

Regional District of Kootenay Boundary

Area D&E Invasive Plant Program Report 2020



Common tansy



Common bugloss



Japanese knotweed

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Table of Contents

1.0	Education and Awareness.....	3
2.0	Inventory and Mapping.....	3
3.0	On-the-Ground Invasive Plant Management Completed.....	4
3.1	Manual Treatment.....	4
3.2	Biological Control.....	5
3.3	Herbicide Treatment.....	6
3.4	Boundary Spray Equipment Loan-out Program.....	9
4.0	Management and Coordination.....	9
5.0	Compliance and Enforcement	10
6.0	Applied Research	11
7.0	Financial Summary.....	11
8.0	Opportunities and Challenges.....	16
9.0	Recommended Program 2021	16
10.0	Summary	18

List of Tables

Table 1. Area Treated by Program in the Boundary portion of RDKB during 2020.....	4
Table 2. New Invaders Program - Area Treated with Herbicide in 2020.	8
Table 3. Area of Invasive Plants Mechanically Treated in 2020 by RDKB New Invaders Program.....	5
Table 4. Breakdown of Treatment Expenditures for Weed Function.....	13
Table 5. Invasive Plant Program Income and Expenditure Summary - Breakdown by Funding Agency.....	15

List of Figures

Figure 2. Breakdown of Expenditures by Activity for RDKB Area D&E weed function.....	12
Figure 3. Proportion of Expenditures on Invasive Plant Management by Partner.	14

List of Appendices

APPENDIX 1. Cost Share Program Information handout	
APPENDIX 2. New Invaders Authorization Form	
APPENDIX 3. Maps showing work completed by RDKB programs in 2020	

Regional District of Kootenay Boundary Invasive Plant Program Report for 2020

The 2020 Regional District of Kootenay Boundary (RDKB) invasive plant program was funded through rural taxation in Area D&E and an education and awareness grant from the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD). The program follows an Integrated Pest Management approach involving the use of mechanical removal, biocontrol insects, prevention and training to landowners and herbicide use.

The programs are intended to encourage and support Boundary residents to fulfill their responsibility under the Weed Control Act to control designated noxious weeds on their property. The program includes the new invaders program targeted to control regional high priority species with limited distribution, cost share program targeted to control of more widespread species, and an equipment loan out program to assist landowners wanting to do treatment themselves. Through a partnership with the Boundary Invasive Species Society outreach is offered to landowners, biocontrol insects are released and monitored, and the program is coordinated with other land managers doing work in the Boundary. In addition, the RDKB administered funding for nine other stakeholders in addition to doing treatment in landfills through the landfill maintenance program. This report includes information activities for RDKB Area D&E weed function and contains financial totals for the partners in the Boundary. Further information on work across the region by all partners is included in an annual report that should be available later in March.

1.0 Education and Awareness

The RDKB has formed a partnership with BISS to deliver education and awareness activities in the Boundary on behalf of the RDKB; however, due to COVID19 restrictions, the program focused on social media and newspapers. Site visits to properties were completed upon request and many information requests were responded to through email and phone calls. Details on activities of the BISS are contained in the BISS Annual Report for 2020 that should be available later in March.

2.0 Inventory and Mapping

The RDKB contractors collected inventory information while doing work on private properties. This year digital map layers were used by BISS staff and RDKB treatment contractors on iPads using the GIS Collector app that syncs data to an online database. Information collected included inventory, monitoring, and treatment records. The data collected was exported and used for all reporting. Digital layers provided included cadastral layers, house numbers, roads, water features, wells, well buffers, wildlife habitat areas, at risk plant locations, lot lines, FortisBC pole numbers, no spray requests, and MOTI pits. The app has a background image making navigation to specific points easy. Invasive plant layers were uploaded as reference layers and treatment sites symbolised to enable easy navigation to treatment site locations. The GIS online database of information on invasive plant locations can easily be shared with all

partners. Guides for collecting data are available to aid in using the system.

All the new invasive plant sites and operations records were entered in the provincial online Invasive Alien Plant Program (IAPP) with the agency or employer identified as RDKB 2020. All invasive plant treatment by all partners is housed in this system to enable coordinated management planning across the region. Each stakeholder contributed resources to have the data entered into IAPP and each stakeholder has a unique paper file ID that can be used to separate who funded which treatment. All data entry was completed by BISS staff.

3.0 On-the-Ground Invasive Plant Management Completed

The RDKB operated treatment programs within the Boundary Electoral Areas D & E on private land to encourage and support landowners to control designated noxious weeds. Table 1 includes the area treated by each program operated in the Boundary. On ground treatment by other stakeholders have not been included in this section since it has already been summarized in the separate stakeholder reports.

Table 1. Area Treated by Program in the Boundary portion of RDKB during 2020.

Program Description	Herbicide Area Treated (ha)	Manual Area Treated (ha)
Boundary New Invaders Program	45.13	0.26
Boundary Cost Share Program	28.13	N/A
Boundary Loan Out Program	14.2	N/A
Subtotal Weed Function	87.46	0.26
Boundary Landfills	3.72	0
Christina Lake Park	0	0.0003
Total Area Treated by RDKB (ha)	3.72	0.26

3.1 Manual Treatment

The program included a manual component this year targeted at priority weed species within riparian areas or well buffers. BISS staff completed the pulling and digging at sites within pesticide free zones where chemical treatment was not an option. The crew also removed thistle along the Canada-US border as part of the Weeds Cross Borders Partnership. Invasive plant species targeted included: common bugloss, field scabious, hoary alyssum, Teasel and scotch thistle. The bulk of the time was spent removing common bugloss on the property at Nicholson creek as part of the coordinated management plan. Only 2.3 km of the border pull for nodding thistle was completed this year due to fire risk later in the season. The crews encountered



Nodding thistle patch along border to be dug out.

quite a lot of plants since some portions were missed due to fire risk the past few years. Efficiencies were achieved by having manual crew completing work for other stakeholders reducing travel costs for treatments. The majority of manual work done was on roadsides and paid by Min. Transportation and Infrastructure and on crown forest land. There was treatment of plumeless thistle in Christina Lake Community Park (0.003 ha) paid for through the Area C parks function. Details of where treatments occurred are not included in this report but are included on maps in the Appendix of this report.

Table 3. Area of Invasive Plants Mechanically Treated in 2020 by RDKB New Invaders Program

Invasive Plant	# Sites	Area by Species (ha)
Common bugloss (ANCH OFF)	1	0.150
Scotch thistle (ONOP ACA)	2	0.050
Field scabious (KNAU ARV)	1	0.035
Nodding thistle (CARD NUT)	1	0.010
Teasel (DIPS FUL)	1	0.010
Hoary alyssum (BERT INC)	1	0.003
TOTAL (ha)	7	0.258

3.2 Biological Control

Bio-control activities in the Boundary are delivered through cooperation with the FLNRORD, Boundary Invasive Species Program and the Regional District of Kootenay Boundary. The program did some local collecting of *Mogulones crucifer* for hound's tongue which were shipped to other regions. *Trichosiocalus horridus* insects were released on one property to control Nodding thistle. FLNRORD were not able to provide any other releases of insects this year. Suitable locations for collecting *Larinus planus* for Canada thistle were not found this year. Many of the biocontrol insects available are already widely distributed in the region. For a summary with the status of each species, please refer to the Boundary Invasive Species Program Annual Report for 2020 which will be available in early April.

There is one insect where we expect to be doing some re-distribution in coming years. *Aceria malherbae* is a mite that attacks field bindweed (*Convolvulus arvensis*). A privately owned site was found in the Hardy Mountain area to have a healthy population of this insect. Some plant material was collected and moved to a site in City Park in Grand Forks where there is a site that is irrigated and mowed. The release was done near the washrooms on the raised area since the lower fields flood in some freshets. Another site in Rock Creek on a mowed irrigated lawn showed signs of possibly having the mite present but there was not enough evidence to be sure. A sample was collected from the Grand Forks and has positively identified as the *Aceria malherbae* mite by Agriculture Canada entomologists.



Aceria malherbae was first released in 1998 east of Grand Forks, but there was no evidence of establishment. In 2016 two releases were purchased by the RDKB from a researcher in Alberta and released in the Midway and Grand Forks areas. The release west of Grand Forks was monitored in 2017 to 2019 and there was no evidence of establishment. The release near Midway showed evidence of establishment in monitoring done in 2017, 2018 and 2019.

Recommendations for 2021

- Monitoring should be done in spring of 2021 at all the releases for knapweed, toadflax and St John's wort done in the Rock Creek Fire area to assess establishment and population recovery post-fire. The results of this will identify if further releases are needed. Some requests from private landowners for insects in 2020 were received and collections and releases should focus on providing insects for those requests.

3.3 Herbicide Treatment

The herbicide component supports landowners to comply with their obligation to control designated noxious weeds. In the absence of enforcement of the Weed Control Act, the regional district has taken an approach to encourage landowners to control designated noxious weeds and invasive plants considered a high regional priority. The New Invaders Program assists landowners with control of regional high priority species and the Cost Share was created to encourage and help support landowners to control more widespread species. The equipment loan out program makes herbicide spray equipment available for landowners within the Boundary to use free of charge however they have to purchase their own herbicide. This three-tier support system has helped to encourage compliance with the Weed Control Act by many landowners.

New Invaders Program

The RDKB provided a New Invader Program involving treatment of up to five acres of a regional high priority species on private land at no cost to the landowner. The New Invaders program is focussed on species set as a regional priority in either category 1 Eradicate or Annual Control or Category 2: Control and Contain. This program helps to ensure the species are controlled on private land sites, while other partners focus their programs to treating the same species on other jurisdictions. By addressing the species on all jurisdictions, it assists in achieving the shared region wide objectives set for each species. Without this program it would be very difficult to achieve the region wide objectives in the absence of enforcement. Each landowner using the program receives information and advice on how they can maintain suppression of the target weed on their property in future years.

