Toitū Te Whenua
Land Information
New Zealand

Wilding Conifer Information System User Guide

How to Collect, Enter and Manage Data v4.0

Updated November 2026

Contents

1. Introduction 5

2. NWCCP Reporting Obligations 5

3. Required Data 7

3.1. Data Layers 7

3.1.1. Management Unit 7

3.1.2. Infestations 8

3.1.3. Operational Areas 8

3.1.4. Control Activities 9

3.1.5. Survey Activities 9

4. Data Standards 10

4.1. Spatial Information 10

4.1.1. Infestation 10

4.1.2. Operational Area 11

4.1.3. Activity 11

4.2. Attribute Information 14

4.2.1. Infestation 14

4.2.2. Activity 16

4.2.3. Chemical 17

4.2.4. Operational Area 19

4.2.5. Management Unit Funding and Costs 20

5. Annual Data Workflow 21

6. Wilding Conifer Information System Apps 22

7. Navigating Data Editor 23

7.1. Turn Layers On/Off 23

7.2. Change Basemap 23

7.3. Select/Deselect Polygons 23

7.4. View Polygon Attributes 24

7.5. Undo/Redo 24

8. Adding Funding/Cost Information 25

8.1. Adding/Deleting Management Unit Funding/Cost Information 27

9. Create Data in WCIS 28

9.1. Draw a polygon 28

9.2. Create polygon with same extent as an existing polygon (duplicate polygon shape) 28

9.3. Create multi-part polygons 29

10. Import Existing Data into WCIS 30

10.1. Import files 30

10.1.1. Convert Temp Layer - Polygon 30

10.1.2. Convert Temp Layer - Line 31

10.1.3. Convert Temp Layer - Point 32

11. Recording Chemicals 34

11.1. At Control Polygon Creation 34

11.2. On Previously Created Control Polygon 34

12. Update Data 35

12.1. Updating Infestations 35

12.2. Update Attributes 36

12.3. Update Shape 36

12.3.1. Split Polygon 36

12.3.2. Add to Polygon 37

12.3.3. Subtract from Polgon 37

12.3.4. Reshape Polygon 37

12.3.5. Buffer Polygon 38

12.3.6. Merge Polygons 38

13. QA and Monthly Reporting 39

13.1. Completing QA 39

14. Health and Safety 40

14.1. Reporting a Health and Safety Incident 40

14.1.1. On the website 40

14.1.2. On the Survey123 mobile app 40

14.2. Viewing Health and Safety Incidents Across the Programme 41

14.3. Creating, Viewing and Editing H&S Audits 41

14.3.1. Downloading and setting up the Survey123 mobile app 41

14.3.2. Completing the Survey123 mobile form 42
14.3.3. Viewing and Editing Submitted H&S Audits in WCIS 42

15. Report an Issue 44

1. Introduction

This guide is to assist a user of the Wilding Conifer Information System (WCIS) to enter and manage data related to infestations and operations. It includes information on reporting obligations for the National Wilding Conifer Control Programme (NWCCP) as well as sections on data collection and standards, and recommended workflows to maintain the standards. This guide should be the first reference for answering any questions you have regarding the Wilding Conifer Information System.

Sections 2 - 5 cover what data is required for the system. Sections 6 - 15 outline how to use the system.

Contact adminWCIS@linz.govt.nz if you require a user account or have any queries.

The link to the Wilding Conifer Information System is: https://wildpines.linz.govt.nz

2. NWCCP Reporting Obligations

Data entered into WCIS forms part of the National Wilding Conifer Control Programme monthly reporting process.

If you are carrying out work funded by the National Wilding Conifer Control Programme or within an active Management Unit, you must enter data communicating funding, infestations, activities and operations into the Wilding Conifer Information System.

At the start of each financial year, you must create Operational Areas within an active Management Unit. An Operational Area is a section of land you plan to undertake control or survey activities in and includes information about the area, including the budgeted cost for the year's activities.

All funding contributions must also be added to each active Management unit at the start of each financial year and maintained throughout the year.

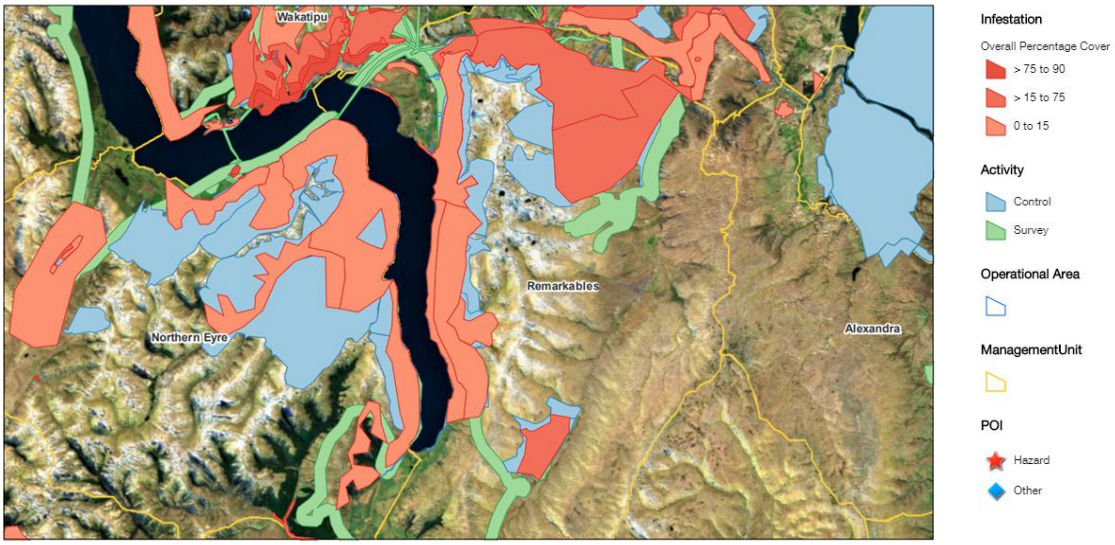
All control and survey data must be entered into WCIS by the 10th working day of the month that follows the end date of work. This ensures alignment between the approval of expenditure by Management Unit Managers and the information used by the Programme to report on progress. Any spend of funding outside of control and survey work (project management, bulk chemical purchase etc) must be recorded against a Management Unit. All activity polygons for active MUs must pass a QA process by the Fund Manager (or nominated Management Unit Manager). This person must also compete monthly reporting to indicate if all data has been entered into WCIS.

Any Infestations discovered or surveyed must be entered or updated as soon as possible. Timely entry will ensure that changes in infestations over time will be captured and useable for analysis of control efficacy.

Health and safety incidents (including near misses) must also be reported to the programme using WCIS. Notifiable incident reports must be submitted within 24 hours of the incident occurring, while near misses or incidents must be submitted within 5 days of the incident occurring.

3. Required Data

The following shows what **spatial** information must be entered into the Wilding Conifer Information System, as well as when it should be uploaded or updated.



3.1. Data Layers



3.1.1. Management Unit

- Static
- Determined by the National Wilding Conifer Control Programme Team
- Operational contract management for the MU assigned to one person from the region
- An active management unit receives funding from the NWCCP
- Contact WCIS Admin to request a change to a boundary

Management units are the administrative boundaries the country has been divided into for the National Wilding Conifer Control Programme. Management units define where our operations can take place, and as such, our activities and operational areas must fit entirely within a single management unit. Funding (both from the programme and outside the programme), in-kind contributions and costs (which are not applicable to a single control activity polygon) are held against each management unit in a related table.

