



Northwest
INVASIVE PLANT COUNCIL

**Invasive Plant Management Area
Contractor Guide**

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Acronyms and Short Forms

NWIPC – Northwest Invasive Plant Council

IAPP – Invasive Alien Plant Program

IPM – Integrated Pest Management

IPMA – Invasive Plant Management Area

MFLNORD (short *FLNRO*) – Ministry of Forests, Lands, Natural Resource Operations and Rural Development

MOTI – Ministry of Transportation and Infrastructure

EDRR (Provincial) or *REDRR* (Regional) – early detection and rapid response as designated on the IPMA target plant lists

ha – hectare (10,000 square metres)

PMP – Pesticide Management Plan

Definitions

Containment line/zone: The objective of containment in invasive plant management is to prevent large infestations from spreading to un-infested areas. Inside the containment line the infestation of the invasive plant species is extensive, and it is not possible to eradicate the target species. Outside the line the infestation is limited and preventing spread and achieving a long-term goal of eradication is possible. Establishing containment lines around targeted invasive plant species' infestations defines the areas that require treatment and assists in management planning.

Inventory: activities in a defined geographical area for the purpose of identifying new sites that will be surveyed and treated.

IPMA Target Plant List: a prioritized species list that guides IPM decisions made on site and supports the IPMA site list and work plan.

Operational Survey: a survey which captures the necessary detail to allow for further planning and tracking of management impacts on the species present on site; see more detail in Section 3, Operational Surveys.

Survey: the activity that establishes the presence and distribution of invasive species; see more detail in Section 3 – Surveys.

Treatment: the management option for controlling an invasive plant; may be chemical, mechanical, biological or a combination of treatments to yield the best results

SECTION 1 - OVERVIEW

Introduction

Purpose

The Northwest Invasive Plant Council Contractor Guide (the Guide) provides a succinct description of the role of an NWIPC Invasive Plant Management Area (IPMA) Contractor and is a reference for field crews. While each contractor will conduct day-to-day operations as they see fit, this guide outlines the procedures required to ensure consistency across the NWIPC operating area. Use of this guide ensures compliance with guidelines set out by the NWIPC and provincial regulatory agencies.

Description

The Guide is an important tool for NWIPC IPMA Contractors and their field crews. It contains current information on the role and responsibilities of an IPMA Contractor, survey requirements, invasive plant treatment options, jurisdiction guidelines, critical site information, and data collection & submission procedures.

The information contained in this contractor guide has been compiled from field experience, online MFLNRORD training guides, instructions and feedback from partners, and from policies and procedures developed by the NWIPC. Additional resources and forms supplement the Guide and are available on the USB stick provided by the NWIPC.

NWIPC Operating Principles

- Encourage the public to report invasive plant sightings. An especially important part of this process is prompt and comprehensive feedback to persons who respond to the reports and manage invasive plants
- Inform the public about invasive plant programs so they can participate and provide input
- Use and maintain the shared provincial invasive plant inventory database - IAPP
- Assess problems and threats posed by various invasive plants to the environment and economy of the area
- Categorize invasive plants and prioritize sites for control
- Prevent the establishment of invasive plants not currently in the region
- Prevent or minimize the spread of the invasive plants present in the region
- Conduct invasive plant programs in the northwest using IPM principles as described in the Canadian Pesticide Education Program Applicator Core Manual (2011).

Invasive Plant Management Area Descriptions

The operating area of the NWIPC is divided into 8 IPMAs. A general description of each IPMA boundary is as follows:

Haida Gwaii

The islands of Haida Gwaii (Queen Charlotte Islands).

Stikine

The northern boundary is the Yukon border and the southern boundary is Meziadin Junction. The eastern

boundary includes the western boundaries of the Peace River Regional District (PRRD) and the Northern Rockies Regional Municipality - formerly the Northern Rockies Regional District.

Skeena

Bounded to the west by the Pacific Ocean and in the east, south of Witsset (formerly Moricetown) at the Regional District Bulkley Nechako (RDBN) boundary. The northern boundary is Meziadin Junction. The southern boundary is where the Regional District of Kitimat-Stikine meets the northern boundary of the Central Coast Regional District (CCRD).

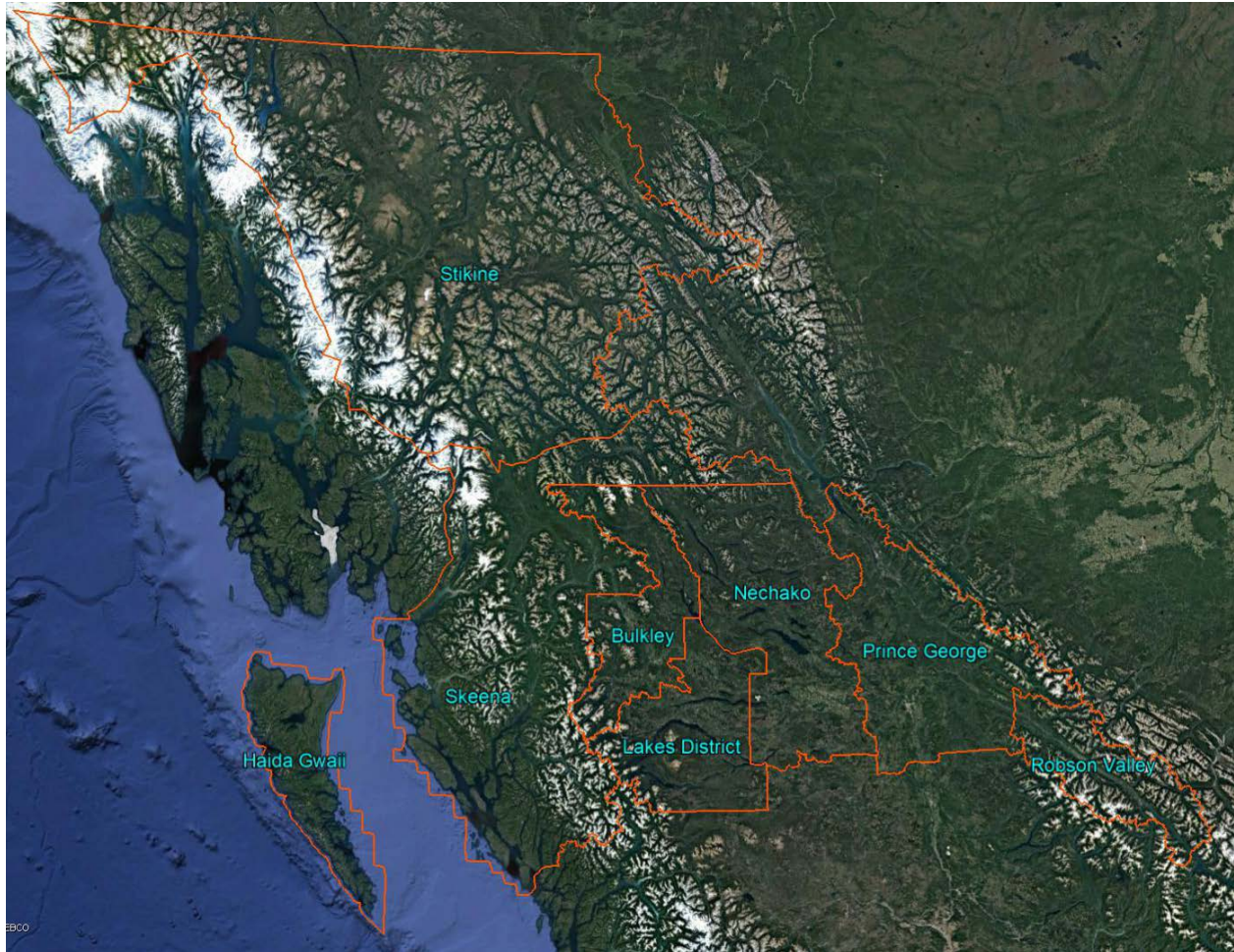


Figure 1. Boundaries of the Invasive Plant Management Areas

Note: Shape files for the IPMAs are included on the USB drive that each IPMA contractor receives.