In 2020 the New Invaders Program focussed spring and summer treatments on hoary cress, leafy spurge, and common bugloss in May to July. Then field scabious in July. Common tansy was completed in September and October. Other invasive plant species treated on sites while treating new invader species (within the site boundaries, so

recorded on the records) included baby's breath, kochia, hoary alyssum, nodding thistle and as well as others.

Most of work completed was on priority species in the west Boundary and total area was 45.14 ha on 48 properties. The herbicides used are selected on a site-specific basis and primarily include the active ingredients aminopyralid, picloram, metsulfuron-methyl, and 2, 4D. Different herbicides or combinations are used depending on the site conditions and the target invasive plant.

Common bugloss made up the largest portion of treatment at approximately 28.55 ha on 29 properties. Monitoring of treatment effectiveness with different herbicides mixes and combinations from 2018 and 2019 has changed the timing and mixes used for controlling common bugloss. The new formulation of Grazon XC appears to be the most effective and is more accessible for landowners to purchase and do treatment themselves compared to some of the other mixes used. In the past the program had started treatment in April prior to bolting as suggested by the herbicide manufacturer, but effectiveness monitoring has shown the herbicide treatments are more effective after full flower in June to July. The fall treatments showed good results as well after the first light frost. This fall timing increases residual control into the second year and may be longer, more monitoring in 2021 is needed to determine the length of residual. Based on these findings the program has moved to timing treatment of common bugloss in June/July and fall. As with all years the weather (rain, wind and heat) presented challenges to treatment timing and required adaptation. Near the end of the season several contractors were brought into complete remaining Area E work.

The timing window for hoary cress was good this year and all sites on agricultural land (highest priority) were treated, but some non-agricultural sites in Bridesville were not completed as staff did not have enough time to get all the permissions in place before the effective treatment window passed. Total area treated of 4.09 ha.

All leafy spurge sites needing treatment were treated in the spring covering 0.94 ha on 7 properties. A landowner has taken on controlling the largest patch in the region using herbicide provided by FLNRORD for the crown portion of the site, so the RDKB and FLNRORD were able to focus contractor work on other sites which is positive.

The contractors treated common tansy on 11 properties totalling 6.60 ha which is down from last year. The largest infestation of tansy is in the Sidley area; the tansy originated on a property that is owned by an investment company who refuses to invest in management so at this time the program is not doing work on that property until the landowners make a commitment to doing some work themselves. Enforcement will likely be required to address that property. Overall less than half the common tansy sites are being treated each year on private land, as there are not enough resources or contractor capacity to complete all the work that should be done.

Several other species were treated within the boundaries of the sites while treating the priority species which is why the records show non-New Invader program species as treated (marked with * in table).

Table 2. New Invaders Program - Area Treated with Herbicide in 2020.

Invasive Plant	Area by Species (ha)
Common bugloss (ANCH OFF)	28.546
Common tansy (TANA VUL)	6.604
Heart-podded hoary cress (CARD DRA)	4.089
Hoary alyssum (BERT INC)*	2.331
Leafy spurge (EUPH ESU)	0.937
Nodding thistle (CARD NUT)	0.851
Baby's breath (GYPS PAN)	0.698
Diffuse knapweed (CENT DIF)*	0.477
Sulphur cinquefoil (POTE REC)*	0.329
Russian knapweed (ACRO REP)	0.133
Field scabious (KNAU ARV)	0.089
Kochia (KOCH SCO)	0.036
Scentless chamomile (MATR PER)	0.018
TOTAL (ha)	45.136

- *Indicates non-new invaders program species treated while the target species was treated or for work done on non-profit owned properties.*

Treatment was done in Area D on the Boundary Horse Association property and the Rock Creek Fairgrounds property to control hoary alyssum, sulphur cinquefoil, and diffuse knapweed. Since they are non-profit groups the cost share was not required. Nodding thistle in Area D has been added to the New Invaders list since there are only four known locations east of Area E. Two sites on private property were treated this year on the east side of Rural Grand Forks under the program.

Cost Share Program

The 50% Cost Share Program was continued this year to help stretch the budget to enable treatment of species other than those covered in the New Invaders program. The intent behind this program is to assist landowners and get them willing to start paying for weed management so they take responsibility. A copy of the program protocol is contained in Appendix 1. Information on the program was available at the RDKB office in Grand Forks but since it was closed most of the year, . Under the program, 28.1 ha on 29 properties was treated, which is slightly more than what was treated last year. Kootenay Weed Control and Southern Frontier Forestry Services did more private work, but so far only 18 of the 26 properties treated have submitted forms. It is likely that the remaining eight properties will not submit forms to receive the rebate.

The number of complaint calls from Rural Grand Forks area was low again this year. BISS staff conducting outreach and taking public calls have found that many landowners in Area D are frustrated with the lack of control by neighbours.

It is getting more difficult for landowners to purchase agricultural herbicides effective on hoary alyssum so it is likely people will opt for the cost share rather than having to purchase two herbicides and tank mix it themselves.

Spray Equipment Loan-out Program

Under this program Landowners are responsible for purchase of herbicides when equipment is borrowed. The types of equipment available through this program includes: a skid sprayer, tractor mount sprayer, 2 ATV mount sprayers, several backpacks and an ATV mount seeder.

The equipment loan-out program was operated by R. Davies based in the west end of Rural Grand Forks. Replacement materials (tank cleaner, and spray suits) were purchased so they could be provided with each loan out. Normally gloves, suits, dye, tank cleaner, safety glasses, and operating manual with safety guidelines are supplied with the equipment. The manuals that go out with the equipment include information on how to operate the equipment, how to calibrate the equipment, information on protective equipment, how to launder clothing, how to clean the tank after use, and precautions to protect the environment. Landowners borrowing the equipment are encouraged to call BISS or the manufacturer of the herbicide if they have any further questions about how to mix or apply the products properly.

This year there was an increase in uses over last year with fourteen loan outs totalling 14 ha. Several forms did not the area treated so actual area treated will be higher. The quad mount unit was used 5 times, the skid mount once and the tractor mount was used 6 times. Eight of loan outs were from Area D, one was from Christina Lake, and four were from Area E. Now that Dyvel DSP is no longer being stocked by Okanagan herbicide suppliers it is more difficult for landowners to purchase the most effective mix for hoary alyssum control and this has resulted in some landowners using the cost share program rather than equipment loan out program.

Delivery should be continued through R. Davies in 2021 since the equipment is being well maintained and at a convenient location for pickup for area D residents. Having a local farmer /fence contractor operating the program is a benefit as he can promote the program to many landowners.

4.0 Management and Coordination

The RDKB General Manager of Environmental Services provides administration services for the weed functions. The Boundary portion of the RDKB program is coordinated through the Boundary Invasive Species Society. The RDKB has been very supportive of invasive plant management activities by other stakeholders since it is an important component for achieving region wide objectives. The RDKB assisted nine other stakeholders in delivery of management programs during 2020. Participating stakeholders included Ministry of Transportation and Infrastructure, Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) (Range, Habitat, and Trails Management), BC Parks, FortisBC Inc., BC Hydro, and Fortis BC Energy Ltd.. Resources contributed by each partner were used to treat invasive plants on lands under their respective jurisdictions.

The work for all stakeholders was broken up into 3 contract areas: Area E - West Boundary; Area D - Rural Grand Forks and Granby valley and Area C - Christina Lake. An

open bid process was undertaken in 2017 and two contracts were renewed for 2020. The Area C and D work was completed by Kootenay Weed Control based out of Castlegar. The bulk of work in Area E was completed by Southern Frontier Forestry Services based out of Rock Creek. Two more contractors were hired to help complete the balance of work on crown lands in Area E. This system of one contract for all partner work has reduced the contract administration needs for the partners and improved program effectiveness by reducing travel costs and the risk of overlapping treatments.

It is very important in this program to have highly qualified contractors with experience working in the area since there is potential risk of errors. The program has tried to offer multi-year contracts to attract high quality contractors, or where possible continue to use the same contractors who perform well in an area for multiple years. This is a good strategy that will reduce risk of applicator error.

Recommendations for 2021:

1. Area C and D Invasive Plant Species Control Contract – Schedule 3 (Area D), 4 (Area C), work from 2017 RFQ – Kootenay Weed Control – Performance has been excellent overall with no major issues arising this season or in previous seasons. Recommend extending the contract with Kootenay Weed Control for up to 1 more year or alternatively direct awarding work in Area D and C. This contractor has been willing to complete cost share work which is a benefit.
2. Area E Invasive Plant Species Control Contract –Schedule 1 work from 2017 RFQ- Southern Frontier Forestry Services- Performance was good, equipment setup is very good, very professional, and only one issue arising this season. The issue was not herbicide related but was about driving off road in a grassland with a side by side leaving extensive tracks in the grassland rather than dragging hose to treat the areas off the access road. Recommend extending the contract with Southern Frontier Forestry Services for another year or direct awarding work in a scope he is able to complete. This contractor has been willing to complete cost share work which is a benefit.
3. Recommend offering two more contracts for Area E work in 2021. A contract with all MOTI pits, all main highways and some crown land (work suitable for a truck with hose and handgun. A second contract should be issued for more difficult to access crown land sites where a UTV is the most suitable equipment. Any trails and restoration work could be lumped into either contract since either type of equipment would be suitable.