Changes to a Management Unit boundary must be submitted to WCIS Admin and approved by the NWCCP Team.

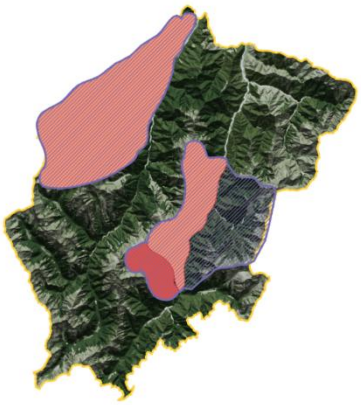


3.1.2. Infestations

- Capture the area infested
- Record infestation features such as species and density
- Enter an infestation into WCIS prior to control commencing
- Keeping infestation data up to date will assist in planning operations, seeing the efficacy of control work and obtaining programme funding

Infestations are the stands of wild pines being targeted by the National Wilding Conifer Control Programme. A stand is defined as a homogenous community of trees sufficiently uniform in composition, structure, age and size class distribution, spatial arrangement, site quality, condition, or location to distinguish it from adjacent communities.

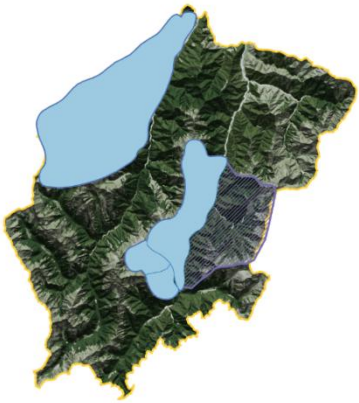
Infestations are a crucial feature in the wilding conifer programme as they describe where the conifers are located, what their nature is, and over the course of time we can measure how they change as a result of control activities.



3.1.3. Operational Areas

- Indicates areas of expected operational activity for a single funding year
- Created by Management Unit Manager at the start of each financial year
- Assigned a budget
- Can be altered later in the year if need be

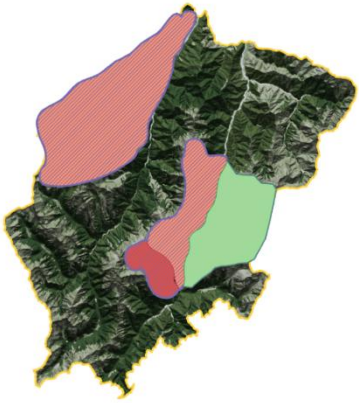
Operational areas are the large scale areas or sites that are being targeted for control within a management unit. Operational areas will reflect the compartments stated in your operational plans provided annually to MPI. Each year a new set of operational areas will need to be created to represent the coming year's operational areas.



3.1.4. Control Activities

- Control operations carried out must be uploaded into WCIS within three business days after receiving the invoice for work
- Convert lines or points received from a contractor into polygons, or drawn in directly
- Infestation characteristics should be collected at the time of control and used to enter/update the infestation for the area – setting the observation date to the day before control taking place

Control activities are the operations carried out to contain or eradicate wilding conifer infestations. Often times a survey is carried out as part of a control activity (e.g. search and destroy, ABBA), in this case the activity should be recorded as a control activity. This is due to the logic that, if there was a tree in the area flown that can be controlled with the utilised technique, it would have been controlled. The exact location of infestation within the controlled area should be reflected in the infestation layer – create an infestation polygon utilising point data and state its observation date as the day before the control activity taking place.



3.1.5. Survey Activities

- Surveys carried out must be uploaded into WCIS within three business days after receiving the invoice for work
- Convert lines or points received from a contractor into polygons, or drawn in directly
- After surveying an area, the infestation for that location should be updated – as seen in the next picture

Survey Activities are the operations carried out to discover new infestations and re-evaluate the state of known infestations. When a search and destroy operation is carried out, it should be recorded as a control activity, not survey. This is due to the logic that, if there was a tree in the area flown that can be controlled with the utilised technique, it would have been controlled. The exact location of infestation within the controlled area should be reflected in the infestation layer – create an infestation polygon utilising point data and state its observation date as the day before the control activity taking place.

4. Data Standards

Data should be collected to the prescribed data standard, as outlined in this section. It covers what attribute information is required for each layer and how the appropriate area for a polygon should be determined.

4.1. Spatial Information

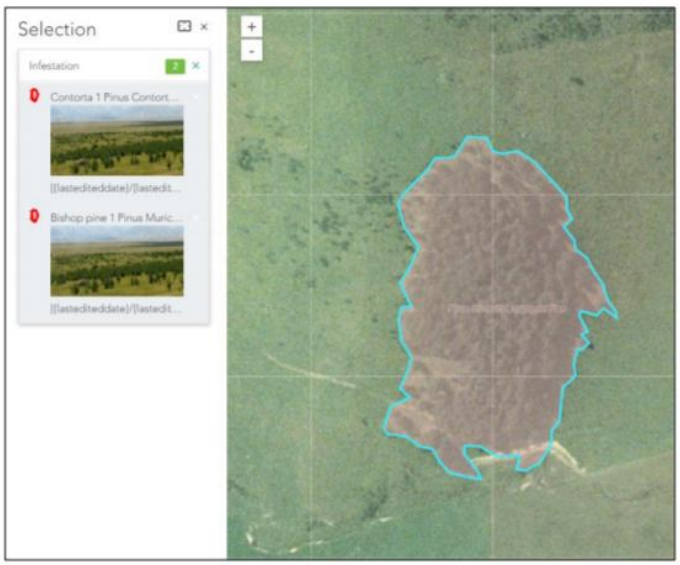
Areas need to be recorded as polygons in the system – point and line data can only be used for conversion purposes. This section will provide guidance on how you should define a boundary (spatial extent) or convert track logs and point data into a polygon.

4.1.1. Infestation

The boundaries of an infestation should be defined by an area of homogenous features, i.e. trees within the boundaries of an infestation should be the same species while also exhibiting a similar density and size class. This is not a simple task and the boundary where homogenous features end is not typically clear cut and easily represented. As such, a degree of subjective interpretation is required to make the best possible judgement of an infestation's boundaries.

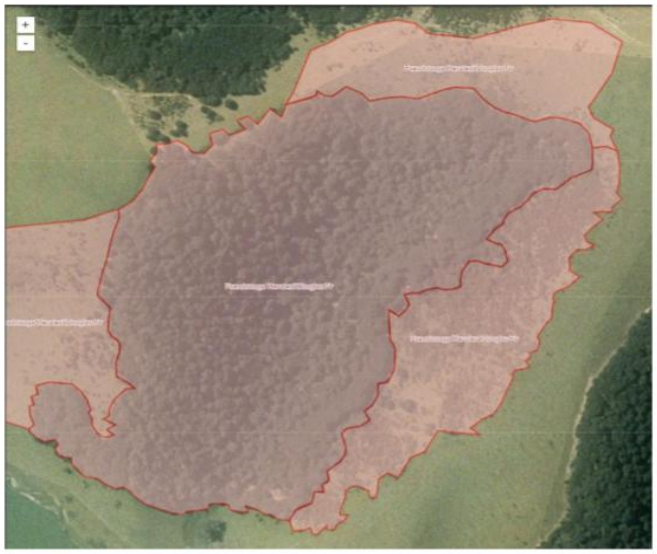
As a first priority, each infestation needs to be a single species. Where there are multiple species in an area a separate infestation shape must be created (although the area of the shape can be the same and therefore, overlapping) as each species requires a new set of attributes captured.

