

Protocol for Resource Stewardship Monitoring: Invasive Plants Field Card (FS 1316) Guidelines

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Prepared by:
MFR staff (Range Branch Invasive Plant Program)

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Introduction

The establishment and spread of invasive plants can directly affect many areas, including biodiversity, water quality, fish habitat, forage quality and quantity, recreational opportunities, soil nutrient and hydrologic cycling, forest regeneration and fire regimes. Some invasive plants also pose a hazard to human health. Numerous invasive plant species require disturbance for their seeds and/or plant propagules to germinate and grow, and most take advantage and rapidly spread in native plant communities that are under stress from drought, over-use, trampling, compaction, etc. Forest and range practices that create disturbance, and alter or stress native plant communities can lead to invasive plants successfully establishing and expanding their range, ultimately impacting many of the eleven FRPA resource values. The Forest and Range Evaluation Program (FREP) has recognized the need to identify, report and monitor FRPA-listed invasive plants throughout British Columbia to assist in meeting the program's stated objectives.

The purpose of this document is to provide staff involved in Resource Stewardship Monitoring a process for collecting the required information. It will also discuss how the information will be used by the Range Branch Invasive Plant Program to monitor and address the distribution of invasive plants.

Legislation

The Minister has identified specific requirement for the management of invasive plants under the *Forest and Range Practices Act*, Section 47 as

A person carrying out a forest practice or a range practice must carry out measures that are:

- a) specified in the applicable operational plan, and/or
- b) authorized by the minister

to prevent the introduction or spread of prescribed species of invasive plants.

Definitions

The terms *alien plants*, *invasive plants*, and *noxious weeds* are commonly used and often misinterpreted. The Ministry of Forests and Range, Invasive Plant Program, defines them as follows:

Alien Plants – are those species that establish in locations outside their natural (historic) range or distribution. Common synonyms for alien include non-native, exotic, and introduced. Although introduced, most alien plant species incorporate with the native flora and generally are not considered problems.

Invasive Plants – are non-native or alien to the ecosystem under consideration and whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health. Invasive plants reproduce rapidly, either vegetatively, by seed or both. Their phenomenal reproduction and growth rates and lack of natural predators or pathogens allows invasive plants to overwhelm and displace existing native vegetation, often creating dense monocultures. In British Columbia, the term invasive plant is synonymous with *invasive alien plant*.

Noxious Weeds – refer to those plant species designated noxious under the *Weed Control Act of BC*. All of these species are a primary threat to agriculture, and some also pose a risk to native ecosystems.

Procedure

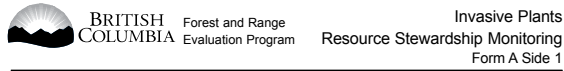
Invasive plant information is to be collected throughout BC. The Invasive Plants Resource Stewardship Monitoring Form is a stand-alone card that is to be used with all resource value protocols at the stand level. When monitoring resource values within a specific cut block, only one invasive plant form is required regardless of the resource value sample site. For example, if you are conducting both riparian and biodiversity evaluations and you discover an invasive plant species at a stream reach and another invasive plant species at a biodiversity plot, then you can use the same card because it is located within the same cut block. When monitoring resource values outside cut blocks (e.g. Recreation, Forage Values) use one invasive plant monitoring form for each monitoring area (e.g. recreation site or series of sites within the drainage; range unit or pasture).

Filling in the Invasive Plants Field Form

This section will lead you through the process of filling out Invasive Plants RSM field form (FS 1316).

Section	Instructions/ Descriptions
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Form A Side 1