Bulkley

The western boundary is the RDBN western boundary and in the east near the rest area of Six-Mile summit. It encompasses the RDBN electoral areas “A” and “G. The northern boundary is the RDBN boundary with the Stikine Regional District, north of Takla Lake and the southern boundary is the RDBN boundary with the Cariboo Regional District (CRD) and a small part of the CCRD northern boundary (CRD).

Lakes District

This IPMA is bounded in the west near the rest area of Six-Mile summit at the RDBN electoral area “G” boundary and in the east near Endako at the electoral area “B” boundary. This IPMA encompasses electoral areas “B” and “E”. The northern boundary is along Babine Lake and the southern boundary is the RDBN boundary with the CRD, south of Newstubb Lake.

Nechako

The western boundary is near Endako at the RDBN electoral area “B” boundary and the eastern boundary is the RDBN boundary with the Regional District of Fraser Fort George (RDFFG) west of Bednesti Resort. This IPMA encompasses RDBN electoral areas “C”, “D” and “F”. The northern boundary is the RDBN boundary with the Stikine Region, north of Takla Lake and the southern boundary is the RDBN boundary with the CRD south of Newstubb Lake.

Prince George

The western boundary is the boundary between the RDFFG and RDBN west of Bednesti Resort and the eastern boundary is the RDFFG electoral area “H” western boundary west of Dome Creek. This IPMA encompasses all RDFFG electoral areas except “H” (see Robson Valley). The northern boundary is the northern boundary of the RDFFG in the Pine Pass near Azouzetta Lodge and the southern boundary is the RDFFG/CRD boundary south of Hixon.

Robson Valley

The western boundary is the RDFFG electoral area “H” western boundary west of Dome Creek and the BC/Alberta border to the east. The northern boundary is the RDFFG/PRRD boundary, and the southern boundary is the where the RDFFG boundary meets up with the northeast boundary of the CCRD, and the northern boundaries of the Thompson Nicola and Columbia Shuswap Regional Districts south of Albreda.

SECTION 2 – IPMA CONTRACTOR FIELD OPERATIONS

The NWIPC and its funding partners expect the highest quality field operations. Funding to the NWIPC and subsequent agreements awarded to the NWIPC for IPM are dependent on the exemplary work performed by the NWIPC IPMA contractors.

The IPMA contractor's field crews are the front-line operators for the NWIPC. They are responsible for collecting all the information in the field that the NWIPC and its partners require as well as carrying out the IPM activities.

Field operations have three main pillars:

Pillar 1 – Thorough surveys

Thorough surveys lead to high quality data collection and appropriate treatment decisions– quantitative (measures) and qualitative (comments).

Pillar 2 – Accurate data collection and recording

Accurate collection and recording of the data results in being better able to plan future operations and report to our funding partners.

Pillar 3 - Effective treatments

Treatment or combination of treatments reduce the negative impacts caused by invasive plants and help to minimize their further spread.

Contractors are expected to prevent seed dispersal of high priority and REDRR species on the sites listed on the NWIPC *IPMA Site List & Work Plan* and to ensure no REDRR species becomes established within the IPMA.

General Field Operations Considerations

If any questions about field operations come up that the crew would like clarified before proceeding, they should get in touch with the NWIPC Field Operations Coordinator **as soon as possible**. Site visits by the Field Operations Coordinator can be arranged during the season to clarify questions that arise while the crew is working.

- The field season is generally from the first week of June until the end of September.
- All REDRR Species and any High Priority Species on the IPMA Target Plant List identified outside of an established containment zone are the highest priority species for management within the IPMA.
- Field crews will start the field season fully trained in field operations prior to working under contract for the NWIPC. Internal training of field crews are not billable hours.
- Field crews must be trained in plant identification techniques and will be supplied with plant guides to aid in field identification of species.
- Field crews must be trained in appropriate communications with the public regarding NWIPC Operations and Outreach Programs.
- Maximum crew size is 2, unless discussed with and approved by the NWIPC Field Coordinator in advance of work being performed.
- The NWIPC expects the Contractor to have at least one field crew conducting field operations, as the budget allocations allow, within the designated IPMA throughout the field season.
 - If fielding multiple crews, each crew must work independently of each other.

- Prior to commencing work for the day, each field crew will have a written plan for conducting site visits within the designated IPMA.
- If a contractor has multiple NWIPC IPMAs under contract, travel between any IPMAs under contract is not billable time.
- A “two-pass” system is used for surveys:
 - The first pass survey is timed for when the plants show enough growth to be easily seen and identified, e.g., started bolting but prior to full bloom.
 - The second pass is scheduled to happen prior to seed shatter (release of mature seeds) and late enough to prevent any new plants to proceed from rosette to viable seed production, after the second pass survey.
- Species recorded as 0 ha in size (no plants found) in the most recent survey require 1 pass only, in the current year, and timed according to the plants’ flowering cycle.
- Field crews must cease operations and contact the NWIPC Field Coordinator within 24 hours for further instructions if they find the following:
 - A site listed on the site list whose area is significantly larger than the current IAPP record and where the amount of time required to fully treat the site will take an hour or more in excess of the planned treatment time, or
 - A new site, not on this year’s site list, is identified that is greater than 0.01 ha of high priority species or Regional EDRR as listed on the IPMA Plant List.
- If the site location is remote and contact with the NWIPC Field Coordinator is not possible, treatment is to be limited no more than one hour, or one hour more than the initial planned treatment time.
 - Focus will be on high risk pathways, such as areas frequented by people, animals, vehicles or equipment; or may be subject to flooding, erosion or soil movement.
 - Contact the NWIPC Field Coordinator immediately upon returning to cell phone coverage to advise of action taken and to receive further instructions.
- If the site location is remote and contact with the NWIPC Field Coordinator is not possible, treatment is to be limited no more than one hour, or one hour more than the initial planned treatment time.
 - Focus will be on high risk pathways, such as areas frequented by people, animals, vehicles or equipment; or may be subject to flooding, erosion or soil movement.
 - Contact the NWIPC Field Coordinator immediately upon returning to cell phone coverage to advise of action taken and to receive further instructions.
- Unless specified as a *Mandatory Treatment Pit*, any work done on sites listed on the work plan and within the boundaries of a gravel pit should be limited to those REDRR & high priority species listed on the work plan.
 - If the gravel pit is listed as a “mandatory” gravel pit in the work plan, all noxious weeds listed in the BC Weed Control Regulation will be treated within the gravel pit boundaries. Efforts will be taken to use the most cost-effective method(s) of treatment(s) within gravel pit boundaries

Preventing the Spread of Invasive Plants

“Work, Clean, Go” Best Practices

- Vehicles and mobile equipment will be washed frequently while conducting invasive plant management activities.

- The Contractor will use brooms and boot brushes to clean the undercarriage of vehicles and footwear while operating in the field.
- Vehicles will not pass directly through, or park within invasive plant infestations. Vehicles that must pass through an infestation should be inspected for attached plants once clear of the infestation. All plants should be removed, and the vehicle cleaned before moving to a new area.
- Field Crews will work within un-infested areas first whenever possible.

Third Party Inquiries or Concerns

- Refer all inquiries to the NWIPC Field Operations Coordinator.
- Cease all activities if there is a conflict on-site and inform the NWIPC Field Operations Coordinator. Work will not resume at the location until the NWIPC Field Operations Coordinator has completed an investigation of the issue and provided written permission to continue
- Cease work on site and move on to other work if encountering an active construction project, logging operation, forest fire, highway maintenance work area, or pit or quarry operations.

SECTION 3 - SURVEYS

Overview

Surveys are important for:

- Determining the local and regional extent of infestations
- Determining where and when to use containment zones
- Determining appropriate treatment options
- Calculating the potential costs for treatment
- Developing management plans
- Providing data for research purposes
- Providing spatial record over time

A good survey starts with a general review of the species currently known to be on site and the site data currently in IAPP. Surveys are meant to ensure current IAPP site details are correct, the collection of data is accurate for the species present, and they aid in making the correct treatment decision. The information collected includes the physical characteristics of the site, the location of the species being managed in relation to the UTMs for the site and the distribution and density of the of the species within the site. These attributes are required to make appropriate treatment decisions.