Figure 1: Spatial view showing two infestations that exist in the same space, with the same shape



As a second priority, each infestation should have a similar density pattern and size class. For example, a dense forest of a particular species of old trees can be represented as a single infestation. An area of spread that has recently developed from this dense forest, that is categorised by low density and predominantly saplings, should be represented as a separate infestation.

Figure 2: Spatial view showing multiple infestations with contiguous borders, each with a set of attributes based on a homogenous density and size class of the trees within.



4.1.2. Operational Area

An Operational Area shape is defined and named at a Management Unit Manager's discretion. The polygon should cover the area(s) of work that will occur in the current financial year as well as indicate the budget for that year. Operational Areas should never overlap in the same financial year.

4.1.3. Activity

4.1.3.1. Control

Control activities that are recorded using track logs should be converted into polygons for WCIS. If processing data outside WCIS, the conversion should utilise a 'buffer' followed by a 'union' with 'no gaps allowed' unticked. Different control techniques should have different buffer distances, as stated below.

Note that if tracklogs are already buffered outside of WCIS, they do not need to be buffered again once uploaded into WCIS.

Different control techniques should have different buffer distances, as stated below. Please note that these buffer distances are for Control activities that are recorded using track logs should be

converted into polygons for WCIS. If processing data outside WCIS, the conversion should utilise a 'buffer' followed by a 'union' with 'no gaps allowed' unticked. Different control techniques should have different buffer distances, the guidance for which is stated below. Should your buffer distance differ from the guidance below, please refer to Section 10.1.2.

Control Technique	Buffer Distance (m)
Boom Spray	10
Ground Based	20
Aerial Basal Barking (ABBA)/Spot Spray	50-100

Boom Spray Conversion

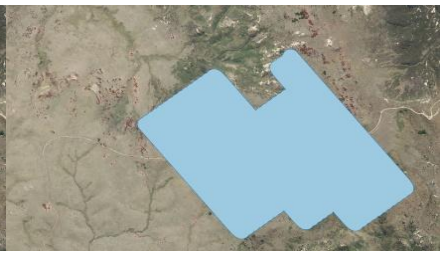
Refer to the pictures below for visual guidance on converting Boom Spray track logs into polygons. Note that the tail end of the flight path, that indicates travelling to/from the control site, has been cut off and isn't included in the polygon.



Flight Path



Flight Path processed into a polygon using a buffer and union tool so there are no gaps when an area is fully enclosed



Resulting Polygon stored in WCIS

ABBA/Spot Spray Conversion

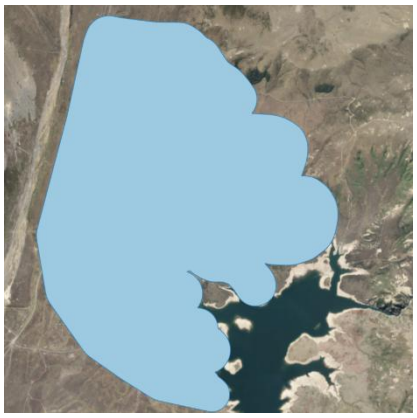
Refer to the pictures below for visual guidance on converting track logs from ABBA and Ground based control into polygons. Any track logs recording travel to/from the control site should not be included in the final polygon.



Flight Path



Flight Path processed into a polygon using a buffer and union tool so there are no gaps when an area is fully enclosed



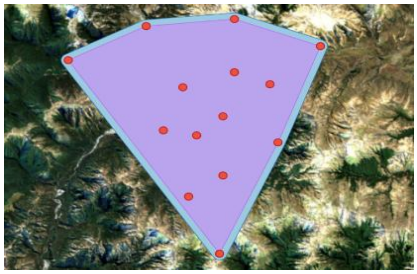
Resulting Polygon stored in WCIS

Point Conversion

Refer to the pictures below for visual guidance on converting control points into polygons. Points should be grouped based on activity occurrence and technique i.e. an ABBA activity that took place in one area for sparse trees over a two day operation. It is recommended that you also update the infestation layer for the same area – use the points as accurate information on infestation density and date the infestation observation date as captured the day prior to the control activity occurring.



Control Points



Control Points processed into a polygon using a 'minimum bounding geometry' (convex hull) and buffer tool



Resulting Polygon stored in WCIS

4.2. Attribute Information

The tables in the following sections identify what information is required for each layer. Each field is tagged with dark grey to indicate who can collect a part of the data. It is advised to use these tables to ensure all required data is being collected during operations, as it is necessary for validating data in WCIS.

4.2.1. Infestation

Areas of land infested with wild conifers are recorded as polygons in the Infestation layer. When entering an infestation into WCIS, it requires the area to be captured as well as the information in the table below.

<table>
<tr><th>FIELD NAME</th><th colspan="2">DESCRIPTION</th></tr>
<tr><td>Name</td><td colspan="2">A self determined name for the infestation. You may wish to apply a naming convention to identify the location and species e.g. Douglas Fir Cobb Valley North</td></tr>
<tr><td>Target revisit date</td><td colspan="2">The date of revisiting the site, where data will again be collected to update the infestation in WCIS.</td></tr>
<tr><td>Species</td><td colspan="2">Species of wilding conifer in the infested area.</td></tr>
<tr><td>Coning percentage</td><td colspan="2">An estimate for the percentage of trees that are coning.</td></tr>
<tr><td>Cultivated</td><td colspan="2">Whether or not the infestation is cultivated.</td></tr>
<tr><td rowspan="2">Extra small</td><td>Less than 0.5m tall</td><td rowspan="6">A count of each size class of tree found in the infestation.

The figures are used to calculate the Total tree count, AOO and Overall Percentage Cover.

If the trees cannot be counted (i.e. high density/too many trees) the Overall Percentage Cover can be manually entered, which will also calculate the AOO</td></tr>
<tr><td>Typically less than 2cm diameter at ground</td></tr>
<tr><td rowspan="2">Small</td><td>Between 0.5m and 2m tall</td></tr>
<tr><td>Typically 2-5cm diameter at ground</td></tr>
<tr><td rowspan="2">Medium</td><td>Between 2m and 5m tall</td></tr>
<tr><td>Typically less than 20cm diameter at 1.4m high</td></tr>
</table>

Large	Greater than 5m tall	
	Typically greater than 20cm diameter at 1.4m high	
Confidence in Data	Indicate confidence in the accuracy of the infestation data by selecting: (a) No Confidence – when only the vague area and density are known (b) Slight Confidence – if the boundary of the infestation is well defined (c) Moderate Confidence – when the data has come from a knowledgeable source (d) High Confidence – if the infestation has been ground-truthed or captured accurately.	
Total tree count	The sum of all tree counts above (automatically calculated)	
AOO (Area of Occupancy)	The area within the EOO which is occupied by conifers, measured in hectares (automatically calculated)	
EOO (Extent of Occurrence)	The total area of the infestation polygon, measured in hectares (automatically calculated)	
Overall Percentage Cover	This is the percentage of canopy cover within the infestation's area (i.e. AOO/EOO). The field is automatically calculated using the tree counts and a preset area for each tree size. For example, an Overall Percentage Cover of 100% represents an infestation that has total canopy cover for the entire extent. An Overall Percentage Cover of 0.001% is likely a very sparse infestation with trees dotted infrequently across the landscape.	
Overall Percentage Cover (Override)	Where it is impractical to count, or estimate, the number of trees in an infestation there is an Overall Percentage Cover Override field which allows users to manually estimate the OPC.	
Comments	Any additional comments.	