5.0 Compliance and Enforcement

Under the Weed Control Act of BC landowners and land managers have a legal responsibility to control designated noxious weeds. Under the Forest and Range Practices Act woodlot owners have a legal responsibility to control designated invasive plants on the private portion of their woodlots. The RDKB does not currently have an enforcement bylaw, so relies heavily on education and encouraging compliance through

the programs it offers. There are landowners who refuse to control infestations of common tansy, hoary alyssum, and leafy spurge and enforcement will be needed to address infestations on these properties. There was a discussion call planned in fall 2020 to explore options but this was not completed. A field trip was done in August 2019 with the Electoral Area E director and several local farmers to view the direct impacts on farming of the lack of enforcement of noxious weed control. There had been discussion of doing a referendum on bylaw enforcement in fall 2018 but it was not pursued. The issue of enforcement is a complex and will require further investigation to understand costs, implications, and methodologies for implementation. The RDKB is currently piloting bylaw enforcement and municipal ticketing associated with non-adherence to RDKB regulatory bylaws. Once this pilot is completed the applicability of the enforcement of the *Weed Control Act of BC* may be pursued.

6.0 Applied Research

No research was completed this year. Year 2 of the goat grazing project was not implemented again this year because of Covid limitations and it has been difficult to find a suitable site that is on private land with a large dense hoary alyssum patches that has existing fencing to contain goats, is not located near Gilpin or Morrissey Bighorn sheep herds and has assurances it will not be sold or disturbed by the landowner during the multi-year project. It has not been easy to find a site that meets all these criteria. Completion of this project will be a priority for 2021.

7.0 Financial Summary

The program is funded through local taxation in addition to a grant received from the province. This section includes information on the Area D&E program. Figure 2 contains a breakdown of how resources were allocated considering only the private land program in Area D and E. Table 4 includes the breakdown of costs for the new invaders, cost share, and loan-out programs. Table 5 has a breakdown of new income and expenditures by partner while Figure 3 shows the proportion of expenditures by partner for 2020.

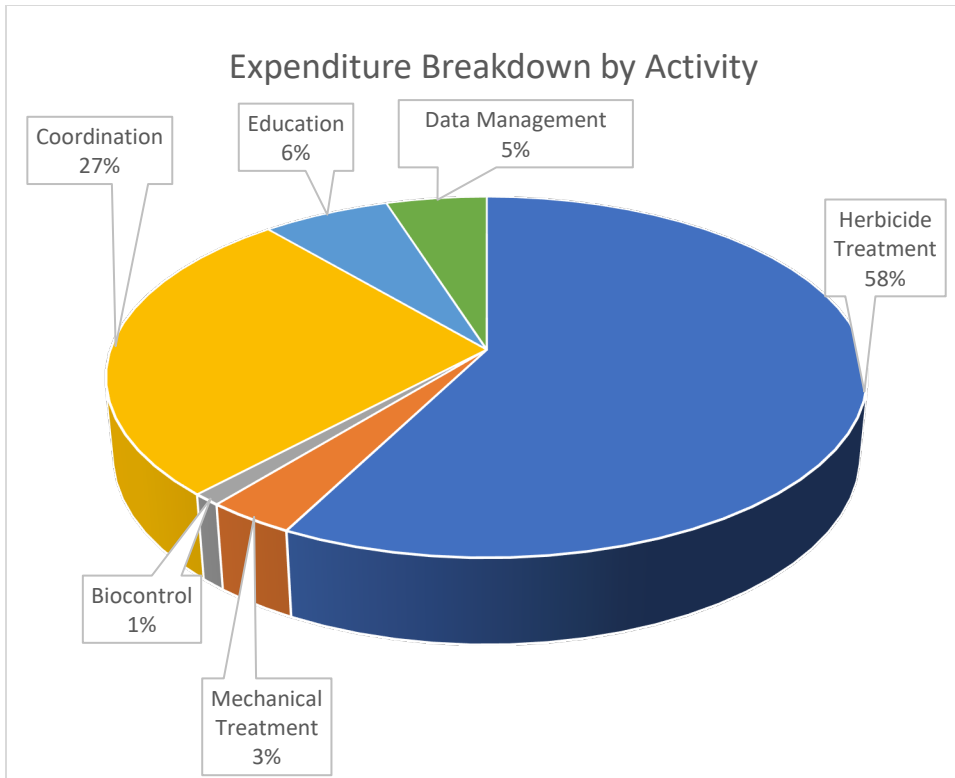


Figure 2. Breakdown of Expenditures by Activity for RDKB Area D&E weed function.

Table 4. Breakdown of Treatment Expenditures for Weed Function.

RDKB Area D&E Weed Function	Approved RDKB Budget Amounts 2020	Actuals to date Dec 31
EXPENDITURES		
Data entry, management and map database maintenance	\$3,500.00	\$3,096.34
Manual treatment by BISS	\$4,400.00	\$3,068.91
New Invaders Program- Chemical treatment by contractor	\$52,200.00	\$44,558.81
Cost Share Program - chemical treatment	\$9,000.00	\$6,201.54
Coordination and Education (incl biocontrol)	\$25,600.00	\$25,600.00
Loan out program operation	\$3,000.00	\$2,844.55
Inventory and Mapping (was data entry extra in approved budget)	\$0.00	
Alternate control goat grazing project	\$2,000.00	\$0.00
Contingency (Misc)	\$500.00	\$0.00
strategic plan	\$1,000.00	\$0.00
fire related work (seeder consultation)	\$0.00	
Subtotal Operating Contracts	\$101,200.00	\$85,370.15
Salaries	\$6,324.00	\$6,331.57
other reimbursements		
Board fee	\$1,463.00	\$1,463.00
SUBTOTAL LABOUR AND BOARD FEES	\$7,787.00	\$7,794.57
Total Areas D&E	\$108,987.00	\$93,164.72
REVENUE		
Carryover from 2019(removed stakeholder amounts)	\$16,779.67	\$16,779.67
Grant in Lieu and transfer from equity tank sale	\$20.00	
Tax requisition 2020	\$79,622.00	\$79,622.00
MFLNRO Administrative Grant	\$14,500.00	\$14,500.00
Total Proposed Income	\$110,921.67	\$110,901.67
ESTIMATED CARRYOVER RDKB private land to 2021		\$17,736.95

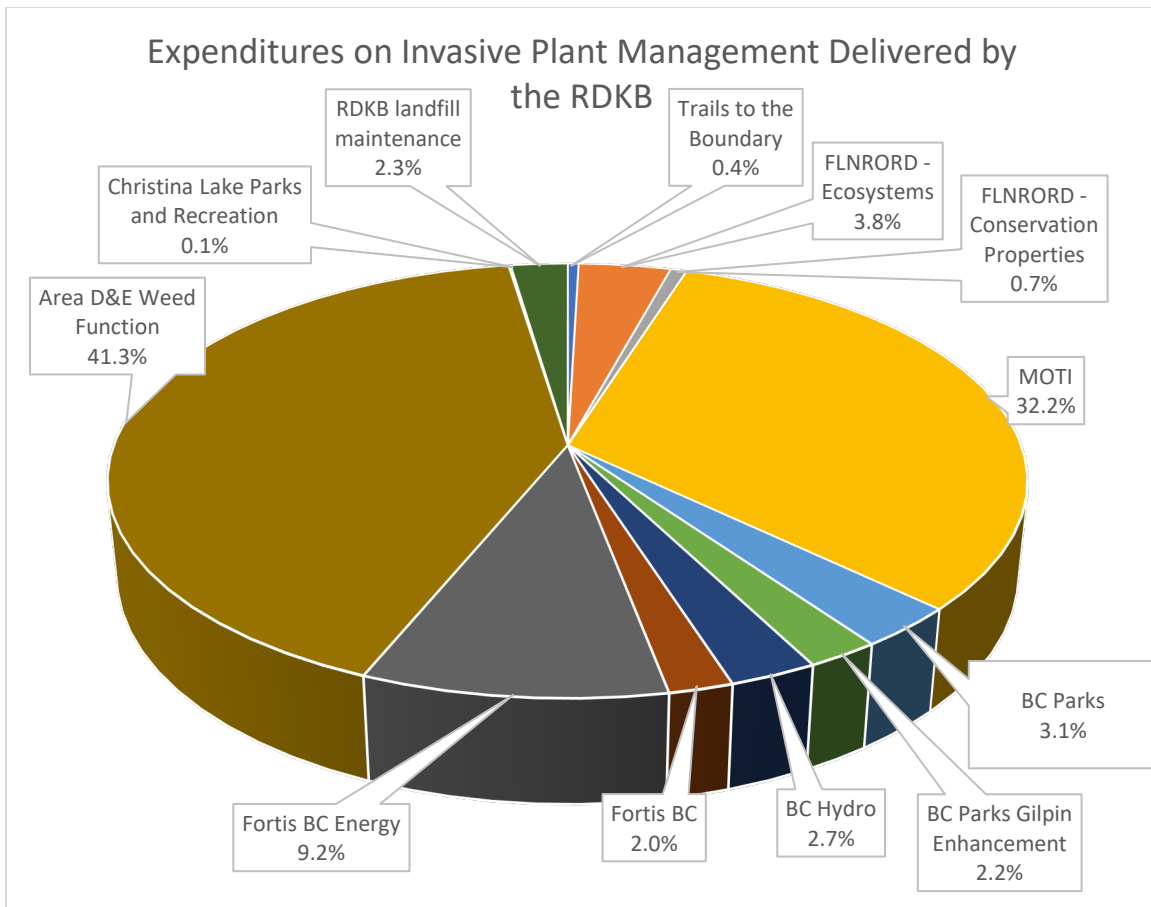


Figure 3. Proportion of Expenditures on Invasive Plant Management by Partner.