Survey Guidelines

Terms

Bio agents – Approved bio control treatments using insects and/or pathogens to minimize or halt the spread of a species

Operational survey – Surveys that identify all site-specific characteristics, adjacent site concerns, and local resident concerns in order to identify site sensitivities influencing management decisions.

Target Plant List – The list provided to the IPMA contractor that categorizes that IPMA’s invasive plants into three categories for management: REDRR, high priority and low priority

Landowner Rebate Program – A rebate program offered by the NWIPC to assist with contractor costs to do invasive plant treatment on private, rural land

NTZ – no treatment zone

PFZ – pesticide free zone

REDRR species vs High priority species – When more than 10 sites of an REDRR species that requires active management has become established within the IPMA, the species is moved to the high priority species category on that IPMA’s Target Plant List.

Survey – Activities on an invasive plant site to establish presence and distribution of invasive species and determine treatment options as required.

Site Sensitivities – Items identified through the survey process that could impact the management decisions made on site. While not limited to these examples, the sensitivities could include:

- Proximity to water

- Public access areas
- Known apiaries in the area
- Growth stage and species of the plants being managed
- Plants to be managed are within municipal boundaries
- Current or predicted weather
- Local resident concerns
- Make up of other species on site
- Possible release of bio agents in the area
- Slope stability
- Herbicide product label instructions

Survey Requirements and Expectations

- Surveys collect all the necessary data for the NWIPC and its partners to accurately assess how the field work is progressing on a site and conduct proper planning and reporting of the field work.
- It is critical for all field data to be collected and recorded accurately while in the field to minimize data errors.
- All surveys conducted by IPMA contractors are operational level surveys.
- Area size estimates need to be as accurate as possible for all species being surveyed, including species in the low priority category on the *Target Plant List*.
- Low priority species may not be managed by the contractor, but some low priority species may be managed using approved biocontrol, if appropriate.
- Continuous occurrences of target species with a less than 100 m gap between plants are considered one site.
- If the gap between the target plants is greater than 100 m, a separate (or new) site should be recorded/created.
- Survey crews will review previous survey and treatment details for the site being managed to:
 - Estimate the amount of time that is required to survey and manage the site to acceptable standards.
 - To ensure all expected work activities can be completed on the same visit.
 - To ensure field crews are aware of any sensitivities previously identified for the site.
- Survey crews will refer to the IPMA *Target Plant List* to ensure proper management objectives are met for the species on site.
- Previously identified PFZs, NTZs, bio agent releases, local area resident concerns or other site sensitivities require unique consideration to achieve the management objectives for the site.
- Consultation with the NWIPC Field Coordinator and/or the jurisdictional partner may be required for these sites.
- If the field crew comes across sites with discrepancies in the current IAPP data such as incorrect UTM's, Jurisdiction, Location Description, or Paper File ID, the crew will investigate and record accurate data while in the field.
- The corrected details will be entered on the IAPP data submission form (follow instructions on the submission form).
- Survey crews need to identify and record accurate information for all invasive species present on site. If species present cannot be identified while on site, pressed samples will be collected along with detailed photos (see Plant Press Sample, Site Photos, and Plant Photos sections).

- All new occurrences of a REDRR species must have plant pictures and pressings taken for verification. Pictures will be sent to the NWIPC Field Coordinator as soon as possible. The pressed plant sample will be retained until a drop off or pick up has been organized.
- If a site is inaccessible due to a deactivated road, a gate in the way, etc., the crew will inform the NWIPC Field Coordinator as soon as possible for further follow up. **No survey entry is required until access to the site is gained.**
- If the crew identifies a high priority species growing on private property and the jurisdictional partner does not cover the cost of treatments on private property, they will offer the property owners the Landowner Rebate Program.

Survey timing

Date ranges

Timing of site surveys is critical to ensure that the crew can stay ahead of the managed species' development over the course of the growing season. The date ranges on the site lists for 1st and 2nd passes give the contractor the ability to get to areas where species emerge earlier due to warmer conditions then to target areas where the species' growth is slower, or emergence is later.

Variability

Developed areas within or surrounding municipal/urban areas are often where plants emerge earliest. Plants tend to develop later in undeveloped, higher elevation and limited exposure areas. Forest service roads (or other resource roads) and trails tend to have plants develop later. These areas should only be **managed after the developed areas are managed** and when the timing makes sense for the species being targeted in those areas.

Protocol

Sites in developed areas will be completed first and the ones in undeveloped, slower growth areas will be left to the latter part of the date range.

Starting the survey

Crews will locate the site UTM's and start from there to ensure that the survey is conducted for 100 m in all directions from the site center or 100 m in all directions from the last target plant found in the initial 100 m survey.

- Crews will remove the old flagging tape marking the site center and hang a new piece of flagging tape with the following written on the tape:
 - the date
 - the crew's initials
 - the site number (IAPP Site ID)

Private property considerations

When the UTM's for the site put it on Crown land or a municipal right of way, but it is adjacent to or includes private property, the crew will take extra steps in coming to any treatment decision. IPMA contractors have authorization to manage any invasive plant growing on Crown lands, however permission needs to be obtained from the private property owner to conduct invasive plant management on their property. Leased Crown land is to be considered private land.

Assistance in determining ownership is available from Regional District offices and their associated on-line mapping programs. If the survey indicates a herbicide is the most appropriate method of treatment on site refer to the NWIPC Policy on the use of herbicides within residential areas (see Appendix 1).

Previous management activities

While conducting the survey, crews should be actively looking for evidence of previous management activities and ensure those areas are checked. Evidence of previous work on a site could include old flagging tape, old herbicide notification signs or disturbance caused by mechanical or chemical treatments. The crew must go to these areas and remove any old flagging tape or signs while conducting the survey.

Site detail and plant photos

Overall site photos are taken to capture a good representation of the infestation from several aspects on a site. They are useful to show how the site is “shrinking” or “moving” from year to year.

Photos are also taken of individual plants to assist with verifying a new EDRR species or to identify a new plant species occurrence. These verification pictures will be submitted to the NWIPC Field Coordinator , within 24 hours of collection or return to data service (cellular or Wi-Fi). These pictures will be distributed to the NWIPC Plant Committee or other experts for identification.

All other photos will be submitted to the NWIPC FIELD COORDINATOR with the weekly data submissions.

Guidelines for plant photos

Photos are taken to help with plant identification. The photos should be taken with a background that isolates the plant from its surroundings to ensure plant characteristics are clear. Some suggestions for background are a white card or bare ground. Individual photos should be taken to include:

- Leaf details – shape, margins, structure (compound leaf, leaflets, etc.)
- Leaf attachment to stem – including arrangement on stem (alternate, opposite, whorl, etc.)
- Flowers
- Root structure, if possible
- Overall plant architecture/profile (again try to isolate the plant from its surroundings)
- An overall site photo which shows the plant growing on site

Plant samples – plant press instructions

All field crews should have an appropriate plant press with them to collect plant samples. Plant pressings will be retained until a drop off or pick up has been arranged. All pressings must have information recorded on the press paper about the collection site.

This information will include:

- Site number
- Date collected
- Location description
- UTM's of the specific collection site if the plant was not close to the site's UTM's
- Collector's name

SECTION 4 - INVENTORIES

Overview

Inventories are important for many reasons. Inventories are used to identify new sites requiring management and confirm whether a species has started to move into or has established in new areas. By conducting inventories in areas where there are no current invasive plants sites requiring management, the NWIPC is meeting its operating principles by confirming the presence or absence of an invasive species in specific areas. If target plants are found, management activities will take place to prevent or minimize the spread of those invasive plants within the region.