1. Identification						
Date <input type="text" value="MM/DD/YYYY"/>		Opening ID <input type="text"/>				
Assessed by <input type="text"/>		District <input type="text"/>				
Range Unit/Pasture ID <input type="text"/>						
2. Invasive Plant Presence						
a) Were FRPA-listed Invasive Plant Species present on this site? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know						
If you answered "Don't Know" in 2 a), was a specimen collected and sent to Invasive Plant Specialist? <input type="checkbox"/> Yes <input type="checkbox"/> No						
If "Yes", please complete section 2 b) below and include specimen in a paper bag.						
If "No", please explain: <input type="text"/>						
b) UTM Zone: <input type="text"/>						
DATE SENT	ID #	PHOTO ID	L CODE	AREA (m ²)	EASTING	NORTHING
<input type="text" value="MM/DD/YYYY"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text" value="MM/DD/YYYY"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text" value="MM/DD/YYYY"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text" value="MM/DD/YYYY"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text" value="MM/DD/YYYY"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text" value="MM/DD/YYYY"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text" value="MM/DD/YYYY"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3. General Comments						
<input type="text"/>						
<input type="text"/>						
<input type="text"/>						
4. Location Code Chart (For reference. Please place appropriate letter in L Code)						
<input type="checkbox"/> a) Block Perimeter	<input type="checkbox"/> t) In Block Roads/Skid Trails	<input type="checkbox"/> k) Grassland/Meadow				
<input type="checkbox"/> b) In Block Reserve	<input type="checkbox"/> g) Landings	<input type="checkbox"/> l) NP Natural				
<input type="checkbox"/> c) In Block Harvest Area	<input type="checkbox"/> h) Utility Right of Way	<input type="checkbox"/> m) Range Use Feature				
<input type="checkbox"/> d) Borrow/Gravel Pits	<input type="checkbox"/> i) Seismic Lines	<input type="checkbox"/> n) Other <input type="text"/>				
<input type="checkbox"/> e) Out of Block Right of Way	<input type="checkbox"/> j) Riparian					
5. Location Comments (Please provide specific information pertaining to the L Code)						
<input type="text"/>						
<input type="text"/>						
<input type="text"/>						

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1. Identification

Date – date of assessment (month/day/year).

Opening ID – numeric identification from the RESULTS database.

Assessed by – names or initials of assessors.

District – enter name or 3 letter code.

Range Unit/Pasture ID – unique ID code.

2. Invasive Plant Presence

Confirm presence of plants. – If you respond “Don’t know”, this means that you found a plant but are unable to identify the species. Complete the information required in section 2b), Date Sent, ID# (a unique identifier for the sample collected, Photo ID, Location Code (see section 4), UTM Zone and co-ordinates and any other general comments (Section 3). Place a plant specimen in a paper bag labelled with the ID# and contact your designated Invasive Plant Program staff person (below), and send the sample along with a copy of monitoring form and photos to your contact as soon as possible.

3. General Comments

General Comments – Provide any comments related to the invasive plants observed, such as condition, height, distribution or density of infestation. You may also provide comments on the site such as level of soil disturbance, competing vegetative cover, aspect, or elevation. For example: “Dense solid patch of orange hawkweed throughout landing”. This section can also be used to identify those plants that are not listed in the Invasive Plants Regulations but are considered a Regional Concern. In this case please identify the name of the plant species (if known) and record the date, location, and information in section 2.

Section

Instructions/ Descriptions

Form A Side 1 (cont.)



BRITISH COLUMBIA Forest and Range Evaluation Program

Invasive Plants Resource Stewardship Monitoring Form A Side 1

1. Identification						
Date		Opening ID				
Assessed by		District				
Range Unit/Pasture ID						
2. Invasive Plant Presence						
a) Were FRPA-listed Invasive Plant Species present on this site? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know						
If you answered "Don't Know" in 2 a), was a specimen collected and sent to Invasive Plant Specialist? <input type="checkbox"/> Yes <input type="checkbox"/> No						
If "Yes", please complete section 2 b) below and include specimen in a paper bag.						
If "No", please explain: _____						
b) UTM Zone: _____						
DATE SENT	ID #	PHOTO ID	L CODE	AREA (m ²)	EASTING	NORTHING
M/M/D/D/Y/Y/Y/Y						
M/M/D/D/Y/Y/Y/Y						
M/M/D/D/Y/Y/Y/Y						
M/M/D/D/Y/Y/Y/Y						
M/M/D/D/Y/Y/Y/Y						
M/M/D/D/Y/Y/Y/Y						
3. General Comments						
4. Location Code Chart (For reference. Please place appropriate letter in L Code)						
<input type="checkbox"/> a Block Perimeter	<input type="checkbox"/> f In Block Roads/Skid Trails	<input type="checkbox"/> k Grassland/Meadow				
<input type="checkbox"/> b In Block Reserve	<input type="checkbox"/> g Landings	<input type="checkbox"/> l NP Natural				
<input type="checkbox"/> c In Block Harvest Area	<input type="checkbox"/> h Utility Right of Way	<input type="checkbox"/> m Range Use Feature				
<input type="checkbox"/> d Borrow/Gravel Pits	<input type="checkbox"/> i Seismic Lines	<input type="checkbox"/> n Other				
<input type="checkbox"/> e Out of Block Right of Way	<input type="checkbox"/> j Riparian					
5. Location Comments (Please provide specific information pertaining to the L Code)						

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4. Location Code Chart

These codes will be used when completing Sections 2 and 6 (L CODE).