4.2.2. Activity

Control and survey operations must be captured in the activity layer.

FIELD NAME	DESCRIPTION
Operational Area Name	The operational area that the activity falls inside. This will be automatically generated. An activity cannot be entered unless it intersects with an operational area. If the activity intersects more than one operational area, the correct operational area can be selected from the dropdown list.
Type	Whether the activity is: **Survey** if you are undertaking an operation to explore and discover infestations, without the purpose of applying control. OR **Control** if you are undertaking an operation to control an infestation, such as a boom spray, or basal barking operation. If you are carrying out a search and destroy operation, which will have elements of survey and control, then report the activity as control.
Method	Either ground or aerial operation for control.
Technique	The technique used to control the infestation.
Lead Agency	The organisation that has commissioned the operation.
Contractor	The contractor organisation conducting the activity. If the lead agency is carrying out the activity themselves then use the lead agency's name.
Start Date	The date that the activity started.
End Date	The date that the activity was completed.
Total Team Hours	Total number of hours worked to complete the activity. When multiple people are involved at the same time then combine the hours for each person.
Actual Cost	The cost of the activity. This includes all transport, wages, materials, chemicals and any other expense incurred as part of the control or survey activity.

Aerial Transport Cost Component	The amount of the total cost (above) that was (if applicable) used for aerial transport for the activity. This field is optional.
Invoice(s)	The reference numbers for any invoice(s) that relate to the activity. This field is optional.
Species Controlled	The most common species that was controlled during the activity. Up to 5 species can be entered. At least one species is required.
Proportion	Relates to the 'species controlled' field above. Enter what proportion of the total trees controlled was that species. Up to 5 entries can be entered, matching the species entered. At least one proportion is required.
Comments	Any additional comments. This field is optional.
Classification	Activities can be marked as "Outside of Programme". By default, they are "Part of National Programme"

4.2.3. Chemical

Chemicals used in a control operation must be recorded in the chemical related table.

FIELD NAME	DESCRIPTION
Chemical	This is the chemical used in a brew or a standard brew (e.g. TDPA).
Quantity	The quantity of the chemical in its concentrated form.
Measure	The measure of the chemical quantity (e.g. litres, millilitres).

4.2.3.1. Chemical Formulations

The following formulations are listed as chemicals in WCIS. These formulations come from the NWCCP Aerial Foliar Spray Application Good Practice Guide. If you use these formulations in your application of chemicals, you can select them as the chemical used after entering a control activity. If your formulation does not match the following formulations, you can enter the individual chemicals and amounts in the chemical related table.

Metsulfuron (1000g) – Douglas fir, *Pinus radiata*, *Pinus, muricata*

Product	Active ingredient totals
1000 g Associate (or equivalent – *requires further research*)	600 g metsulfuron methyl*
10 L Punch Penetrant	10,000 mL oil
2 L Slikka (wetter/penetrant)	1,600 g heptamethyltrisiloxane
4 kg ammonium sulphate fertiliser	2,300 g ammonium sulphate
200 ml Jab	200 ml polyether-modified polysiloxane

Metsulfuron (500g) - Larch

Product	Active ingredient totals
500 g Associate (or equivalent – *requires further research*)	300 g metsulfuron methyl*
10 L Punch Penetrant	10,000 mL oil
2 L Slikka (wetter/penetrant)	1,600 g heptamethyltrisiloxane
4 kg ammonium sulphate fertiliser	2,300 g ammonium sulphate
200 ml Jab	200 ml polyether-modified polysiloxane

TDPA – Pinus species (excluding radiata and muricata)

Product	Active ingredient totals
20 L Grazon or equivalent	18,000 g triclopyr ester
10 L Cutlass 500 or equivalent	5,000 g dicamba
20 L Tordon Brushkiller XT	2,000 g picloram
3.3 L T-Max	259 g aminopyralid
20 L Punch Penetrant	20 L Modified vegetable oil and surfactant blend

0.5 L Li-700	500 mL propionic acid buffer
4 kg ammonium sulphate fertiliser	2,300 g ammonium sulphate
200 mL Jab	200 ml polyether-modified polysiloxane

4.2.4. Operational Area

This layer captures information for planning operations. All fields, except 'comments', are mandatory.

FIELD NAME	DESCRIPTION
Name	A name for the operational area that reflects the name used in your operational plan.
Operational goal	The operational goal that best describes the purpose of the control efforts to be undertaken in the operational area. Choose one of: Containment/Sustained Control Eradication/Containment Exclusion Progressive Containment Site Led
Lead agency	The organisation that is primarily responsible for managing operations within the operational area.
Funding year	The financial year that the operational area represents. Each operational area must relate to a single financial year.
Budgeted cost	The funding provided by the National Wilding Conifer Control Programme that is being assigned to this operational area
Work Type	Categorises the OA as either part of the National Programme or outside of the National Programme.
Comments	Any additional information – this could be pulled directly from the operational plan to provide more context.
Partner Organisation	This field acts as a sub-category to the "Lead Agency" field. Optional (*required only in operational planning phase, not if the operational area is being added mid-year*).
Hectares Specified	The area to be controlled (if known). Optional (*required only in operational planning phase, not if the operational area is being added mid-year*).

Species	The most common species to be targeted. Up to three species can be entered. *Optional (required only in operational planning phase, not if the operational area is being added mid-year).*
Infestation Age	The average age of the infestation to be targeted. *Optional (required only in operational planning phase, not if the operational area is being added mid-year).*
Infestation Density	The average density of the infestation to be targeted. *Optional (required only in operational planning phase, not if the operational area is being added mid-year).*
Activity Technique	The control technique to be used in the operational area. *Optional (required only in operational planning phase, not if the operational area is being added mid-year).*
Herbicide Mix	The herbicide mix to be used in the operational area. *Optional (required only in operational planning phase, not if the operational area is being added mid-year).*
Herbicide Amount	The herbicide amount to be used in the operational area. *Optional (required only in operational planning phase, not if the operational area is being added mid-year).*
Herbicide Cost	The herbicide cost. *Optional (required only in operational planning phase, not if the operational area is being added mid-year).*
Q1 – Q4	Yes/no for if the operation will be taking place during each quarter of the year. *Optional (required only in operational planning phase, not if the operational area is being added mid-year).*

4.2.5. Management Unit Funding and Costs

Management Unit Managers are required to add funding/cost information for each active management unit for each financial year. Funding (both from the programme and outside of the programme), in-kind contributions and costs which are not applicable to a single control activity polygons are held against each management unit in a table.

FIELD NAME	DESCRIPTION
Funding Year	The year in which the funding contribution occurs.
Detail	A description of the funding/cost.
Value	The monetary value of the funding/cost.