Inventory Guidelines

- Field crews will not travel in excess of 25Km/hour while conducting inventory work.
- Inventory projects target specific high priority, REDRR, or Biologically Controlled species.
- Field crews will begin the inventory on the selected road or trail and branch off onto smaller roads and trails when they are found.
- Crews will take note of and carefully check areas where there is evidence of recent or ongoing disturbance.
 - Examples of these areas include ditches, forest canopy openings, landings, cut blocks, and pullouts
- All occurrences of REDRR or High Priority species will be managed by the field crew as they are identified.
- Information will be collected and submitted using the IAPP survey data collection protocol. Information specific to the road or trail will be recorded on the appropriate Road Report forms provided by the NWIPC.

Road Shoulder Inventories

Road reports and forms

The purpose of these shoulder inventories is to locate and record new sites that require management.

When travelling within the IPMA the crew should always be looking for new sites. Road reports are required so the NWIPC can properly report to our funding partners on how we are meeting management objectives along road rights of way. Road reports collect information on roads being maintained by MOTI and FLNRO. Road Reports are attached as tabs (MOTI Roads, FLNRO Roads) in the IPMA *Contractor Tracking Form*.

- Shoulder inventories conducted along road rights of way must have an accompanying Road Report.
- Shoulder inventories are recorded along the distances between the sites being managed throughout the growing season.

Tables 1 and 2, next page, are examples of correctly filled MOTI and FLNRO Road Reports.

Table 1. Sample MOTI Road Report

MOTI Road Inventory							
Inventory and Treat according to the MOTI Priority list							
IPMA	Official Road Name	Date	Start landmark (km)	End Landmark (km)	Road km (shoulder)	Direction (NB, SB, WB, EB)	Comments
LD	Colleymount Road	22/06/2020	East End of road at ferry terminal	West end of the road close to Noralee	24	WB	no new site identified while travelling out to first site of the day.
LD	Colleymount Road	22/06/2020	West end of the road close to Noralee	East End of road at ferry terminal	24	EB	found 1 new bluet site while travelling between sites on work plan.

Table 2. Sample FLNRO Road Report

FLNRO Road Inventory							
Inventory and Treat according to the FLNRO Priority list							
IPMA	Official Road Name	Date	Start landmark (km)	End Landmark (km)	Road km (shoulder)	Direction (NB, SB, WB, EB)	Comments
PG	Pelican FSR	22/07/2020	0 Km at junction of Blackwater Rd	12 Km sign board	12	NB	went up the Pelican to check known MT sites.
PG	Pelican FSR	22/07/2020	12 Km sign board	0 Km at junction of Blackwater Rd	12	SB	No new sites found while travelling the Pelican today.
PG	Unnamed side road off the Pelican FSR	22/07/2020	junction with Pelican FSR	End of road	3	WB	Found a new unidentified road coming off of the Pelican, road ended at 3km no new sites found
PG	Unnamed side road off the Pelican FSR	22/07/2020	End of road	junction with Pelican FSR	3	EB	

SECTION 5 – DATA COLLECTION

Overview

On-site data collection is one of the most important tasks performed by NWIPC field crews. The data collected is used by the NWIPC and our regional and provincial partners to plan future operations, produce reports and track the progress of sites being managed.

It is critical that data collection is thorough, accurately recorded and completed BEFORE the crew leaves a site. All required IAPP data will be recorded on the *IAPP Data Submission Form* provided by the NWIPC.

IAPP Data: Expectations and guidelines

Submitted data is loaded into IAPP via a batch upload process. If the data is recorded correctly in all data fields this process is extremely fast. Incorrect data (not verified while in the field) and any modifications to the form will result in time and effort to sort, find, and fix the problems. The contractor assumes full responsibility for costs incurred due to contractor error and subsequent time to correct the data.

Data submission forms

- Data must be recorded on the IAPP Data Entry Submission form as the activities on site are completed.
 - It is important to ensure data is entered in the predetermined format and into the correct field cells. Data in the wrong cell will make the whole submission fail to upload to IAPP.
- It is important to verify that the correct IAPP code is used when entering data on the submission form. All codes needed are in the reference tabs of the submission form.
- The existing IAPP site details must be reviewed when filling in the survey record to ensure corrections or updates are identified and recorded.
 - Change the font colour to **RED** to identify corrections or updates.
- Data sheets that fail to load will be sent back to the contractor for fixing at their own expense.
- IAPP data must be submitted to the NWIPC Field Coordinator every week, on Mondays by 4 pm.

Survey and treatment comments

- All comments recorded on survey and treatment records will be unique to each site; no generic or repeating comments in IAPP entries
- If plant clusters or individual plants of the same species are found more than 10 m from the site UTM, the survey comments will indicate where those plants were found in relation to the UTM.
 - Treatment comments should include comments about the amount of plants removed (e.g., number of contractor bags) or sprayed.
 - Comments could also include treatment decisions considered.
- If deadheading prior to herbicide application, this should be mentioned in the treatment comments, but not recorded as a mechanical treatment.
- For chemical treatments on Crown lands, the most recent PMP for Crown Lands in Northern BC and the contractor's Service License are required for all entries.

- For chemical treatments on BC Hydro jurisdiction, the most recent BC Hydro PMP and the contractors Service License are required for all entries. For chemical treatments on all other jurisdictions only the contractor’s Service License will be entered.
- The Jurisdiction, Location Description, Site Paper File ID, and the Site-Specific Use must be verified while on site to ensure they are appropriate for the site.
- Site comments must be entered if there is something unique to the site that might affect current and future management decisions.
- When a PFZ is required, details must be entered into the treatment record indicating a PFZ was established on the site. The *Site Specific Use* and *Site Comments* fields on the data submission form will be updated, if required.

Inaccessible sites

If a site is not accessible to the field crew due to a deactivated road, a gate in the way, etc. the crew should inform the NWIPC Field Coordinator as soon as possible for further follow up. There is no IAPP survey entry required for this until access to the site is gained.

Other data collection protocols

Surveying sites that are not in your IPMA

Some sites map inside one IPMA can only be accessed by travelling through an adjacent IPMA. These sites will be added to the adjacent IPMA’s site list. In this case, the Location Description should start with “Access from ... [name of IPMA the work will be completed from]” before adding the rest the location details.

Combining sites

Unless there are unique geographical or jurisdiction constraints that necessitate maintaining multiple sites less than 100 m of each other, any site found to be within 100 m of another site should be reviewed for possible combination of the data to have just one site. If site combinations are indicated, follow the instructions on the NWIPC *Data Entry Submission* form.

“Site Specific Use” options

There are 11 Site Specific Use options that may be entered on the IAPP data submission form.

Table 3. Site specific use options

Site Specific Use	When to enter Site Specific Use data
Gravel Pit	Site is located inside of a Crown or Privately-owned gravel pit, or gravel storage area.
No-spray Buffer	Site is located inside a no herbicide application buffer zone. Site comments should indicate reason for buffer being applied.
Numbered Highway	Site is located on the right-of-way, of a Provincial or Federal numbered highway.
Parking Lot	Site is located inside of a parking lot.
Rec Site/Trail	Site is located at a Provincial Rec Site or along a maintained trail.

Site Specific Use	When to enter Site Specific Use data
Rest Area	Site is located at a rest area pull out along a highway.
Sensitive Site	Site is located in an area with identified sensitivities. Site comments should indicate the sensitivities identified.
Transfer Station/Landfill	Site is located at an official transfer station or landfill.
Within PFZ - Waterbody	Site is located entirely inside of a PFZ. If plants being managed are outside of a PFZ it should be listed as a Sensitive Site and comments about the proximity to the PFZ added to the Site Comments.
Within PFZ - Well	Site is located within 30m of a water well or drinking water source for humans or animals.
Yard/ditching waste dump	Site is located at a place being used as a yard and/or ditching waste dump.

Protocol for yellow hawkweed entries

There are many species of hawkweed that have yellow flowers. Identifying to species can be difficult.