Table 5. Invasive Plant Program Income and Expenditure Summary - Breakdown by Funding Agency

Boundary (Area D&E)	New Invasive Plant Program Funds administered by RDKB	Total funds available including carryover	Total Expenditures during 2020	Chemical, Manual and Biocontrol Treatment Expenditures	Management and Coordination	Education and Awareness	Inventory, Data entry and mapping	Research	Carryover to 2021
Min. Transportation and Infrastructure	\$70,000.00	\$74,718.03	\$72,576.67	\$69,476.67	\$1,000.00		\$2,100.00		\$2,141.36
FLNRORD Range Program	\$25,000.00	\$30,157.81	\$30,157.81	\$29,539.89	\$117.92		\$500.00		\$0.00
FLNRORD Trails Management		\$0.00	\$0.00						\$0.00
FLNRORD Ecosystem Restoration	\$8,000.00	\$8,313.44	\$8,544.71	\$8,544.71					(\$231.27)
FLNRORD Conservation Properties	\$1,500.00	\$1,500.00	\$1,500.80	\$1,500.80					(\$0.80)
BC Parks/Selkirk Forest District - Enhancement Management	\$4,999.00	\$4,999.00	\$5,000.00	\$4,700.00			\$300.00		(\$1.00)
BC Parks	\$6,941.50	\$6,941.50	\$6,941.50	\$4,640.25	\$369.45		\$1,931.80		\$0.00
BC Hydro	\$5,500.00	\$7,584.44	\$6,034.95	\$3,584.95	\$1,550.00		\$900.00		\$1,549.49
Fortis BC Inc (Electric)	\$5,000.00	\$5,633.21	\$4,406.37	\$2,706.37	\$1,000.00		\$700.00		\$1,226.84
Fortis BC Energy Inc	\$16,000.00	\$20,510.80	\$20,779.83	\$16,429.83	\$3,350.00		\$1,000.00		(\$269.03)
Trails to the Boundary Society	\$1,000.00	\$1,000.00	\$1,000.00	\$735.75	\$114.25		\$150.00		\$0.00
Subtotal Other Stakeholders - Boundary	\$143,940.50	\$161,358.23	\$156,942.64	\$141,859.22	\$7,501.62	\$0.00	\$7,581.80	\$0.00	\$4,415.59
RDKB Area D & E Weed Function	\$94,122.00	\$110,901.67	\$93,164.72	\$57,675.93	\$25,029.72	\$5,851.40	\$4,607.67	\$0.00	\$17,736.95
Total through RDKB Weed Function	\$238,062.50	\$272,259.90	\$250,107.36	\$199,535.15	\$32,531.34	\$5,851.40	\$12,189.47	\$0.00	\$22,152.54
Christina Lake Parks (outside weed function financials)	\$210.24	\$210.24	\$210.24	\$210.24					
RDKB landfill maintenance (portion transferred to weed function rest paid outside weed function financials)	\$5,276.03	\$5,276.03	\$5,276.03	\$5,276.03					
		\$0.00							
Total all Stakeholders for Boundary	\$243,548.77	\$277,746.17	\$255,593.63	\$205,021.42	\$32,531.34	\$5,851.40	\$12,189.47	\$0.00	

8.0 Opportunities and Challenges

In 2020 the variable spring weather, Covid restrictions, increase in cost share program requests combined with early October snowfall limited the Area E contractor's ability to get all the work done for the season. To deliver all treatment in Area E some private land work was shifted in July to a new contractor Kootenay Ground Maintenance based out of Castlegar. This provided an opportunity for this contractor to get some experience doing invasive plant treatment work to increase available contractors and capacity locally to complete treatment work in the future. Some private land work had to be shifted to Cam Campbell Holding in October when Southern Frontier Forestry was not going to be able to complete all the work allocated to him. Having multiple contractors available to hire as needed has enabled grouping of work according to equipment type which has improved overall cost effectiveness. The multi-year funding commitments by MOTI and FLNRORD the past two years has helped with program consistency and enabling an early start. This will not be possible for 2021 as the scope of funds for 2021 are unknown making it difficult to estimate scope of contractor needs until the agreements are received. The consistent multiyear contacts with the utility companies are a benefit as it allows for earlier planning of treatment programs.

Timing was good for treatment of common bugloss, hoary cress, leafy spurge in the spring, and field scabious, field scabious in July and common tansy in August/September. There were lots of landowners wanting treatment under the New Invaders Program that were not able to be addressed this season. Far more work could be done than currently is but for that to happen it would require a budget increase and sufficient contractor capacity to complete the scope of work required.

With the change of hoary alyssum into the cost share program in Area E in 2019 (had previously be 50% in Area D only) the amount of private cost share work continues to be high in Area E. The Area E contractor received more requests for cost share near the end of the season so those requests will be first on the list for 2021.

Digital data collection has reduced many challenges with data collection and quality resulting in significantly reduced time entering data into the online IAP Program. There were some challenges with the new app but the system worked season long. With the new Invasivesbc database coming online in spring 2021 there will be some adjustments to the collector database to enable smooth upload into the new system.

9.0 Recommended Program 2021

The RDKB should continue the New Invaders Program which is very important for addressing regional priority species so they do not become a problem for neighbours or other agricultural areas in the Boundary. This is the most important component of the RDKB program. The Cost Share program mainly functions to support landowners in controlling widespread species and the real benefit is that instead of inexperienced people applying herbicide, it is trained staff doing the applications. The spray equipment loan-out program is not utilized as much as it could be, mostly as a result in the challenges with herbicide purchase. However the people that do use the program

really appreciate access to the equipment. Advertising should be done to highlight the loan out program and cost share programs so landowners are aware of the programs available to them.

Area D Rural Grand Forks is a highly challenging area and options should be explored to better address motivating people to implement management on their property. Positive feedback on using goats to graze weeds suggests this could be pursued as a possible control method for hoary alyssum in the Grand Forks area at locations where herbicide is not an option or not practical. However, until the a larger more uniform site is found, and two years of grazing completed there is little information on the actual effectiveness of goats. This was a project that was delayed again this year even though it was in the budget.

There are some landowner requests for biocontrol insects for 2021 so these requests will be passed along to FLNRORD staff. Similar resources will be needed to achieve the scope of collections and releases that are anticipated. Most insects that area currently available are already very widespread. If the core population of the field bindweed insect can support collection in 2021, then re-distribution of that insect should be done. Research is ongoing for new insects for several species including oxeye daisy, common tansy, knotweeds, hoary cress, and invasive yellow hawkweeds. The earliest insects may be received would be in 5-7 years based on current status of the projects. Research has not started yet to explore potential biocontrol for hoary alyssum.

The RDKB should continue to assist other stakeholders by administering treatment funding and delivering a coordinated partnership delivery model. The digital data collection went relatively smoothly, and the bulk upload of data minimized time entering the records into IAPP. The system will need some minor adjustments to make it compliant with the new Invasivesbc online database that will go live during spring 2021. BISS will make a few minor adjustments needed and provide contractor training in the spring before work beings. In addition, the RDKB should continue educating landfill attendants and controlling invasive plants in landfills through the landfill maintenance program to prevent spread since they are accepting so many species of noxious weeds.

The RDKB should consider establishing enforcement of invasive plants in the entire Boundary so new species are not allowed to establish and spread due to uncooperative landowners refusing to undertake control. There are local cases where inactivity of a landowner is affecting the ability of adjacent farmers to grow sellable crops. There are areas (Sidley, Christian valley mid to upper Granby) with low existing weed pressure which is increasing due to inability to achieve control. There are areas with adjacent landowners of agricultural land who let their fields sit idle and the weeds increase frustrating neighbours (Rural Grand Forks, Kettle Valley, Christina Lake, and Sidley).

Summary of Additional Needs for 2021:

- Advertise the equipment loan out program and cost share programs in May and June so more residents are aware of these programs.

- Establish enforcement of noxious weeds in the entire RDKB. A system like the East Kootenays or North Okanagan Regional District is recommended where it is mainly used as a threat, but they do issue a few weed notices each year to get compliance in situations where landowners do not implement any form of management.

10.0 Summary

The RDKB weed program helped many landowners to complete invasive plant control work on private land, work that would not have happened without the program. The program does provide a benefit to many landowners in Area D and E. The New Invaders Program primarily focused on treating species targeted for eradication or annual control and then did work on species identified for control and containment. This is a very valuable program since it ensures that small sites of priority weeds are treated before they can spread and cause economic and environmental impact to the entire area. However, the drawback is that residents do not have to annually budget for management costs and are not making invasive plant management a regular part of owning and managing their property. The summary report on the status of priority invasive plants is being completed and should be done in early April which will help to put into context the value at addressing infestations on private land. The number of new priority sites is slowly increasing, necessitating an increase in area treated for 2021 to achieve region wide objectives. Many partners now have multi-year agreements with staggered expiry dates, and several are up for renewal including FLNRORD Range and Min. Transportation and Infrastructure. Partners still doing annual contracts will also need to establish new contracts.

The ability and willingness of the RDKB to administer funding from other stakeholders has been a benefit, enabling the use of the same contractor to treat patches that extend onto different land jurisdictions at one time. If the RDKB was not able to do this some of the crown land work may not get done in the Boundary area due to limited regional staff capacity. This system of treatment delivery by one contractor reduces travel costs, avoids treatment overlap, and reduces administration costs for each group setting up their own contracts. It also adds a level of quality assurance as only experienced contractors are used reducing risk to the environment associated with the work.

Invasive Plant Control Cost Share Program Information for 2020
RDKB Electoral Areas D&E

The RDKB is offering a Cost share program within Electoral Area D and E to control some invasive plants on private land including hoary alyssum, spotted knapweed, sulphur cinquefoil, diffuse knapweed and nodding thistle (along border only). The RDKB also operates a new invader program for priority species as identified on the species list at the end of this form, please review this list to determine which program your request will fall under.

For requests for the 50% cost share program the landowner must:

Step 1. Submit a signed Request Form to the RDKB estimating area to be treated.

Step 2. Contact a certified approved contractor for a quote on the cost to complete the work.

Step 3. Arrange for the certified contractor to complete the work and then submit a copy of the invoice to the RDKB for reimbursement.