Funding/Cost Type	Whether the entry is programme funding, other funding, an in-kind contribution an MU Cost.
NWCCP Funding Type	This is only required if "NWCCP Funding" is selected for the funding/cost type. It specifies whether the funding is from the main budget or carried over from a previous year.
Status	Whether payment of the funding/cost has been made or is still pending.

5. Annual Data Workflow

For effective reporting, it is important that data is entered into WCIS at the right times. This is a guide for when each type of information is needed in WCIS:

Data Type	Required in WCIS
Active/CPP Management Unit Funding Contributions/Costs	Entered at the beginning of the financial year and maintained throughout the year.
Operational Areas	Entered at the prior to the beginning of the financial year (through the operational planning tool) and maintained throughout the year.
Infestation data	Entered/Updated at the beginning of the financial year and maintained throughout the year.
Activity Data (Control and Survey)	Entered throughout the year, within 10 working days of the month (that the work finished in) ending.
QA	Completed monthly, within 10 working days of the month ending.
Health & Safety Reports	Entered for every incident (including near misses). Within five days for near misses and incidents, and within 24 hours for notifiable incidents.

6. Wilding Conifer Information System Apps

The system consists of a series of apps and can all be seen on the WCIS homepage.

Data Editor

Creation, editing and updating of data takes place in this app. The Data Editor is a simplified editing suite which has been purpose built to ensure a minimum data quality.

Data Explorer

This app is a simple map view of data held in the system. It has the ability to view data at all scales and print maps of select information.

Health & Safety Hub

This app allows users to submit H&S incident reports/audits as well as view submitted reports from across the programme.

Data Dashboard

This app contains dashboards for financial reporting information across the programme.

Operational Planning Interface

This interface (available at selected times and with special logins) allows users to enter planned work for the upcoming year for the MPI team to approve.

7. Navigating Data Editor

The following processes are commonly used during creating, editing and updating data within the Data Editor app. Be aware, that the app will time-out after an extended period of time.

7.1. Turn Layers On/Off



- Click on the 'Select Layers' icon on the left-hand panel
- Scroll to target layer
- Click on the eye icon to turn the layer on/off 

7.2. Change Basemap



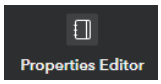
- Click on the basemaps icon
- Click on the desired basemap

7.3. Select/Deselect Polygons



- Click on the 'select by point' or 'select by rectangle' tool in the top right panel
- Use your mouse to select on the map
    - If using 'select by point' click once on the map
    - If using 'select by rectangle' click once on the map then move your mouse to the desired rectangle size and click again
- Go into the 'Properties Editor' button in the top left panel
    - Here the selected polygons will be listed. There may be more than one polygon selected. If multiple polygons are selected, hover over the polygons in the list
        - Polygons will turn be shaded in red in the map view
- In the selection list, click on the target polygon. This ensures only one polygon is selected
- You can also remove polygons from the selection list by clicking the blue 'x' on the right hand side of each selection box

7.4. View Polygon Attributes



- Select target polygon as outlined in section 7.3
- Click on the properties editor button in the top left hand panel
    - A tab will open containing the polygon's attributes

7.5. Undo/Redo



- When editing data there is the possibility to undo or re-do changes. These icons are located in the Data Editor Tab in top left-hand corner

8. Adding Funding/Cost Information

Funding contributions breakdowns are held in WCIS. The functionality allows data on funding (both from the National Programme and other sources) and in-kind contributions to be held against a management unit.

It also holds costs at a management unit level, when they cannot be directly attributed to a single control polygon (examples of this are project management fees from third parties, or things like water tanks being installed to service a whole MU).

This information should be added at the beginning of the financial year, with changes and additions being made throughout the year.

When entering funding, select from the dropdown list of options for the type of funding to be entered and enter the name of the funding source i.e. NWCCP funding. All entered funding needs to having a corresponding MU cost or control polygon associated with it to balance out reporting totals. A summary table and definitions are provided below.

Funding Type	Description
Programme Funding	This is funding which has come through a service agreement between a regional council and MPI and includes streams such as the International Visitor Levy (IVL).
Other Funding (see sub-categories below) ▪ Regional/District Council ▪ Other Agencies (DOC, LINZ, NZDF) ▪ Community Groups ▪ Iwi/Mana whenua ▪ Commercial forest owners ▪ Commercial forest owners (NZFOA) ▪ Other land occupiers Other – specify	This is funding that has not come through a service agreement between a regional council and MPI, but is aligned with the work partially or fully funded through those agreements. This adds to dashboard reporting totals.
In kind Contributions	Goods, services, and transactions not involving money or measured in monetary terms, for example, contributing time, equipment, or costs related to travel & accommodation. This is not counted in dashboard reporting totals.

	MPI has guidance on this which can be shared from wilding.confiers@mpi.govt.nz
Returns from log sales	Funding which has come from log sales which is used to fund further wilding conifer/seed source control costs. This is counted in dashboard reporting totals.
Surrendering of carbon liabilities	This is where a landowner surrenders carbon credits from forest land which was previously registered in the ETS, to enable wilding control to occur. This is not counted in dashboard reporting totals.

For privacy, editing and updating this data is only accessible for people who are assigned to each MU. If you cannot access an MU and you think you should be able to, please contact adminWCIS@linz.govt.nz. Totals from this data (but not individual details) is visible in the Dashboard.

Classification

Funding Type	Description
Part of National Programme	Work which is funded fully or partially by MPI service agreements or is directly aligned with this work. This needs to have funding contributions entered to balance this cost in the reporting dashboards.
Outside of Programme (wilding work) ▪ Regional/District Council ▪ Other Agencies (DOC, LINZ, NZDF) ▪ Community Groups ▪ Iwi/Mana whenua ▪ Commercial forest owners ▪ Commercial forest owners (NZFOA) ▪ Other land occupiers **Other – specify**	Work which is not funded through MPI service agreements. This will not add to the dashboard reporting totals.

Exclude	Has not been funded through MPI service agreements and data quality or confidence is low. Does not add to dashboard reporting totals. This is the default category for DOC WEEDs data.

8.1. Adding/Deleting Management Unit Funding/Cost Information

- Open the Data Editor App.
- Click on the 'MU Funding' button on the top panel
- Select the management unit that you want to add data to from the drop down list

Please note: The list will only show management units that are assigned to you. If you cannot see an MU that you should be able to, please contact adminWCIS@linz.govt.nz

- Click the 'Add Funding' button to add in a new blank data row
- Enter the properties of the funding/cost, note that if "NWCCP Funding" is selected for the funding/cost type, you will then need to specify whether the funding is from the main budget or carried over from a previous year

Please note: When funding is transferred out of one MU to another MU, please ensure that this total is subtracted from the MU you are transferring funding from prior to adding the total to the MU you are transferring to.

- To add another entry, press the green 'Add Funding' button
- Press 'Save' to save your entries against the MU. If you need to add data to multiple MUs, you will need to press save before switching to another management unit.
- To delete a row from the table, click the check box at the far right (under the rubbish bin icon) and then press the 'Save' button.

9. Create Data in WCIS

Use this section if you want to 'draw' polygons (as opposed to uploading shapefiles etc.) of any type into WCIS. All these exercises take place in the Data Editor App unless otherwise stated.