Field Crews will be trained to identify Spotted hawkweed (HIER MAC), Whiplash hawkweed (HIER FLA), and Mouse-eared hawkweed (HIER PIL). These species of hawkweed will be entered using the individual species name. For existing or new entries for all other yellow hawkweeds, follow this protocol:

- 1) For previously identified tall yellow hawkweeds do not try to identify between species. Maintain data entry as “yellow hawkweed species (HIER OID)”.
- 2) For new discoveries of any tall yellow hawkweeds, enter survey data as “yellow hawkweed species (HIER SPP)”
- 3) For surveys on sites already containing **only** “yellow hawkweed species (HIER OID)”, or other tall yellow hawkweed identified to species in the Invasive Species data, enter using the hawkweed species with the most recent survey date.
- 4) For existing sites listing **multiple** yellow hawkweed species surveyed in the same year, enter the species with the most historical data.

SECTION 6 – TREATMENT GUIDELINES

Overview

- Treatments only occur after a survey has been conducted and all potential sensitivities that might affect the treatment decision have been identified.
- Contractors may revegetate disturbed areas (e.g. sites controlled by digging or treated with non-selective herbicides) with prior permission of the NWIPC and the jurisdiction partner.
- Field crews will select and use the **most efficacious, longest lasting, cost-effective and site suitable** treatment method(s) at each site.

Table 4. General description of treatment types and conditions for use.

Treatment	Conditions for Use
<p><u>Prevention</u> Management of the resource to prevent invasive plant establishment; minimize seed disturbances; cleaning invasive plants off equipment and using invasive plant free feeds and seed; and early detection of invasive plants.</p>	<ul style="list-style-type: none"> • No conditions • it is in everyone’s best interest to always practice prevention techniques.
<p><u>Mechanical</u> Includes: cutting, digging/excavating, girdling, hand pulling, mowing, pruning, tilling, spot burning (flaming).</p>	<ul style="list-style-type: none"> • New, small incursions. • Used to limit rhizomatous root spread and to prevent seed production. • Generally applicable to all species, except knotweed species. • Generally, requires restoration (to some extent) with native grasses or plant species
<p><u>Biological</u> (see Note) Systematic release of insects or disease that attack (stress) the targeted invasive plant species. The attack makes the host species less competitive; when the stress is significant enough population levels are reduced. Biocontrol does not eliminate invasive plant infestations.</p>	<ul style="list-style-type: none"> • Older, more established incursions generally with widespread occurrences of target species beyond treatment site. • Try not to release in or around sites containing other species that require active management. • Prior to start of season, review site list for sites containing the Bio release Site Paper File ID indicating previous releases in the IPMA to ensure the release sites are protected.
<p><u>Cultural</u> Altering the environment to make it less favorable for invasive plant survival and/or prevent further spread of an invasive plant.</p>	<ul style="list-style-type: none"> • Incursion size is variable.
<p><u>Chemical</u> Judicious, strategically targeted use of herbicides. Applied with handheld sprayers, backpack sprayers, wick applicators, booms and hand-held power nozzles</p>	<ul style="list-style-type: none"> • Incursion size is variable • Restricted use within proximity to bio-agent release sites, species at risk, domestic water intakes, water licenses, agricultural food production systems, environmentally sensitive or riparian areas,

Treatment	Conditions for Use
	pesticide free zones (PFZ), no treatment zones (NTZ), or public use areas.

NOTE: Most invasive plants arrived in North America as seeds and the biological control agents, (insects and diseases) that regulate the IP populations in its native range did not make the move to North America. Biological control involves bringing the specific pests of the invasive plants from their places of origin to North America. There are rigorous screening processes for biological control agents. There is a high degree of confidence that the biocontrol agents will attack the invasive plant species they are targeted for and no other species. Release sites are monitored to determine if the agents establish, if they disperse from the release point, and if they have an impact on the host invasive plant species population. During the monitoring, indications of attack on other plant species will be noted and if found forwarded to Agriculture Canada.

Notification to private property owners

If the treatment, mechanical or chemical, will occur on a site that is near or adjacent to private property, or it extends onto private property, then a “Dear Property Owner” letter is used to inform the owner of planned action. The crew must record in their daybook the time, date, and address of the property where the letter was dropped off. The NWIPC reserves the right to ask the IPMA contractor for this information. Appendix 2 gives examples of two letters. Choose the appropriate letter for the task you are performing.

If contact with the property owner is made while dropping off the letter, try to record the name of the contact and write down any comments received about the proposed treatment plans. These comments will be sent to the NWIPC Field Coordinator.

Treatment Methods

Treatments occur only after a survey indicates treatment is necessary and all potential sensitivities have been identified. The integration of several treatment strategies into an invasive plant management program has been shown to be more effective than using a single option alone. Several treatment options are available. They are mechanical, chemical, or biological. Generally, no individual method will control invasive plants in a single treatment.

The success of different treatment methods depends on the type of invasive plant targeted for control and the site characteristics on which it is growing. The choice of treatment is based on the invasive plant species and the site survey results, or specific direction from the NWIPC Field Coordinator.

Other considerations include:

- seasonality
- weather conditions
- financial and human resources
- site accessibility
- site conditions and sensitivities
- target species density/distribution
- the consequences of not treating

The immediate and long-term goals for a site also influence the choice of management options.

Mechanical

- When conducting mechanical treatments, soil around the plant must be loosened to ensure as much of the root structure is removed as possible.
- After removal of plant materials from the soil, the ground should be tamped down. Contractor.
- When conducting mechanical treatments, all flowers and root fragments will be bagged and removed from site to be disposed of in an approved landfill as soon as possible.
- Contractor will note in IAPP Comments the number of contractor bags filled.

Chemical

- Pesticide Use Signs will be filled out correctly and posted in an appropriate area outside of the treatment zone
 - Placement will allow people to read the sign on both side without entering the treatment zone.
- Pesticide Use signs must be posted outside of the roads mow zone.
- Pesticide Use signs will be picked up after they have been on site for required amount of time.
- When applicable, a Pesticide Free Zone (PFZ) must be identified and flagged prior to commencing any herbicide application.
 - Contractors are provided with 2 colours of flagging tape (orange & yellow) for the purposes of indicating where a PFZ begins. One colour is to flag the regular 10 m PFZ and the other colour is to be used for marking a 1 m reduced set back PFZ.
 - The reduced set back must be flagged if treating selectively with glyphosate within the PFZ.
- Unless approved by the NWIPC Field Coordinator, treatments will occur on the same day as the survey.
- When using glyphosate products, the applicator must be extremely careful in the application, to avoid unnecessary die-back of non-target plants and native vegetation.
- When using residual herbicide products, the applicator should fully cover the plants being targeted and a 1.5m perimeter around the plant or plant cluster.
- If the decision is made to conduct herbicide operations within any Municipal boundary, unless it has been discussed with and approved by that Municipal Partner and the NWIPC Field Coordinator, only glyphosate products shall be used.
 - **The Municipal partner must be consulted with and informed a minimum of 2 business days** prior to the commencement of any herbicide treatments within their Municipal boundaries, including treatments on publicly accessible Crown lands within Municipal boundaries (highway rights of way, parks, etc.).
 - This ensures Municipal staff can provide informed responses to inquiries from the public.
- If the decision is made to use herbicides to control invasive plants on private property, while working under contract for the NWIPC, the crew will ensure they have a signed copy of the 3-part NWIPC waiver form for herbicide use on private property. One copy is for the landowner, one copy is for the contractor's records, and the last copy is to be submitted to the NWIPC.
- When private work opportunities arise as a result of being an NWIPC IPMA Contractor, including work involving the NWIPC *Landowner Rebate Program*, it is up to the contractor to exercise due diligence and comply with all applicable legislation and regulations
 - The contractor must make it clear that the private work is being done under their own business and they are not acting as the NWIPC IPMA contractor

- Before applying herbicide, applicators will make attempts to identify and locate unregistered domestic and agricultural water sources through visual observations and by contacting the landowner/occupier using the *Private Property Owner* letter before herbicide applications
- When conducting herbicide treatments, the field crews should refer to the application rate chart provided but must always defer to the herbicide label.
- **No herbicides containing 2, 4-D will be used on the MOTI jurisdiction.** Only glyphosate products will be used inside gravel pits unless prior approval is obtained from the MOTI representative.
- When treating isolated or small clumps of lower priority plants, the use of a residual herbicide is preferred to maximize efficacy

Deadheading prior to chemical treatment

- Plants targeted for herbicide treatment must be deadheaded if flowers are present to ensure no seeds are produced.
 - Removing flower heads also helps the NWIPC in its efforts to work with beekeepers in the region who are concerned about bees coming to flowers that may have chemicals on them
- When deadheading prior to herbicide use, no mechanical treatment is recorded.
 - Only the chemical treatment is recorded along with a comment about the deadheading having been completed prior to herbicide being applied.