- a *Block Perimeter* – area around the cut block boundary, interface between standing timber (or previously harvested area) and harvest area.
- b *In Block Reserve* – areas identified as Wildlife Tree Patches (WTP), Visual Reserves (VR), Cultural Reserves (CR), Old Growth Management Areas (OGMA), Wildlife Habitat Areas (WHA), Ungulate Winter Ranges (UWR), or other designated reserves temporary or permanent.

4. Location Code Chart (cont.)

- c *In Block Harvest Area* – includes the net area to reforest (NAR).
- d *Borrow/Gravel Pits* – includes areas used for gravel extraction.
- e *Out of Block Right of Way* – right of way which approaches or leaves the cut block.
- f *In Block Roads/Skid Trails* – includes all access structures such as mainline roads, skid trails and spur trails.
- g *Landings* – includes road side landings used for ground base and cable operations.
- h *Utility Right of Way* – includes areas along hydro, gas and telephone lines.
- i *Seismic Lines* – includes areas along seismic lines.
- j *Riparian* – includes riparian management areas (RMA), riparian management zones (RMZ) and riparian reserve zones (RRZ) on S1 to S6 streams.
- k *Grassland/Meadow* – includes grass areas and meadows mostly associated with range lands and pastures.
- l *NP Natural* – includes non productive areas which naturally occur across the landscape such as rock and wetlands.
- m *Range Use Feature* – includes range features or structures such as corrals, gates, water and feed structures.
- n *Other* – includes any structure or feature not listed.

5. Location Comments

Provide any comments necessary to augment the location code. For example: "50 m SW of falling corner 14", or "Deep Grass Range Unit, Stump Lake Pasture, corral in SW corner".

Section

Instructions/ Descriptions

Form A Side 2

6. Invasive Plants Observed – Species List



BRITISH COLUMBIA Forest and Range Evaluation Program

Invasive Plants Resource Stewardship Monitoring Reference – Form A Side 2

6. Invasive Plants Observed - Species List

If Invasive Plants Species were observed, please fill out the chart provided below.

UTM Zone: _____

WEED SPECIES	CODE	L CODE	AREA m ²	UTM	
				EASTING	NORTHING
<input type="checkbox"/> Anchusa	<i>Anchusa officinalis</i>	AO			
<input type="checkbox"/> Baby's Breath	<i>Gypsophila paniculata</i>	BY			
<input type="checkbox"/> Black Knapweed	<i>Centaurea nigra</i>	BL			
<input type="checkbox"/> Blueweed	<i>Echium vulgare</i>	BW			
<input type="checkbox"/> Brown Knapweed	<i>Centaurea jacea</i>	BK			
<input type="checkbox"/> Bull Thistle	<i>Cirsium vulgare</i>	BT			
<input type="checkbox"/> Canada Thistle	<i>Cirsium arvense</i>	CT			
<input type="checkbox"/> Common Burdock	<i>Arctium minus</i>	CB			
<input type="checkbox"/> Common Tansy	<i>Tanacetum vulgare</i>	TC			
<input type="checkbox"/> Dalmatian Toadflax	<i>Linaria cathartica</i>	DT			
<input type="checkbox"/> Diffuse Knapweed	<i>Centaurea diffusa</i>	DK			
<input type="checkbox"/> Field Scabious	<i>Knautia arvensis</i>	FS			
<input type="checkbox"/> Giant Knotweed	<i>Fallopia sachalinensis</i>	GK			
<input type="checkbox"/> Gorse	<i>Ulex europaeus</i>	GO			
<input type="checkbox"/> Hoary Alyssum	<i>Berteroa incana</i>	HA			
<input type="checkbox"/> Hoary Cress	<i>Cardaria draba</i>	HC			
<input type="checkbox"/> Hound's-Tongue	<i>Cynoglossum officinale</i>	HT			
<input type="checkbox"/> Japanese Knotweed	<i>Fallopia japonica</i>	JK			
<input type="checkbox"/> Leafy Spurge	<i>Euphorbia esula</i>	LS			
<input type="checkbox"/> Marsh Plume Thistle	<i>Cirsium palustre</i>	MT			
<input type="checkbox"/> Meadow Hawkweed	<i>Hieracium caespitosum</i>	MH			
<input type="checkbox"/> Meadow Knapweed	<i>Centaurea diebeauxii</i>	MK			
<input type="checkbox"/> Nodding Thistle	<i>Carduus nutans</i>	NT			
<input type="checkbox"/> Orange Hawkweed	<i>Hieracium aurantiacum</i>	OH			
<input type="checkbox"/> Oxeye Daisy	<i>Leucanthemum vulgare</i>	OD			
<input type="checkbox"/> Perennial Pepperweed	<i>Lepidium latifolium</i>	PP			
<input type="checkbox"/> Plumelless Thistle	<i>Carduus acanthoides</i>	PT			
<input type="checkbox"/> Puncture Vine	<i>Tribulus terrestris</i>	PV			
<input type="checkbox"/> Purple Loosetrife	<i>Lythrum salicaria</i>	PL			
<input type="checkbox"/> Rush Skeletonweed	<i>Chondrilla juncea</i>	RS			
<input type="checkbox"/> Russian Knapweed	<i>Acroptilon repens</i>	RK			
<input type="checkbox"/> Scammonie	<i>Matricaria perforata</i>	SH			
<input type="checkbox"/> Scotch Broom	<i>Cytisus scoparius</i>	SB			
<input type="checkbox"/> Scotch Thistle	<i>Onopordum acanthium</i>	ST			
<input type="checkbox"/> Spotted Knapweed	<i>Centaurea biebersteinii</i>	SK			
<input type="checkbox"/> St. John's-Wort	<i>Hypericum perforatum</i>	SJ			
<input type="checkbox"/> Sulphur Cinquefoil	<i>Potentilla recta</i>	SC			
<input type="checkbox"/> Tansy Ragwort	<i>Senecio jacobaea</i>	TR			
<input type="checkbox"/> Teasel	<i>Dipsacus fulvonum</i>	TS			
<input type="checkbox"/> Yellow Iris	<i>Iris pseudacorus</i>	YI			
<input type="checkbox"/> Yellow Starthistle	<i>Centaurea solstitialis</i>	YS			
<input type="checkbox"/> Yellow Toadflax	<i>Linaria vulgaris</i>	YT			