Requests will be approved until the budget available for the program is used up.

The maximum area eligible for treatment under this program is 5 acres per parcel. It is up to the landowner to fill out the form requesting treatment and to pay the entire cost for treatment before submitting a claim to the RDKB for 50% of the cost up to a maximum of \$500.00 for the RDKB portion.

In general, requests will be considered in the order that they have been received. Any requests received after the maximum budget for the program is reached, will be deferred until the following year. The program does not do in-crop or pre-plant treatment for landowners.

List of Contractors Approved to do work under the Cost Share Program for 2020.

Electoral Areas C and D:

Kootenay Weed Control

Castlegar, BC
Contact: Allan Freeborn
Phone: 250-365-7778

Electoral Areas C, D and E:

**Kootenay Ground
Maintenance**

Castlegar BC
Martin 250-304-4675
kootenaygroundmaintenance@gmail.com

Electoral Area E only:

**Southern Frontier
Forestry Services**

Rock Creek, BC
Ted Rexin
Phone: 250-446-2117

Other contractors may also do the work as long as they possess the appropriate certification, service license, and insurance.

If you have questions you can contact: Barb Stewart, Boundary Invasive Species Program Manager at 250-446-2232 or Janine Dougall, RDKB General Manager of Environmental Services at 1-800-355-7352.

List of Invasive Plant Species eligible for RDKB Electoral Area D & E Invasive Plant Programs

Table 1. Cost Share Program - 50% Coverage of the cost for treatment of by an approved contractor on up to 5 acres (2 ha) for the following invasive plants:

Current Strategy	Common Name	Latin Name
Control and Contain	Hoary alyssum	<i>Berteroa incana</i>
Strategic Control	Absinth wormwood	<i>Artemisia absinthium</i>
	Nodding Thistle (Not along border)	<i>Carduus nutans</i>
	Spotted Knapweed	<i>Centaurea stoebe</i>
	Sulfur cinquefoil	<i>Potentilla recta</i>
	Orange hawkweed	<i>Hieracium aurantiacum</i>
	Yellow flowered non-native hawkweeds	<i>Hieracium Spp</i>
	Yellow flowered non-native hawkweeds	<i>Hieracium Spp</i>
Biocontrol	Diffuse Knapweed	<i>Centaurea diffusa</i>

Table 2. New Invaders Program: 100% coverage of cost for herbicide treatment by an approved contractor on up to 5 acres (2 ha) per parcel:

Current Strategy	Common Name	Latin Name
Eradicate or Annual Control*	Common teasel	<i>Dipsacus fullonum</i>
	Cutleaf evergreen blackberry	<i>Rubus laciniatus</i>
	Field scabious	<i>Knautia arvensis</i>
	Giant knotweed	<i>Polygonum sachalinense</i>
	Himalayan blackberry	<i>Rubus armeniacus</i>
	Longspine sandbur	<i>Cenchrus longispinus</i>
	Plumeless thistle	<i>Carduus acanthoides</i>
	Russian knapweed	<i>Acroptilon repens</i>
	Scotch broom	<i>Cytisus scoparius</i>
	Scotch thistle	<i>Onopordum acanthium</i>
	Tansy ragwort	<i>Senecio jacobaea</i>
Control and/or Contain	Baby's breath	<i>Gypsophila paniculata</i>
	Blueweed	<i>Echium vulgare</i>
	Common bugloss	<i>Anchusa officinalis</i>
	Common tansy	<i>Tanacetum vulgare</i>
	Cypress spurge	<i>Euphorbia cyparissias</i>
	Himalayan balsam / Policeman's helmet	<i>Impatiens glandulifera</i>
	Hoary cress	<i>Cardaria draba</i>
	Japanese knotweed	<i>Fallopia japonica</i>
	Leafy spurge	<i>Euphorbia esula</i>
	Scentless chamomile	<i>Matricaria perforata</i>
	Nodding Thistle (along border)	<i>Carduus nutans</i>

Note: *Additional species may be added to this list during the season or more than 5 acres treated on a single property based on the recommendation of the Boundary Invasive Species Program Manager for species in Eradicate category only.

Note 2. Landowners can do 5 acres under New Invaders Program and then 50% Cost Share on the next 5 acres on the same parcel for species listed in this table under the Control and Contain Category.



202- 843 Rossland Ave
Trail, BC, V1R 4S8
Toll free – 1-800-355-7352
Phone: (250)-368-9148
Fax (250)-368-3990

**REQUEST FORM - Regional District of Kootenay Boundary Invasive Plant
Treatment 50% Cost Share Program- Electoral Areas D&E**

Submitted by: _____

Mailing Address (Box # and Street address) _____

Phone # () _____ - _____.

Legal Description of Lot where treatment will occur: _____

Target Invasive Plant(s) _____

Estimated size of area to be treatment _____ Hectares¹ OR _____ Acres²

Description of Area to be treated (pasture, unused area, grassland, roadside, patchy,
continuous distribution over entire area, etc.)

By signing below, I certify that I am legally authorized to allow invasive plant treatment
on the property described herein:

Signature

Return signed form (scan or picture) by email to:

Boundary Invasive Species Society, Barb Stewart, manager@boundaryinvasives.com

OR Janine Dougall, General Manager of Environmental Services esmanager@rdkb.com

If you are unable to digitally send forms then you can mail a copy to:

Regional District of Kootenay Boundary, 202-843 Rossland Ave, Trail BC, VIR 4S8

¹ A hectare is 10,000 square meters (100m x 100m) - 1.0 hectare = 2.47 acres

² An acre is 43,560 square feet (209 ft x 209 ft)

Regional District of Kootenay Boundary

Authorization to Spray Herbicide - New Invaders Program

Name: _____

Civic Address (and DL if different from home property) _____

Phone: _____ Date: _____

Treatment information will be recorded in the Invasive Alien Plant Program database*.

ARC GIS online created by ESRI is used for collection of invasive plant management data. ESRI stores their data outside of Canada using an encrypted system and information in the system is accessed using assigned usernames and passwords. Since this information is stored outside of Canada consent is required to have personal information stored in this system. Personal information stored in this system includes name and may include contact information.

☐ I consent to having my personal information stored in ARC GIS online. The consent will be effective on the date of signing for a period of 2 calendar years and will expire on December 31, 2022.

☐ I do NOT consent to having my name stored in ARC GIS online.

*** Please Read Before Signing ***

PRODUCTS TO BE USED:

☐ TORDON 22K - Kills all broadleaves for a period of up to 5 years after application. Does not harm grasses. Remove milk cows from treated areas for 6 weeks. Do not irrigate treated areas or move soil.

☐ GRAZON XC- Kills all broadleaves for a period of up to 3 years after application. Does not harm grasses. Withdraw meat animals at least 3 days before slaughter. DO NOT harvest as forage within 30 days after application. DO NOT permit lactating dairy animals to graze fields within 7 days of application. Do not irrigate treated areas or move soil.

☐ 2,4 D Amine -Kills all broadleaf at time of application but does not have residual control. Does not harm grass. Withdraw meat animals at least 3 days before slaughter. DO NOT harvest as forage within 30 days after application. DO NOT permit lactating dairy animals to graze fields within 7 days of application.

☐ CLEARVIEW- Kills all broadleaves for a period of up to 4 years after application. Does not harm grasses. Remove milk cows from treated areas for 6 weeks. Do not irrigate treated areas or move soil.

☐ RECLAIM - Kills all broadleaves for a period of up to 4 years after application. Does not harm grasses. Remove milk cows from treated areas for 6 weeks. Do not irrigate treated areas or move soil.

☐ DICAMBA- Kills all broadleaves for a period up to 18 months. Does not harm grasses. Withdraw meat animals at least 3 days before slaughter

☐ ESCORT - Kills all broadleaves for a period up to 18 months. Does not harm grasses. Registered for use on roadsides and non cropland.

☐ GLYPHOSATE (ex. Roundup) is a nonselective herbicide that will kill broadleaf weeds and grass. There is no residual control. This may be used in sensitive areas or near wells with agreement of the landowner.

☐ Garlon XRT is a selective herbicide used to control woody perennial weeds on permanent pasture and rangeland