9.1. Draw a polygon

- Navigate to the area you want to make a polygon
- Click Data Editor (top bar) > choose the layer to create a feature in > Click Create
- Turn on snapping if required
- Click on the map to start adding vertices to your polygon
- Double click to finish drawing
- Fill in the features Properties in the left-hand panel
    - It is important to use accurate values for these fields when entering data. This enables precise calculations for reporting and analysis over time.
- Click Save
- Polygon has now been created

Note: When entering a control activity that utilised chemicals, the chemicals used should be recorded as outlined in Section 11 - Recording Chemicals.

9.2. Create polygon with same extent as an existing polygon (duplicate polygon shape)

This process can be used if you want to make a new feature with the exact same shape as another, for example an infestation polygon the same shape as an operational area. If you are creating multiple polygons for different infestation species, it is recommended to include the species in the polygon name as it helps for reference later.

- Select the polygon you wish to duplicate (make sure it is the only thing selected) > Click Data Editor (top left hand side)
- Choose destination layer --> Duplicate
- Fill in the new shape's Properties
- Click Save

Note: When entering a control activity that utilised chemicals, the chemicals used should be recorded as outlined in Section 11 - Recording Chemicals.

9.3. Create multi-part polygons

This can be done when more than one area has the same set of attributes. A scenario for its use is to record multiple sites of control (e.g. boom spraying) that were paid for in the same control operation with the same contractor, period of work and control technique used.

- Create first polygon using Section 10.1 or 11
- Select this polygon using the select tool (as per Section 7.3)
- Click on the add tool in the Data editor tab
- Click and draw the new polygon on the map
- Double click to finish drawing
- Click Save
- New polygon area is automatically added to the selected polygon
- Repeat the above process as many times as appropriate

Note: When entering a control activity that utilised chemicals, the chemicals used should be recorded as outlined in Section 11 - Recording Chemicals.

10. Import Existing Data into WCIS

This process allows you to upload GPX files, KML files or zipped shapefiles that have been created outside of the system. The data must first be uploaded into a temp layer and then converted into its intended layer. The data must result in a polygon. There are tools to easily convert points or lines into polygons once uploaded into the temp layer.

10.1. Import files

- Open the **Data Editor App**.
- Click on the 'Load Data' button on the panel on the top panel
- Click 'Choose File' and navigate to your GPZ/KML or zipped shapefile and click open

Please note: Shapefiles (which are made up of a number of file types that work in combination must be zipped inside a folder before being uploaded. You must zip the file prior to uploading, it cannot be done in the 'Choose File' window.

A zipped file should also only contain one shapefile. If there is more than one shapefile, the process will only upload the first one in alphabetical order. However, a single shapefile can contain more than one polygon.

- Choose the geometry type in the drop box once loaded
- Click the 'Import' button to add the data to the map 

Please note: If you get an error at this point, please contact adminWCIS@linz.govt.nz with the file that you are trying to import

- A message will appear saying 'Data imported successfully' below
- The map will zoom and pan to the location of your data. Data is uploaded directly into a temp layer
- Note: it is possible to turn layers on and off if needed i.e. if an infestation polygon is covering your temp feature
- Follow the steps in the next section for the type of data you have uploaded (point, line or polygon)

10.1.1. Convert Temp Layer - Polygon

To get polygon features from the temp layers into their destination layer (i.e. activity, infestation or operational area), they must duplicated into the correct layer.

- Navigate to your purple temp layer polygon in Data Editor. If you are not already at the temp polygon do this by:

- Switch on visibility of the temp layers: Layers --> Temp Polygon --> Check the tick box
- Select your temp feature
  - Ensure that only the desired temp polygon features are selected (as per Section 7.3)
- Click Data Editor (top bar) --> choose the layer for the feature to join --> Click 'Duplicate'
- Fill in feature's properties
  - It is important to use accurate values for these fields when entering actual data. This enables precise calculations for reporting and analysis over time
- Click Save
- The polygon in the WCIS layer with attributes will now be visible (you may need to switch off the temp layer to see this)

Note: When entering a control activity that utilised chemicals, the chemicals used should be recorded as outlined in Section 11 - Recording Chemicals.

10.1.2. Convert Temp Layer - Line

To get line features from the temp layers into a polygon within their destination layer (i.e. activity, infestation or operational area), they must be buffered and duplicated into the correct layer.

- Navigate to your purple temp layer lines in Data Editor. If you are not already at the temp lines do this by:
  - Switch on visibility of the temp layers: Layers > Temp Lines > Check the tick box
- Select your temp feature
  - Ensure that only the desired temp line features are selected (as per Section 7.3)
- Click on 'Data Editor' (top bar) > Buffer > enter how many meters the buffer should be
  - For control activity buffers, the following values should be considered, noting that these are only a guide for buffer distance. The buffer distance could change depending on the visibility and the terrain, and be representative of 'if there is a tree within the area, the field worker would have controlled it'.

Control Technique	Buffer Distance (m)
Boom Spray	10
Ground Based	20
Aerial Basal Barking (ABBA)	50-100

  - For survey activities, it is recommended to buffer at 20m for ground-based and 50-100m for aerial-based.

- Click the arrow button 
    - A buffer will appear in green around the line (please note that if your line file is large/complex this may take a while to process)
- Data Editor (top bar) --> choose the layer for the feature to join --> Duplicate --> Fill in the features properties
    - It is important to use accurate values for these fields when entering actual data. This enables precise calculations for reporting and analysis over time.
- Click Save
- The polygon in the WCIS layer with attributes will now be visible (you may need to switch off the temp layer to see this)
- If your line file contained any 'excess' line segments such as transport to/from the control site (i.e. transport where control did not take place) those parts of the polygons can be removed. Use can use the edit tool 'subtract' (see Section 12.3.3) to do this.

Note: When entering a control activity that utilised chemicals, the chemicals used should be recorded as outlined in Section 11 - Recording Chemicals.

10.1.3. Convert Temp Layer - Point

To get point features from the temp layers into a polygon their destination layer (i.e. activity, infestation or operational area), they must be buffered and validated – given attributes. This process occurs in the Data Editor app.

There are two workflows that can be used to convert temp points into a polygon. You can either buffer the points by a certain amount (sometimes this will not load if the point file is too large), or you can draw a polygon by hand around them.

10.1.3.1. Buffering points

- Navigate to your purple temp layer points in Data Editor. If you are not already at the temp points do this by:
    - Switch on visibility of the temp layers: Layers --> Temp points --> Check the tick box
    - Select your temp points
    - Ensure that the only points you want to buffer are selected. Do this by navigating to the selection, deselecting all other features
- Data Editor (top bar) --> Buffer --> enter how many meters the buffer should be
- Click the arrow button 
    - A buffer will appear in green around the points (please note that if your points file is large/complex this may take a while to process)

- Data Editor (top bar) --> choose the layer for the feature to join --> Duplicate --> Fill in the features properties
    - It is important to use accurate values for these fields when entering actual data. This enables precise calculations for reporting and analysis over time.
- Click Save
- The polygon in the WCIS layer with attributes will now be visible (you may need to switch off the temp layer to see this)

Note: When entering a control activity that utilised chemicals, the chemicals used should be recorded as outlined in Section 12 - Recording Chemicals.