Spray Equipment Calibration requirements

All herbicide applicators must calibrate their spray packs to ensure accurate and even application of herbicides (see Appendix 3 for backpack sprayer calibration).

- Calibration is to occur at the beginning of each season and then every 10 days, or if something on the spray pack has been altered/fixed in the interim.

Weather Monitoring

Wind speed and temperature will be monitored **at each** chemical treatment site before treatment occurs to ensure proper weather conditions for herbicide application and that optimal weather conditions have not changed throughout the day.

- Herbicides applicators are responsible for checking each product label for guidelines on applying herbicides under various weather conditions.

Stop Treatment Conditions

The certified pesticide applicator has the final authority on when herbicide applications should be stopped due to inclement weather or adverse site conditions.

- Herbicide operations will be stopped when the weather parameters do not meet the requirements for efficacious treatment according to the herbicide manufacturer's label.
- If any label-indicated weather situation occurs while treatments are underway, or rain fall is observed in the area after treatment occurs (refer to herbicide label for product rain fastness), notes will be added in the Treatment Comments indicating what occurred or was observed.

Strategies and Procedures to Protect Water Sources

Before applying herbicide, applicators will make attempts to identify and locate unregistered domestic and agricultural water sources (visual observations and by contacting the landowner/occupier) before herbicide applications.

- Use of the property owner letters should be recorded in crew day books for sites on crown or municipal lands
 - Crews will use the NWIPC Waiver Form for herbicide use on private property.

The tables below describe the use of protective measures to protect water sources. These tables reflect the minimum standards for No Treatment Zones (NTZs) Pesticide Free Zones (PFZs) as specified in Sections 71, 73, 74, and 77 of the *Integrated Pest Management Regulation (IPMR)*.

- NTZs and PFZs will be identified, marked/flagged prior to any herbicide application.

Table 5. IPMR NTZ guidelines for water supplies or wells

IPMR Section	Uses	Permitted Applications	NTZ
71(3)	All pesticide applications except bacterial pesticides	General Rule – Must maintain a 30 m NTZ around a water supply intake or well used for domestic or agricultural purposes, including water for livestock and irrigation purposes	30 m NTZ
71(4)	All pesticide applications except bacterial pesticides	May reduce the NTZ under section 71(3) if reasonably satisfied that the smaller zone will ensure that pesticide from the use will not enter the water supply intake or well	NTZ at discretion of applicator

Table 6. IPMR PFZ guidelines for water bodies and streams

IPMR Section	Uses	Permitted Application	PFZ
73(1)	Non-glyphosate Applications	Around or along a body of water or dry stream and classified wetland using any pesticide except glyphosate, subject to label restrictions and including all application methods	10-meter PFZ
74(2)(a) and 77(2)	Glyphosate Applications	If the glyphosate product is applied by selective application methods up to but not below the high-water mark of temporary, free-standing bodies of water that are not fish-bearing at any time of the year and do not drain directly into a fish-bearing body of water	1-meter PFZ above the high-water mark
74(2)(b)	Glyphosate Applications	If the glyphosate product is applied by selective application methods over a dry stream that is not fish-bearing at any time of the year and do not drain directly into a fish-bearing body of water	0-meter PFZ

Applying and Transporting Herbicides

Qualifications and Responsibilities of Persons Applying Herbicides

The transportation, storage, handling, application, and disposal of pesticides are governed by federal and provincial legislation. Contractors will follow safe handling practices including workplace requirements for the Workplace Hazardous Materials Information System (WHMIS) labeling and worker education. The required practices for pesticide applicators are detailed in:

- Work Safe BC Occupational Health and Safety Regulation – BC Regulation 296/97 as amended by BC Regulation 185/99 – Sections 6.70 to 6.109
- Canadian Pesticide Education Program Applicator Core Manual, 2011
- Work Safe BC Standard Practices for Pesticide Applicators.

All herbicide applications will be completed by a person who holds the *Industrial Vegetation & Noxious Weed Applicator* certificate, or by a certified *Assistant Applicator* under the direction of a person holding a current Pesticide Applicator certificate.

Safely Transporting and Storing Herbicides

The Transport of Dangerous Goods Act regulates the handling and transportation of poisonous substances that may include herbicides. Herbicides will be stored in accordance with the IPMA, IPMR and the Work Safe BC document Standard Practices for Pesticide Applicators.

SECTION 7 – IPMA CONTRACTOR TRACKING FORMS

Overview

Tracking Form data is the secondary point of collection on crew activities. The Tracking Forms allow us to:

- Track and report operational costs to funding Partners
- Track work progress
- Track budget allocations
- Generate road reports
- Ensure IPMA Contractors get paid in a timely fashion

The Tracking Form is made up of several worksheets (Fig. 2). The contractor enters data on only four of the worksheets – DATA, InvALL, MOTI Roads, FLNR Roads.

	A	B	C	D	E	F	
	Invoice	IPMA	Contractor	Date dd-mm-yyyy	Paper ID or IAPP Site ID	Gravel Pit #	Are
1							
2	1	Prince George	DART				
3	1	Prince George	DART				
4	1	Prince George	DART				
499	1	Prince George	DART				
500	1	Prince George	DART				

At the bottom of the spreadsheet, there are several tabs: CODES (red), DATA (green), InvALL (red), AWARE (yellow), BCHYDRO (yellow), MOTI Roads (green), and FLNR Roads (green). Brackets below the tabs indicate that AWARE and BCHYDRO are 'Jurisdiction tabs' where 'No data is entered', while MOTI Roads and FLNR Roads are 'Road Reports' where 'Enter RoW/shoulder survey details, here.'.

Figure 2. Sample of Tracking Form showing tabbed worksheets No data is entered These are Road Reports. Enter RoW/shoulder survey details, here.

- All contractors will fill in the Tracking Form using the master template provided by the NWIPC.
 - The form is customized to each Contractor’s contract (rates, number of crew, etc.) and consists of labelled worksheets.
- All contractor activities (hours, kilometers, expenses and so on) are compiled based on IPMA and jurisdiction and downloaded to the NWIPC’s tracking database.
- All chargeable items, except Expenses, have pre-determined rates established in the IPMA contract.
- Contractor invoices (InvALL worksheet) are generated directly from the DATA worksheet, which eliminates any room for error and allows the NWIPC to verify activities and costs for each jurisdiction.
- Individual jurisdiction costs (e.g., BC Hydro tab) are automatically populated from the DATA worksheet and for use by the NWIPC, only.

Tracking Form expectations

Please read the definitions and explanations carefully. Incorrect entries will delay processing your invoice. If you have questions, contact the NWIPC Field Coordinator or Program Manager.

Contractor Tracking Forms will be submitted bi-monthly on the 1st and the 16th day of each month, per the IPMA Service Agreement.