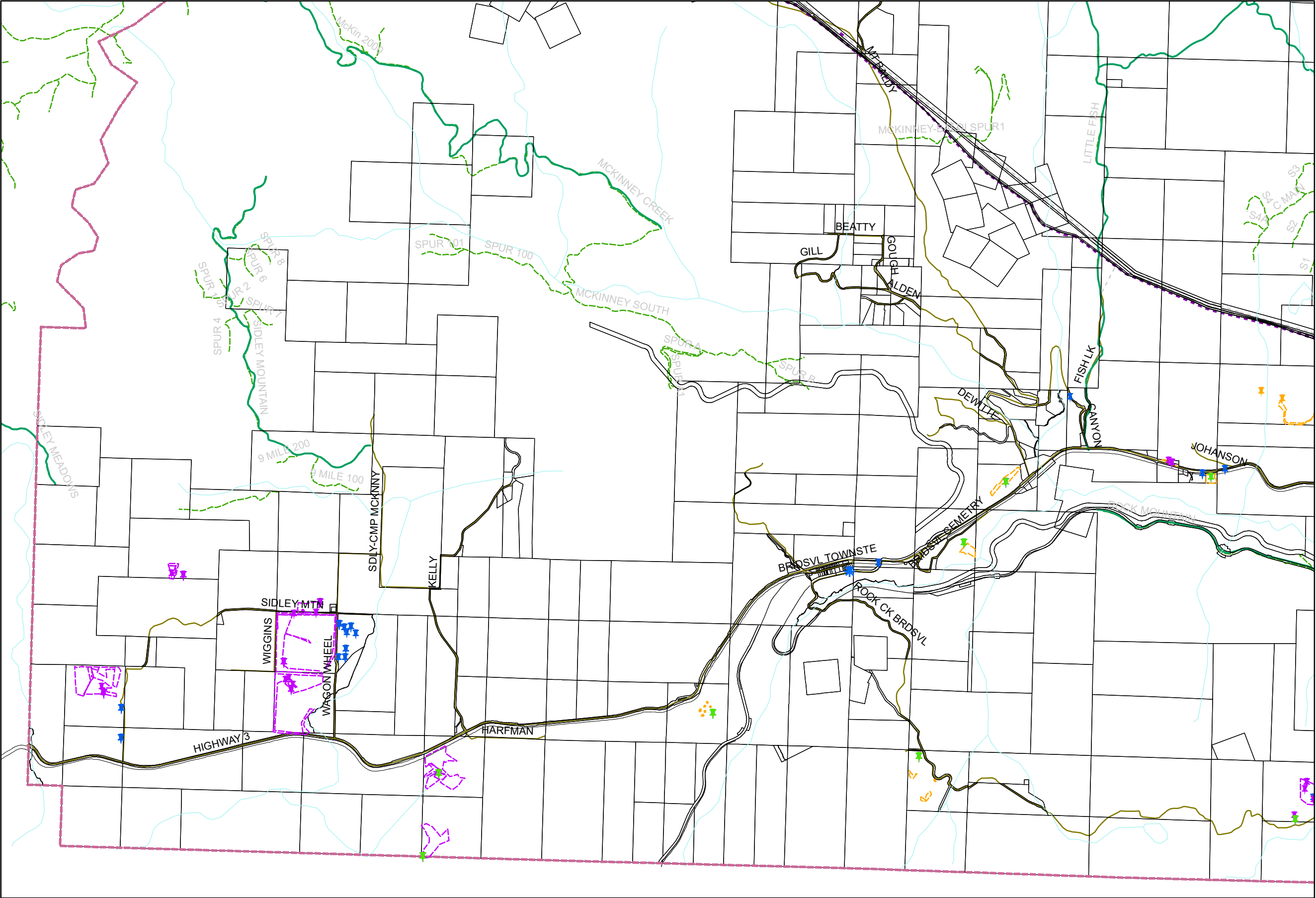
Spraying Authorized by: _____

Location of well on property:

Description of location and how to recognise it:

I authorize treatment closer than 30 m from my well as follows:

Signature of Landowner



Legend

Herbicide Records by Category

- 2- Control and contain
- 3 - Biocontrol
- 3 - Strategic control

Treatment Points by Program

- New Invaders 2020
- RDKB Cost Share 2020

Treatment Lines by Program

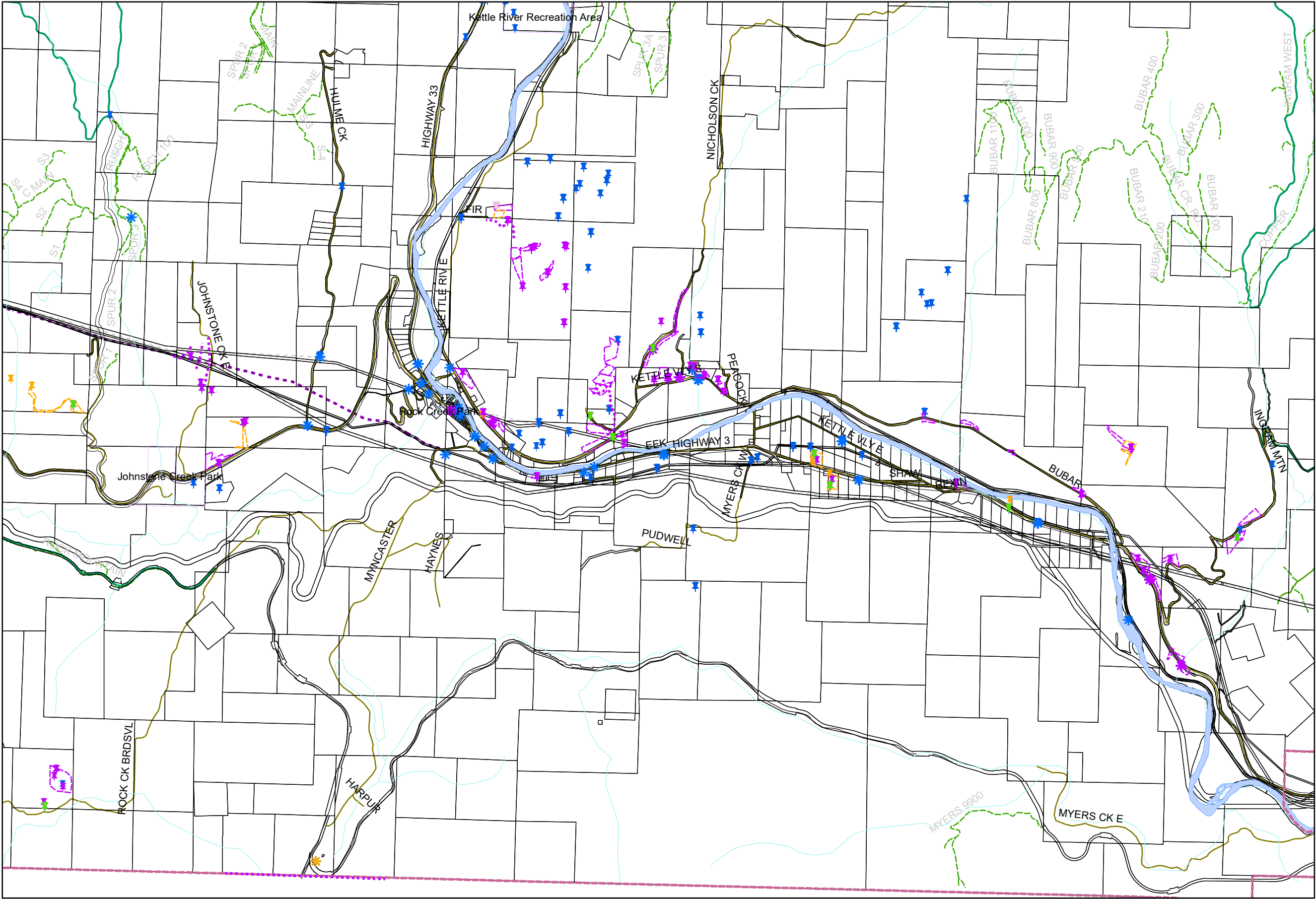
- RDKB Cost Share 2020

Treatment Polygons by Program

- New Invaders 2020
- RDKB Cost Share 2020
- Mechanical -Other Partner
- Herbicide Other Partner
- Regional District Boundary

Roads

- Roads and Corridors**
- Forest Service Road
 - Highway
 - Pipeline
 - Powerline
 - Railway R/W



Legend

Herbicide Records by Category

- 2- Control and contain
- 3 - Biocontrol
- 3 - Strategic control

Mechanical Records by Category

- 2- Control and contain
- 3 - Strategic control

Treatment Points by Program

- New Invaders 2020
- RDKB Cost Share 2020

Treatment Lines by Program

- New Invaders 2020

Treatment Polygons by Program

- New Invaders 2020
- RDKB Cost Share 2020
- Mechanical -Other Partner
- Herbicide Other Partner
- Regional District Boundary

Roads

Roads and Corridors

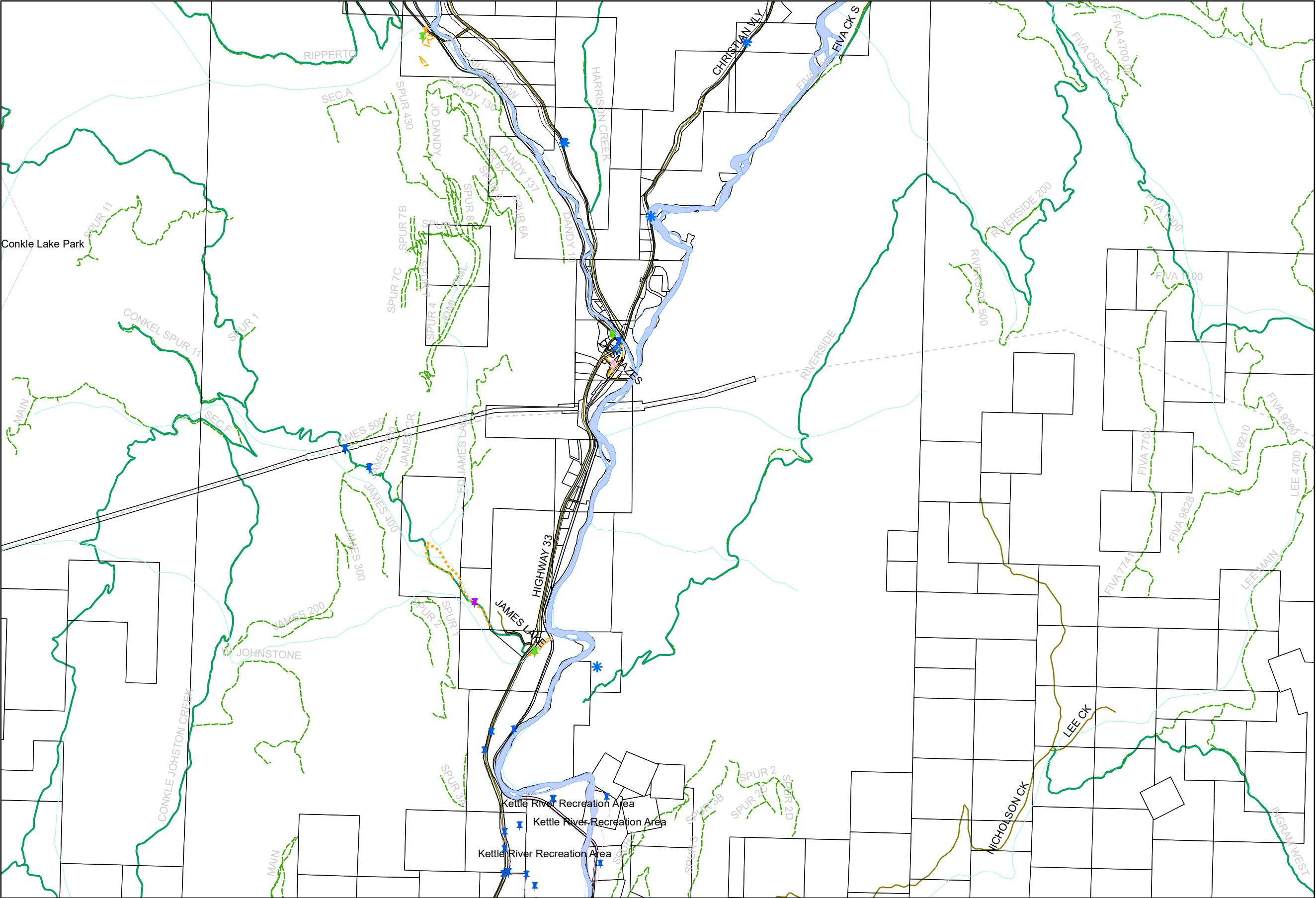
- Forest Service Road
- Highway
- Pipeline
- Powerline
- Railway R/W