L CODE = LOCATION CODE

Complete this section for all invasive plant species you have positively identified that are a priority to report in your district (see Invasive Plants Identification Field Guide June 2008). The species list includes all invasive plant species defined in the Forest and Range Practices Act, Invasive Plant Regulations. Check the appropriate invasive plant box and complete the required information (location code, size of infestation, and UTM coordinates) for each species noted.

Ensure the UTM zone is also filled in at the top of this section.

Links to the Invasive Alien Plant Program (IAPP) through FREP IMS

The information collected through FREP monitoring provides an opportunity for Range Branch Invasive Plant Program staff to maintain and update the inventory of invasive plants, creating a more complete data set and record of distribution of each invasive plant species across the province. This will assist Range Branch staff in the prediction of invasive plant spread from one eco-region to another, as well as improve program planning and rapid response actions.

All information will be entered by selecting “RaW” under the “Links” tab on the FREP IMS home page. The link connects you to the Invasive Alien Plant Program (IAPP) application “Report a Weed” (RaW) screen where you will be prompted to fill in the information for each invasive plant recorded in Section 5 of the field form, as well as the location code description from the Location Code Chart (Section 4), and any general and location comments (Sections 3 and 4). Once submitted, IAPP will compare this information with known invasive plant sites in the database, and Range Branch Invasive Plant Program staff will be alerted. These staff will review the data, possibly contact the submitter, conduct a field assessment if necessary, and update IAPP accordingly.

Help

If you require assistance on the use of the Invasive Plants Field Card, please contact a Range Branch Invasive Plant Program Agrologist/Specialist:

Contact Person	District	Phone
Jeff Hallworth	Coast (DCK, DCR, DNI, DSI, DSQ, DSC)	(250) 731-3087 (Port Alberni/Nanaimo)
Percy Folkard	Southern Interior West (DCC, DCH, DCS, DHW, DKA, DMH, DQU)	(250) 828-4558 (Kamloops)
Catherine MacRae	Southern Interior East (DAB, DCO, DKL, DOS, DRM)	(250) 825-1159 (Nelson)
Bob Drinkwater	Northern Interior (DFN, DKM, DJA, DMK, DNC, DND, DPC, DPG, DQC, DSS, DVA)	(250) 565-6139 (Prince George)

References

Ministry of Forests and Range, IAPP application: <http://www.for.gov.bc.ca/hra/Plants/index.htm>

Ministry of Agriculture and Lands, Weeds BC: <http://www.weedsbc.ca>

Ministry of Agriculture and Lands, Weed Management: <http://www.agf.gov.bc.ca/cropprot/weeds.htm>

Invasive Plant Council of BC: <http://www.invasiveplantcouncilbc.ca>

Electronic Atlas of plants of BC: <http://www.eflora.bc.ca/>

Weeds of the West (9th Edition, 2006), Western Society of Weed Science

Field Guide to Noxious and Other Selected Weeds of British Columbia, (6th Edition, 2007)