- Prior to submission of any Tracking Form the contractor will ensure that the sum of all partner invoice tabs adds up to the total on the Invoice All tab.
 - If it does not add up to the same amount, there is an error on the Data tab. This error needs to be found and fixed prior to submission.
- It is important to fill the data in correctly. **DO NOT overwrite/change any cell formats!**
- The CODES tab is for reference. **Do not add or change anything.**
- The DATA tab is where all billable time and expenses get reported.
- The InvAll tab only needs the Invoice Date entered, no other entries or changes should be made on this tab
- The MOTI Roads and FLNR Roads tabs hold data collected during road shoulder inventories.
- No entries or alterations in any Jurisdiction tab (e.g., BCHydro, MUNSM, MUNBL, FORTIS). Jurisdiction tabs summarize the costs for various funding partners. The cost to the partner is auto populated from the DATA worksheet

Tracking Form DATA tab fields

Invoice

CANNOT BE BLANK. Enter your company invoice number, once in the first cell and it will auto populate down.

IPMA

NO ENTRY REQUIRED. This field is automatically generated prior to you receiving the form.

Contractor

NO ENTRY REQUIRED. This field is automatically generated prior to you receiving the form.

Date dd-mm-yyyy

CANNOT BE BLANK. Enter the date in the format shown in the column label. It will convert to an accepted date format. Do not overwrite.

Paper ID or IAPP Site ID

Enter Site ID. Paper ID's are rarely used. CAN BE BLANK if activity is related to planning and prep or other non, field-related activity, or an expense.

Gravel Pit

Enter MOTI Gravel Pit number as provided in your work plan for MOTI gravel pits/quarries.

Area Surveyed (ha)

For Gravel Pits only, CANNOT BE BLANK if you entered a Gravel Pit #.

Location

Description is copied from IAPP data.

Crew Size

Enter number of crew (cannot be more than agreed upon in your contract, usually 2 people)

Field Jurisdiction

CANNOT BE BLANK. Choose from the drop-down list. This may be copied down once you've made the first pick. *Jurisdiction reflect the funding partner, in most cases.*

- There are two "jurisdictions" which are not partner-based. They are AWARE and REDRR. See AWARENESS field definition.

Note: You may split costs (supplies, hours and km) on the NWIPC Tracking Form to fairly spread the cost of invasive plant management across Jurisdictions, ONLY if the IP infestation covers more than one jurisdiction, e.g., MOTI RoW adjacent to FLNRO jurisdiction, Municipal land, or other Jurisdiction

Expenses

This field is used for allowable expenses other than hours and kilometers. Costs for herbicides and materials, e.g. NWIPC approved seed, must be coded to the Jurisdiction and IAPP site on the date the materials were used.

Note: Record equipment costs, boats, ferries, etc. in this field. Provide copies of receipts, scan and email or hardcopy via mail.

Survey & Inventory Hrs

Enter the total time taken to complete the site survey or inventory; this is not man hours as the number of crew is pre-entered in the Crew Size field when you receive your tracking form master.

Includes field time related to:

- survey of existing and new sites
- recording of survey and site data
- herbicide use notice sign removal
- planned inventory projects

Survey & Inventory Kms

Record kilometers from start to finish of the day, divide the total kilometers travelled in the day by the number of sites managed. See also Treatment Kms.

Treatment Hrs

Enter the total time taken to complete treatment(s). See Survey & Inventory Hrs.

- Hours include time spent:
- applying treatments
- mixing of chemicals
- flagging Pesticide Free Zone (PFZ) prior to treatment
- treatment delivery (digging, mowing, pulling, spraying, etc.)
- recording of treatment data
- bagging and disposing of plants when required
- cleaning tools

Treatment Kms

If no treatment occurred, enter the kilometer amount in the Survey Column. If treatment occurred on site enter the kilometer amount in the Treatment Column.

Awareness Hrs

You must select “AWARE” in the Jurisdiction field drop down. Crew hours – same as for Survey & Inventory.

Includes time spent:

- talking to the public about the program while doing field work
- hotline call responses up to the point of giving them a landowner rebate application
- meetings with partners/agencies involved with the program
- helping at awareness events like Garden Blitz, farmers markets, etc. only if requested by the NWIPC; does not include volunteer hours outside of hours for continuing education or professional association credits
- representing NWIPC during presentations, field tours, etc.
- contacting partners and landowners regarding treatment and scheduling of treatment timing e.g., municipal managers, gravel pit managers, road maintenance managers, etc.

Note: There is a limited allowance for Awareness. Awareness budget is in the Budget Allocation table in the IPMA Contract.

Awareness Hrs/Kms

Record kilometers travelled if attending events not related to field work.

P & P Hrs

Planning and prep for the season. These activities include office work such as:

- Mapping sites
- Crew scheduling etc.
- P & P hours must be coded to the applicable jurisdiction(s).
- Contacting partners and landowners regarding treatment and scheduling of treatment timing e.g., municipal managers, gravel pit managers, road maintenance managers, etc.

Note: Time spent on planning and preparation prior to field work will be coded to a field jurisdiction (i.e., MOTI, MFLNRO, BNRD, etc.). You can spread the time over two or more jurisdictions (see Jurisdiction) but it must be reasonable. For example, if a small town or municipality budget allocation is \$1,000, then we don't expect to see the same number of hours for P & P as we would for a large budget allocation such as FLNRO or MOTI.

P & P Kms

Preparation and Planning is an “office” activity and will have very limited kilometer charges. If meetings with partners are required, kilometers travelled to that meeting should be recorded here.

Data Entry Hrs

THIS IS NOT IAPP DATA UPLOADING.

It refers to time spent completing the Contractor Tracking Form and checking the NWIPC IAPP Data Entry Submission form for errors (e.g. misplaced decimals, plant codes, etc.) prior to sending it to the NWIPC. Unless there is a contractual agreement that the contractor will upload their own data.

- Enter your time spent entering data on the Contractor Tracking Form and checking NWIPC IAPP Data Entry Submission Forms for completeness and accuracy prior to submission.
- Crews are to be trained to record and submit data correctly from the field. Data checking should not require much time. If it does, more training should be completed with field crews.

IAPP data that cannot be loaded from the submission form is data that was recorded incorrectly. Data sheets that fail to load will be sent back to the contractor for correction at their own expense.

NOTE: Data entry into your Contractor Tracking Form is an activity that can span numerous jurisdictions during a single session. The time spent on data entry must be coded to a field jurisdiction. Keep it simple; that is, record the most common jurisdiction during a session, and over the season spread the data entry hours among all jurisdictions you did work for. Be reasonable - your hours should reflect the size and budget allocation for the jurisdictions.

Do not enter or change any data past the Data Entry Hrs column.

Recovery of expenses not included in your service agreement

Pre-work meeting and training

Pre-work meetings and/or training provided by the NWIPC are not included in your contract budget. Prepare a standard company invoice as soon as possible after the costs have been incurred.

Do not refer to the NWIPC contract number on your invoice. Do include:

- date of work
- description of activity, e.g. attended contractor training in Terrace
- use your contract specified rate for hours and kms
- provide receipts for accommodation, food, and out-of-pocket expenses; these are reimbursed at cost

APPENDIX 1

NWIPC Herbicide Policy

NWIPC Policy on Herbicide Treatment Within Municipal Boundaries and Residential Areas

Purpose and Scope

This policy addresses herbicide use on non-crown land.

The NWIPC provides invasive plant treatment through contractors. They follow the current provincial government Invasive Plant Pest Management Plan (PMP) developed to meet obligations under the Weed Control Act and Forest and Range Practices Act, and in accordance with the Integrated Pest Management Act and its regulations. The PMP applies only to Crown Land.

This Policy directs treatment operations on all other lands – non-crown, residential and local government-controlled lands. While not strictly required, NWIPC directs their contractors to operate in the spirit of the PMP on all lands.

Policy

The NWIPC uses an integrated pest management approach that includes public awareness, reporting, inventory, planning, prevention, and biological, cultural, manual, mechanical and herbicide treatments. Treatment includes assessment of a site following the current strategic plan, establishing injury levels and treatment thresholds, and treatment options. All the contractors and crews have pesticide applicators, certified in the Industrial Vegetation & Noxious Weeds category which includes invasive plants. Licensed contractors and their Certified applicators must follow the herbicide product label, which is a legal document.