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March 2021





Legend

Herbicide Records by Category

- 2- Control and contain
- 3 - Biocontrol
- 3 - Strategic control

Treatment Points by Program

- New Invaders 2020
- RDKB Cost Share 2020

Treatment Lines by Program

- RDKB Cost Share 2020

Treatment Polygons by Program

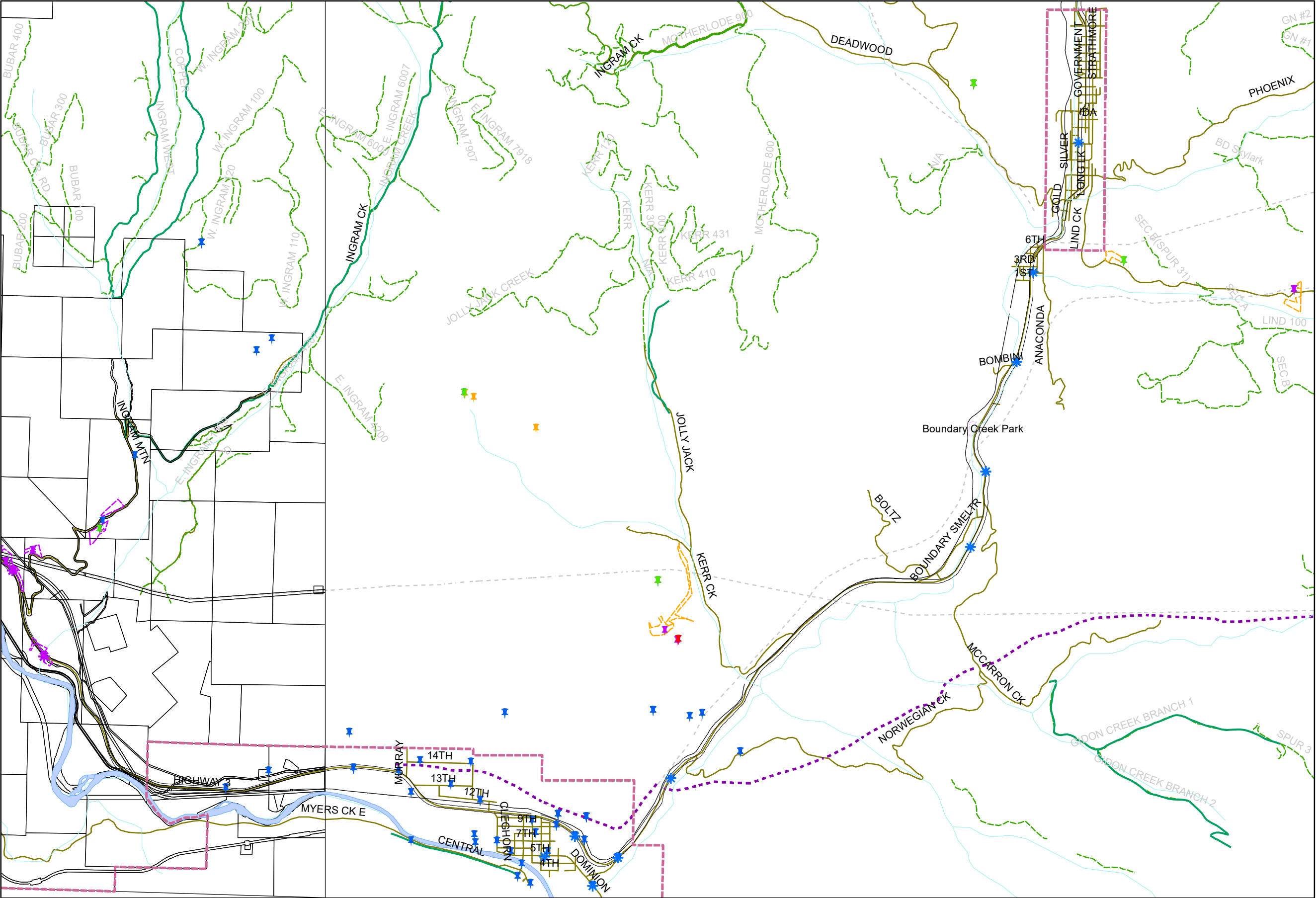
- RDKB Cost Share 2020
- Mechanical -Other Partner
- Herbicide Other Partner
- Regional District Boundary

Roads

Roads and Corridors

- Forest Service Road
- Highway
- Powerline
- Railway R/W





Legend

Herbicide Records by Category

- 1 - Eradication or annual control
- 2- Control and contain
- 3 - Biocontrol
- 3 - Strategic control

Mechanical Records by Category

- 2- Control and contain

Treatment Points by Program

- New Invaders 2020
- RDKB Cost Share 2020

Treatment Polygons by Program

- New Invaders 2020
- RDKB Cost Share 2020
- Mechanical -Other Partner
- Herbicide Other Partner
- Regional District Boundary

Roads

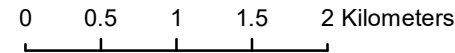
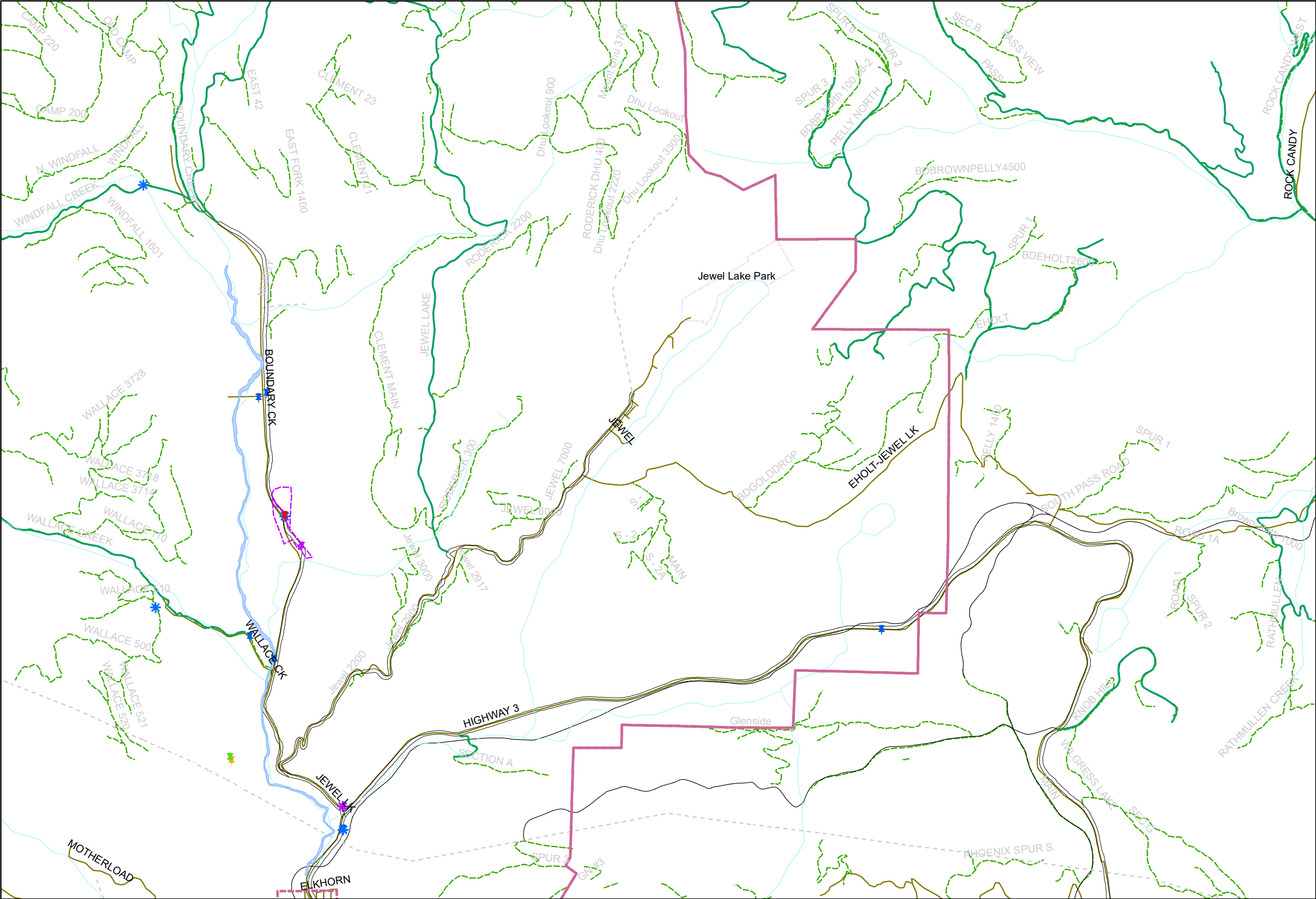
Roads and Corridors