10.1.3.2. Drawing around points

- Navigate to your purple temp layer points in Data Editor. If you are not already at the temp points do this by:
    - Switch on visibility of the temp layers: Layers > Temp points > Check the tick box

- Data Editor (top bar) > choose the layer for the feature to join> Click Create
- Click to add vertices and draw a polygon around the cluster of points that represent one control activity.
- Double click to finish drawing
- Fill in the features Properties
    - It is important to use accurate values for these fields when entering data. This enables precise calculations for reporting and analysis over time.
- Click Save
- Polygon will now be visible

Note: When entering a control activity that utilised chemicals, the chemicals used should be recorded as outlined in Section 12 - Recording Chemicals.

11. Recording Chemicals

Each control activity that utilises chemical needs to record the chemical(s) used and in what quantities. This is so we can see the effectiveness of a control technique and a particular brew used for it which will help improve operations. A control polygon that has a technique that uses chemical(s) will not be able to be approved in the QA process until chemical details are added.

11.1. At Control Polygon Creation

- After filling in all of the properties that appear on the 'Data Editor' panel when creating a control polygon, click on the Related Table button at the top of the panel 
- Click on the plus sign in the Chemical section to add chemical used in the control activity. Fill in the fields and click save
- Click the back button to go back to the chemicals added list
- Repeat this step as many times as required to record all chemicals used in the control activity

11.2. On Previously Created Control Polygon

- Navigate to the target control activity polygon which utilized chemical
- Select the polygon using the select tool (as per Section 7.3)
- Click on the Properties Editor button in the top left panel 
- Click on the Related Table button 
- Click on the plus sign in the Chemical section to add chemical used in the control activity. Fill in the fields and click save
- Click the back button to go back to the chemicals added list
- Repeat this step as many times as required to record all chemicals used in the control activity

12. Update Data

Over time, data needs to be updated in the system for various reasons. Infestations should be updated as density, extent or species change. Operational areas or activities can be updated too as areas of work for the financial year may change.

12.1. Updating Infestations

For Greater Accuracy

Where an infestation was originally drawn to a low level of data quality (e.g. really high level and large scale), and we now have a better understanding of the extent of the infestation, the shape can be updated. This may involve reshaping the boundaries of the infestation, splitting the infestation into multiple infestations, cutting holes in the infestation, creating new infestations for different species, and so on. Be sure to also carefully update the attributes of each infestation to accurately reflect their true nature.

For tools to update the shape of an infestation, see Section 12.3.4 – Reshape Polygon. To update the attributes of an infestation, follow the steps found in Section 12.2 – Update Attributes.

After Control

After control takes place, the extent and/or density of the infestation will change. The shape/extent of the polygon should remain the same, and only the attributes (tree count or overall percentage cover) should be changed. When the area no longer has an infestation present, this will be represented in the infestation layer by marking an area as clear.

When an infestation's density does not consistently decrease across its area, the polygon should be split (Section 12.3.1 – Split Polygon) and attributes updated for each polygon. To update the attributes of an infestation, follow the steps found in Section 12.2 – Update Attributes.

Due to Expanded Extent

Where an infestation has now spread beyond its original extent the boundaries may be changed if the spread has a homogenous nature to the original extent. This can be done using the reshape function to move the polygon's vertices to a new location. See Section 12.1.4 – Reshape Polygon for tools to expand the infestation extent. If density is recorded in tree count, make sure you update the density values after expanding the extent.

However, if the spread is not of a homogenous nature to the original extent (e.g. low density saplings, compared to the original large dense infestation) then a new infestation should be created to represent the spread. To do this, refer to Section 9.1 – Draw a Polygon.

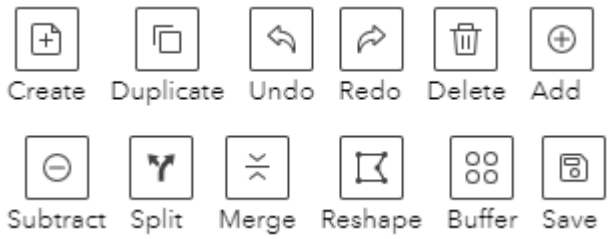
12.2. Update Attributes

To update attributes of a polygon, go through the following steps. Note that all old attributes are saved for later reference.

- Select the polygon (as per Section 7.3)
- Open 'Data Editor' (top panel)
- Change attributes as required by either typing or selecting a value from the drop-down list.
- Click Save

12.3. Update Shape

The tools in this image are available to use on polygons in WCIS to change their shape. The function for each tool is:



- Duplicate: Creates another polygon with the same shape
- Undo: Reverses an action that has just been done
- Redo: Remakes an action that has just been undone
- Delete: Deletes selected features
- Add: Enables area to be added to a polygon, either directly joining the existing polygon or with spatial separation between the two
- Subtract: Removes an area of the polygon
- Merge: Joins two polygons of the same type together
- Split: Divides the polygon in two based on where the split is drawn
- Reshape: Enables repositioning of polygon vertices to alter it's shape
- Buffer: Creates a buffer around the specified polygon at a designated distance (m)
- Save: Saves edits

12.3.1. Split Polygon

This tool is useful for updating an infestation as it changes density over time.

- Select Polygon to split
- Click on the Split tool

- Click to create vertices that cut the polygon where you want to create the split, then double click to finish
- Save
    - The attributes for the polygon(s) remain the same as they were when the polygon was first created. You will have to change the attributes of one of the polygons to reflect the differences/change in data.
- For the polygon that requires attribute changes:
    - Select the polygon (as per Section 7.3)
    - View the Properties for that polygon by clicking on the 'properties editor' button in the top panel
    - Change the values for attributes that require changing e.g. 'Name', 'Budgeted Cost' or 'Overall Percentage Cover' will need changing
    - Click Save
    - If editing control polygons, make sure the associated chemicals for each polygon are updated outlined in Section 11 - Recording Chemicals.

12.3.2. Add to Polygon

This can be used to add additional area to an existing polygon, or fill in holes

- Select the polygon (as per Section 7.3)
- Open 'Data Editor' (top panel)
- Click on the Add tool
- Click on the map to create vertices of the addition that you want to make
- Double click to finish
- Click Save

12.3.3. Subtract from Polgon

This can be used to cut holes or chunks from polygons

- Select the polygon (as per Section 7.3)
- Open 'Data Editor' (top panel)
- Click on the Subtract tool
- Click on the map to create vertices of the area to be subtracted
- Double click to finish
- Click Save

12.3.4. Reshape Polygon

This is ideal for small changes when updating the shape of a polygon.

- Select the polygon (as per Section 7.3)
- Open 'Data Editor' (top panel)
- Click on the Reshape tool

    - Vertices will appear on the polygon's edge as circles
- Move vertices to reshape polygon as required
- Once complete, click outside of the shape and click save

12.3.5. Buffer Polygon

- Select the polygon (as per Section 7.3)
- Open 'Data Editor' (top panel)
- Click on the Buffer tool
- Enter buffer amount in meters (this can also be a negative amount) in the pop up bar below the Buffer tool
- Click Apply Buffer 
- Click Save

12.3.6. Merge Polygons

This can be used to add additional area to an existing polygon, or fill in holes.