Procedure

As is stated in the Services section of each NWIPC Invasive Plant Management Area contract, when a decision has been made to use herbicides, the contractor will notify local area residents of herbicide application if working immediately adjacent to private land. This will include door-to-door written and/or verbal notification to discuss treatment, as well as any water well and creek locations. This is not a legal requirement, but a courtesy, and is the procedure used to prevent or minimize public complaints about the work done by the NWIPC. Before treating a site with herbicides, NWIPC contractors must consider the timing of treatment relative to the use of public spaces with unrestricted access as well as the extent of their use.

From time to time there may be inquiries about the invasive plant management program. The contractor will respond courteously to reasonable requests for information. If someone opposes herbicide application at the site and demands that no spraying is done, the contractor will cease spraying, refer that person to the Field Coordinator and if possible, get the person's contact information for follow-up purposes. The contractor will contact the Field Coordinator as soon as possible.

Spraying will not resume until the Field Coordinator has given the contractor approval.

Consequences

Should a complaint-driven incident occur, the Field Coordinator, Program Manager and NWIPC Directors will investigate, mitigate the incident and determine consequences. If the contractor is deemed to be in contravention of their contract, consequences may include loss of the contract holdback and/or termination of the contract.

APPENDIX 2

Property Owner Letters

Invasive Plants on Private Property

Use this letter for plants known or thought to be on private property

Date:

Dear Property Owner,

We are conducting Invasive Plant Management and Control work for; [write in Municipal or Regional District partner name]

Our local contractor for your area would like to discuss management options and possible dates for getting this work completed, please call the number listed below.

Site Number & Target Invasive Plant(s); [list site number and all plants being targeted]

The Northwest Invasive Plant Council (NWIPC) needs to inform you that an invasive plant is suspected to be growing on your property. Invasive plants are introduced species that lack natural predators and are able to grow and reproduce very rapidly. This makes invasive plants highly destructive, competitive and difficult to control. BC has legislation designed to protect natural resources, agriculture and industry from the negative impacts of invasive plants. The BC Weed Control Act imposes a duty on all land occupiers to control noxious weeds.

Invasive plants can be difficult to control because of their large root systems or heavy seed production. Please control invasive species on your property, and prevent spread by:

Cleaning all tools and clothes used when removing invasive plants

Minimize soil disturbance when removing weeds

Dispose of pulled plants, clipped flower heads, and bits of roots and stems that can re-grow, by double-bagging and taking to the landfill to be buried

Follow up after removing invasive plants; pull new plants as they sprout

Check and clean recreational equipment (ATVs, bicycles, trucks, riding and hiking gear) before leaving to come home

Please read the safety and use directions carefully when using herbicides

Please call the NWIPC Weed Reporting Hotline at 1-866-449-3337 if you experience problems getting in touch with the local area manager, or in controlling invasive plants on your property, wish to report invasive plant sites or for more information about our programs. Go to www.nwipc.org or www.bcinvases.ca for additional information on invasive plants and what you can do.

Thank you for your attention to this pressing matter.

Local Area Manager: [Insert your Company Name and Contact]

Managing/treating plants on sites adjacent to private property

Use this letter when managing plants on a right of way adjacent to private property

Date:

Dear Property Owner:

We are conducting Invasive Plant Management and Control work for; [write in partner name]

We plan to manage plants on the right of way on the best weather day after; [will usually be same day]

Site Number & Target Invasive Plant(s); [list site number and all plants being targeted]

Approx. area to be treated; [write in area size]

Description of approx. treatment location(s); [write in a brief description]

The Northwest Invasive Plant Council (NWIPC) needs to inform you that an invasive plant has been found growing on the right of way outside of your property. Invasive plants are introduced species that lack natural predators and are able to grow and reproduce very rapidly. This makes invasive plants highly destructive, competitive and difficult to control. BC has legislation designed to protect natural resources and industry from the negative impacts of invasive plants. The BC Weed Control Act imposes a duty on all land occupiers to control noxious weeds. The NWIPC and our local area contractors operate under the guidance and direction of the Invasive Plant Pest Management Plan for Northern BC, PMP # 402-0664-15/20.

Invasive plants can be difficult to control because of their large root systems or heavy seed production. Please control invasive species on your property, and prevent spread by:

Cleaning all tools and clothes used when removing invasive plants

Minimize soil disturbance when removing weeds

Dispose of pulled plants, clipped flower heads, and bits of roots and stems that can re-grow, by double-bagging and taking to the landfill to be buried

Follow up after removing invasive plants; pull new plants as they sprout

Check and clean recreational equipment (ATVs, bicycles, trucks, riding and hiking gear) before leaving to come home

Please call the NWIPC Weed Reporting Hotline at 1-866-443-3337 if you experience problems getting in touch with the local area manager, or in controlling invasive plants on your property, wish to report invasive plant sites or for more information about our programs. Go to www.nwipc.org or www.bcinvases.ca for additional information on invasive plants and what you can do.

Thank you for your attention to this pressing matter.

APPENDIX 3

Calibrating Herbicide Application Equipment

Maintenance of Equipment

All herbicide application equipment for invasive plant management shall be safe, clean, in good repair, and compatible and appropriate for the herbicide being applied. All equipment shall be inspected and calibrated prior to the start of herbicide applications each year and once every 10 days throughout the application season. Backpack sprayers and vehicle-mounted sprayers shall also be cleaned and re-calibrated when changing herbicide products.

Calibrating Backpack Sprayers

Even small backpack sprayers require calibrating. Accuracy and knowledge of the sprayer output is essential for proper application of herbicides. Knowing the sprayer output will ensure correct rates of herbicide is being applied to achieve the required level of control.

Before Calibration

- 1) Make sure the tank is clean to prevent clogging of hoses and nozzles.
- 2) Check that all hoses and fittings are not leaking,
- 3) Ensure the nozzle is not worn or damaged.

These inconsistencies will certainly affect the output.

Calibrating

First measure the delivery rate or the output of your backpack sprayer by:

- 1) Accurately measure and mark a test area in the field. For example, a 50 square meter area.
- 2) Pump up pressure on the backpack sprayer and begin spraying over the measured test area, while maintaining a steady, uniform walking speed and a steady pumping pace, ensuring you are covering the ground evenly with spray and keeping the height of the nozzle at the same distance above the ground.
- 3) (Variation in speed and pumping pressure will change the output)
- 4) Track the amount of time it takes you to spray the area you have marked out.
- 5) Accurately measure the amount of water required to refill the tank by spraying water from your backpack into a container for the same period of time it took you to spray the measured area. (Ensure you maintain constant pump pressure)
- 6) Calibrate the sprayer delivery rate (output in L/ha) by using the following formula to find the correct amount of herbicide to measure into your backpack.

$$\text{Sprayer Delivery Rate (L/ha)} = \frac{\text{Liters used in test} \times 10,000 \text{ m}^2}{\text{Test area (50 square meters)}}$$

i.e:

$$\frac{\text{L} \times 10,000 \text{ m}^2}{10 \text{ m} \times 5 \text{ m}} = \frac{\quad}{50 \text{ m}^2} = \quad \text{L/ha (sprayer delivery rate)}$$

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Secondly, calculate the area that can be treated with a full tank:

$$\text{Area sprayed by 1 tank} = \frac{\text{Volume of spray mixture in tank (capacity in liters)}}{\text{Sprayer Delivery Rate (Liters per hectare)}}$$

i.e:

$$\frac{\text{L}}{\text{L/ha}} = \text{ha sprayed by 1 tank}$$

Thirdly, calculate the amount of herbicide to add to the backpack sprayer tank as follows:

$$\text{Amount of herbicide to add to tank} = \text{application rate of herbicide (Liters per hectare)} \times \text{area sprayed by one tank}$$

i.e:

$$\text{Amount of product to add to tank} = \text{rate (L/ha)} \times \text{ha.} = \text{liters or milliliters (=amount of herbicide to add to tank)}$$

(To convert liters to milliliters, multiply x 1,000)