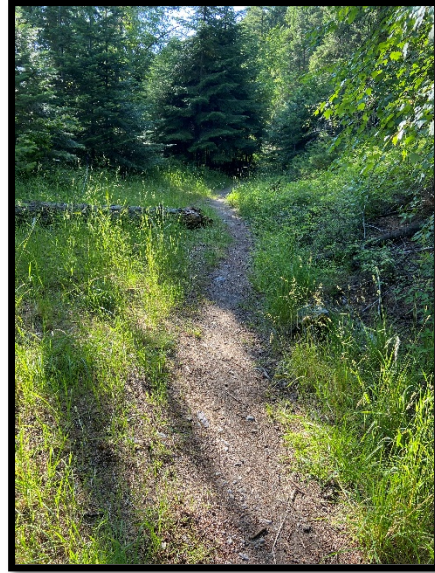


2) 2N05, various locales along the Swan River Nature Trail, before and after treatment.



Appendix B Photos

- 3) 3N17, a side trail south of the Swan River Nature Trail, before and after treatment.



- 4) 4N17, parking area at the east trailhead for the Swan River Nature Trail, before and after treatment.



Appendix B Photos

5) 1S05, the hill behind the powerhouse.



6) 2S05, the flowline east to the FERC boundary, before and after treatment.



Appendix B Photos

7) 3S05, canal intake and access to South Shore River, before and after treatment.



8) 4S05, Pacific Park and road along canal, before and after treatment.



9) 5S07, South Shore kayaker access parking lot, before and after treatment.



Appendix B Photos

10) 6S07, Kearney Rapids boat launch at Swan River Bridge, before and after treatment.



11) 7S09, concrete flume from headworks to Pacific Park, before and after treatment.



Appendix B Photos

- 12) 8S09, areas of Pacific Park around the parking area, picnic areas, and outhouse, before and after treatment.



- 13) 9S09, backup generator enclosure, before and after treatment.



- 14) 10S17, hillside above the forebay, before and after treatment.



Appendix B Photos

15) 11S17, hillside above the bifurcation, before and after treatment.



16) 12S17, communications line clearing along concrete flume, before and after treatment.



17) 1N19, survey marker on the north side of the nature trail, before and after treatment.



Appendix C

Noxious Weed Public Information Signs

Please Help PacifiCorp Prevent Noxious Weeds



Common Tansy



Spotted Knapweed



Oxeye Daisy



Canada Thistle

Please remove noxious weeds from your clothing, vehicle, and pets before entering the area and avoid driving or walking through areas where noxious weeds are present. If you encounter any noxious weed infestations please alert PacifiCorp at 503-813-6666 or recreation@pacificorp.com.

Thank you for your assistance.