- Select the two polygons that you wish to merge (as per Section 7.3)
- Open 'Data Editor' (top panel)
- Click on the Merge tool
- The red outlines of both of the polygons on the map will be merged
- Click Save

13. QA and Monthly Reporting

There is functionality within WCIS to QA each activity polygon, confirming that all of the attributes of the shape are accurate. This provides greater assurance of correct and complete data to the National Programme team. It is the job of the Fund Manager (or nominated Management Unit Manager) to complete QA checks. If you need to change the person who is responsible for this, please contact the WCIS admin team.

The interface for this is located within the Data Editor app in the 'Progress Reporting' tab. If you cannot see any QA records in this tab and you think you should be able to, please contact the WCIS admin team - adminWCIS@linz.govt.nz

13.1. Completing QA

- Open the **Data Editor App**
- Click on the 'Progress Reporting' button on the top left-hand panel
- A panel will open. You can drag this out to make it bigger by clicking and dragging th bottom right corner of the tab
- All new and unapproved polygons for within your management unit(s) will appear in a list under the 'Activity QA' title.
- For each polygon:
    - Click on the zoom button  and the map will highlight and zoom to the polygon. If you have extended the QA panel, it may cover the polygon.
    - Click on the 'Properties Editor' button (top panel) to view the properties for the polygon
    - Check that all the properties are correct and that the extent of the polygon is also correct. You can make any changes to the properties or the polygon shape at this stage.

Please note: Activity polygons with control types that use chemical will not be able to be approved until there are chemical details listed against them.

- If you are satisfied with the quality of the polygon, press the 'Progress reporting' button on the top panel to go back to the QA list. The polygon will be highlighted in the list. You can then press the approve button.
    - The polygon will then disappear from your QA list

NOTE: if the polygon has incorrect properties that you cannot correct yourself, you will need to leave it in the list and get the person who did the data entry to correct it before it can be approved.

14. Health and Safety

All health and safety incidents (including near misses) must now be logged through the WCIS Health and Safety hub. Health and safety incidents across the program are also available to be viewed (with sensitive information removed) on a dashboard map within the app. When a H&S incident is reported through the hub, the relevant fund manager and programme team members are notified.

A digital health and safety audit form is also available to use. It runs through the Survey123 app, with a dashboard within WCIS to view and update audits once submitted.

14.1. Reporting a Health and Safety Incident

Health and safety incidents must be logged in the WCIS H&S Hub within 24 hours of a Serious Incident or Notifiable Event occurring, or within 5 business days of a Near Miss or Incident occurring. If you are reporting a Notifiable Event, a copy of the HSMP must also be uploaded.

14.1.1. On the website

- Open the **WCIS Health & Safety Hub app**
- This will open to a survey form. If you already have a completed H&S report from another system/organisation:
    - Click 'Yes' on the first question
    - Attach all relevant documents and answer the from questions
    - Submit the form

  Note: Your H&S incident will not immediately appear in the H&S Reporting Dashboard, it will first need to be entered in manually by the programme team.

- If you don't have a completed H&S report from another system/organisation or are happy to enter all incident details:
    - Click 'No' on the first question
    - Attach all relevant documents and answer the from questions
    - Submit the form
    - Your incident will be visible immediate in the H&S Reporting Dashboard

14.1.2. On the Survey123 mobile app

- Download the ESRI Survey123 app from either the App Store (Apple iPhones) or Play Store (Android phones)
- Open the app and press sign in, or select the three lines in the top right corner, then press sign in.

- Press the cog icon in the top right and then select "Add Portal"
- Type in https://wildpines.linz.govt.nz/portal then press "Add Portal"
- Go back to the sign in page which will now say "Sign in to Wilding Conifer Information System (WCIS)' and sign in with your normal WCIS login (please note that this is case sensitive)
- Press "Download Surveys" and then press the cloud download icon next to "Health & Safety Reporting"
- Go back to the main menu and open the "Health & Safety Reporting" form. Press "Collect" at the bottom of the screen and fill out the form.

Please note: Document upload is unavailable on the mobile app. However, photos of documents can be submitted.

14.2. Viewing Health and Safety Incidents Across the Programme

- Open the WCIS Health & Safety Hub app.
- Click on the 'H&S Reporting Dashboard' tab at the top left
- The H&S Reporting Dashboard will you open. You can:
    - Click on incidents from the list on the left-hand side to highlight and pan to them on the map, and read the details in the panel on the right
    - Filter incidents by management unit, funding year or incident type by using the filters on the top right

14.3. Creating, Viewing and Editing H&S Audits

The WCIS H&S Audit Form may be used to complete health and safety audits in the field, using the Survey123 app. It can be used without an internet connection, but **the form must be downloaded prior to leaving wifi/data coverage.** Survey123 can be used on both mobile phones and tablets.

14.3.1. Downloading and setting up the Survey123 mobile app

- Download the ESRI Survey123 app from either the App Store (Apple iPhones) or Play Store (Android phones)
- Open the app and press sign in, or select the three lines in the top right corner, then press sign in.
- Press the cog icon in the top right and then select "Add Portal"
- Type in https://wildpines.linz.govt.nz/portal then press "Add Portal"
- Go back to the sign in page which will now say "Sign in to Wilding Conifer Information System (WCIS)' and sign in with your normal WCIS login (please note that this is case sensitive)

- Press "Download Surveys" and then press the cloud download icon next to 'WCIS 2 Health and Safety Audit Form'

Please note that this form has been updated to a new version. Ensure that this survey with the yellow picture is the one that you use. You can now delete the older version of the form.



- Go back to the main menu. The 'WCIS 2 Health and Safety Audit Form' will be there and ready to use.

14.3.2. Completing the Survey123 mobile form

- Click on the 'WCIS 2 Health and Safety Audit Form' in the main menu to open it
- Press 'Collect' at the bottom of the screen to open a new form
- Enter audit details in the first set of questions. All questions with a red asterisk must be completed.

  Please note: The site location map will not load if you are out of data coverage, but it will load co-ordinates if location services are turned on, on your device. You can also update this location when you get back into service (and before you submit) if required.

- Complete the blue and grey sections of the form that are relevant to the audit that you are filling out. Each question within a section can be answered with the yes, no or N/A. Comments can then be added to each question. Photos can be added to the end of each section.
- Add any actions to the audit in the yellow section at the end of the form.
- Once completed, submit the survey using the tick button in the bottom right. You can choose to submit the survey immediately or save it in your outbox and make further edits before submitting.

14.3.3. Viewing and Editing Submitted H&S Audits in WCIS

- Open the **WCIS Health & Safety Hub** app from the WCIS home page
- Click on the 'H&S Audit Dashboard' tab
- The dashboard will show submitted H&S Audits as points on the map and in a list in the left hand panel, with newest submissions at the top. The panel next to it shows all other audits

that have been uploaded as documents, without using the survey123 app.

Please note: Only MPI team members can see all audits. All other users can only see audits created/submitted by them. If you need copies of audits that you cannot access, please contact adminWCIS@linz.govt.nz.

- Click on and audit in the list in the left panel and the location will flash on the map, and the details will appear in the right panel.
- You can edit any parts of the form if required. Make your changes and then scroll to the bottom of the form and press 'Submit' to save changes.
- You can filter the whole dashboard by region, MU or date using the filters at the top.

15. Report an Issue

To report an issue with the Wilding Conifer Information System, please screenshot the issue and send it along with further details to adminWCIS@linz.govt.nz .