- Forest Service Road
- Highway
- Pipeline
- Powerline
- Railway R/W

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March 2021



Legend

Herbicide Records by Category

- 1 - Eradication or annual control
- 3 - Strategic control

Mechanical Records by Category

- 2- Control and contain

Treatment Points by Program

- New Invaders 2020
- RDKB Cost Share 2020

Treatment Polygons by Program

- New Invaders 2020
- Mechanical -Other Partner
- Herbicide Other Partner
- Regional District Boundary

Roads

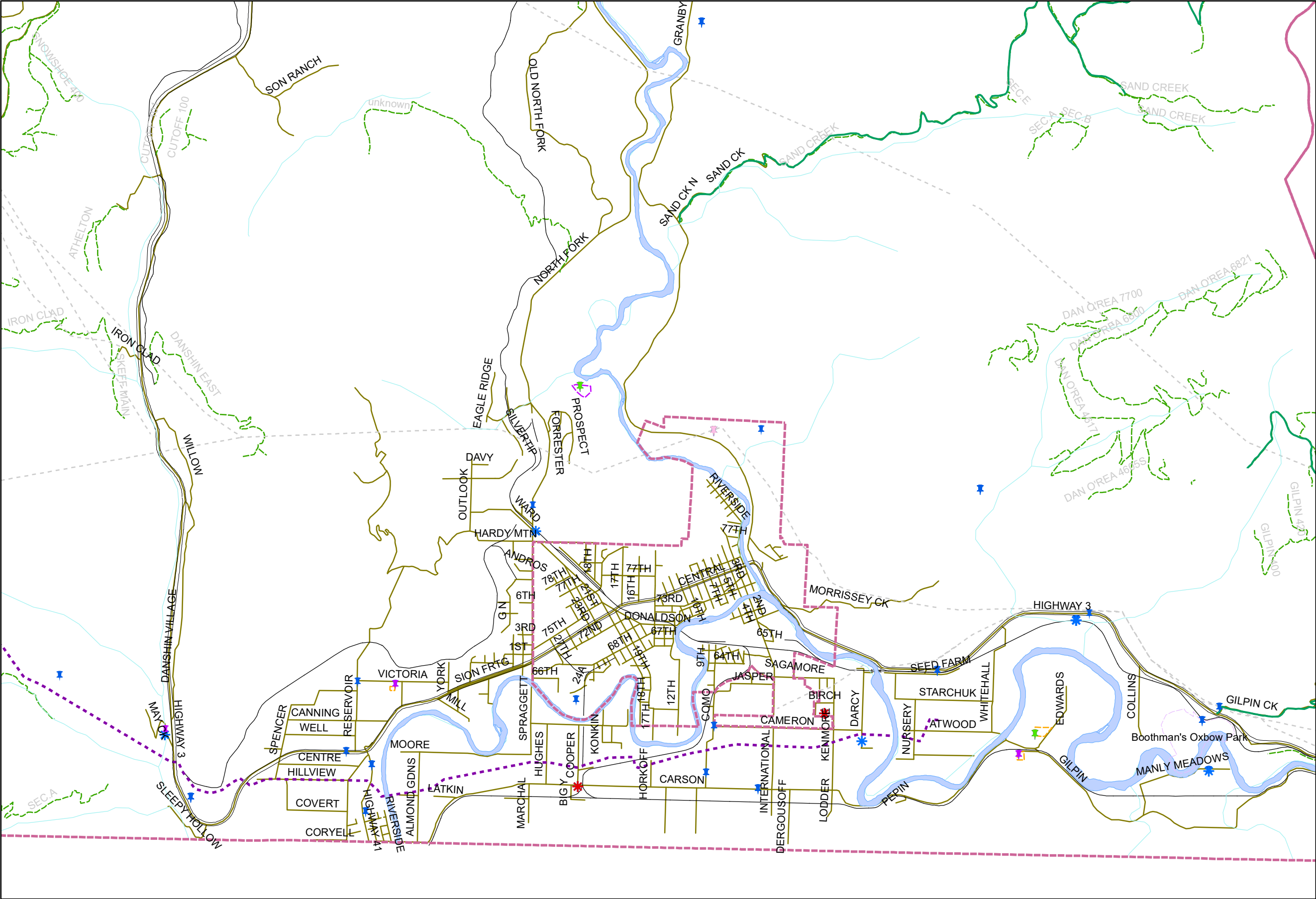
Roads and Corridors

- Forest Service Road
- Highway
- Powerline
- Railway R/W

1:50,000

March 2021





Legend

Herbicide Records by Category

- 2- Control and contain
- 3 - Biocontrol
- 3 - Strategic control

Mechanical Records by Category

- 1 - Eradication or annual control

Treatment Points by Program

- New Invaders 2020

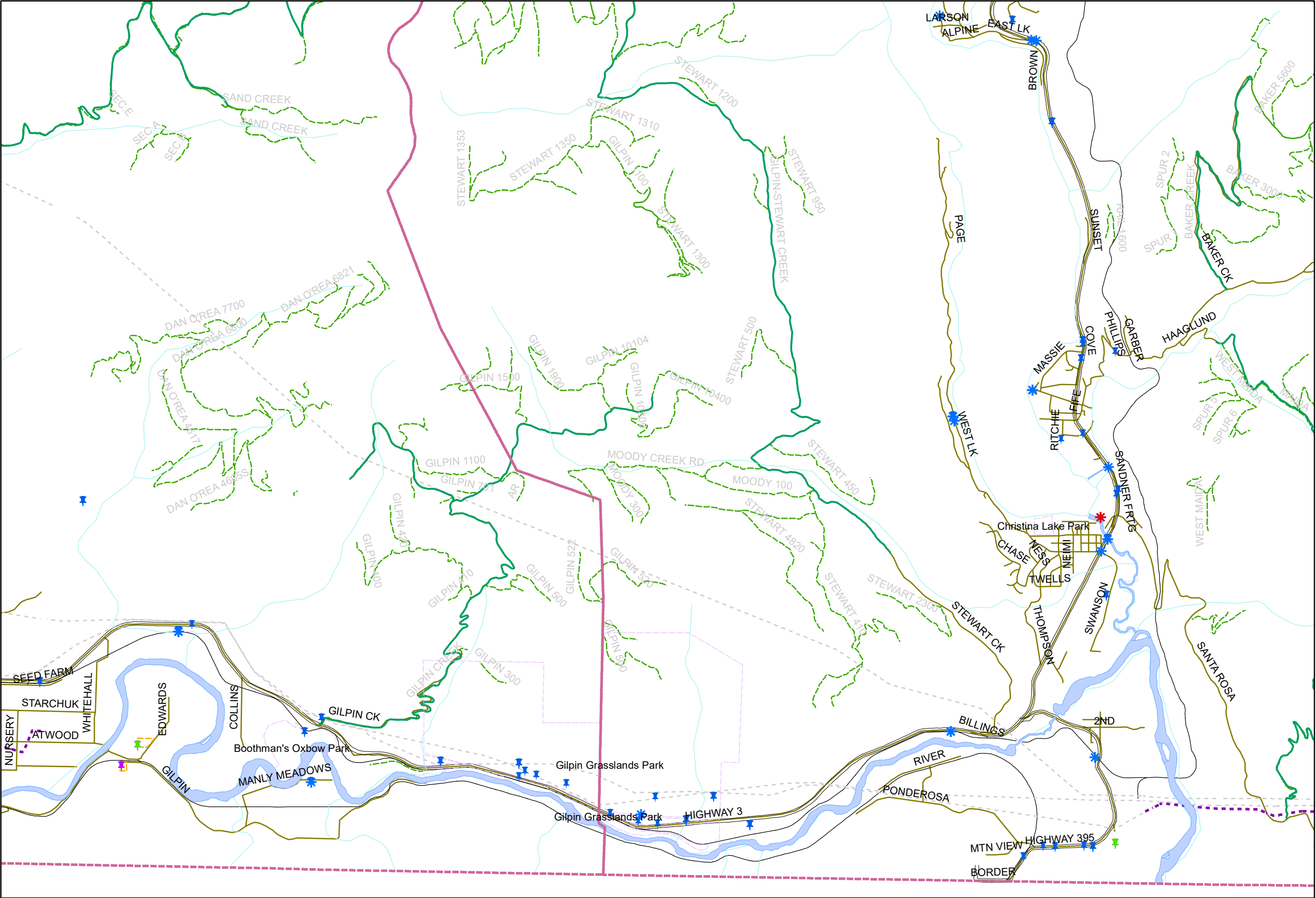
Treatment Polygons by Program

- New Invaders 2020
- RDKB Cost Share 2020
- Mechanical -Other Partner
- Herbicide Other Partner
- Regional District Boundary

Roads

Roads and Corridors

- Forest Service Road
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Legend

Herbicide Records by Category

- 2- Control and contain
- 3 - Biocontrol
- 3 - Strategic control

Mechanical Records by Category

- 1 - Eradication or annual control

Treatment Polygons by Program

- RDKB Cost Share 2020
- Mechanical -Other Partner
- Herbicide Other Partner
- Regional District Boundary

Roads

Roads and Corridors

- Forest Service Road
- Highway
- Pipeline
- Powerline
- Railway R/W

0 0.5 1 1.5 2 Kilometers

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March 2021

