



IAP Reference Guide

Part III - Using the IAP Program: Map Display



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Table of Contents – Part III

| | |
|--|-----------|
| Module 3.1: Understanding the IAP Program - Map Display | 3 |
| Welcome to Part III | 4 |
| Who is this Guide For? | 4 |
| How is this Guide Structured? | 4 |
| What is the Purpose of the IAP Program – Map Display? | 5 |
| How is the IAP Program – Map Display Accessed? | 6 |
| What is the Recommended Pre-requisite Training? | 6 |
| Tips for Web Based Applications | 7 |
| Module 3.2: Understanding the Spatial Data Available | 8 |
| Where Does the Data Come From? | 9 |
| What Type of Data is Available? | 10 |
| Module 3.3: Map Display Basics | 12 |
| Understanding the Main Display | 13 |
| Setting the Scale | 17 |
| Using Layers | 18 |
| Viewing the Legend | 21 |
| Module 3.4: Finding IAP Data | 22 |
| Step 1: Navigating to an Area of Interest | 23 |
| Step 2: Selecting a Layer | 23 |
| Step 3: Finding out More | 26 |
| Module 3.5: Wrap Up Part III | 35 |
| Summary | 36 |
| Next Steps | 36 |

IAP Reference Guide - Part III

Module 3.1: Understanding the IAP Program - Map Display

In this module, you will learn:

- Who this guide is for;
- How this guide is structured;
- What the purpose of the IAP Program – Map Display is;
- How the IAP Program – Map Display is accessed;
- What the recommended pre-requisite training is; and,
- Useful tips for using web based applications.

Welcome to Part III

Welcome to Part III of the IAP Reference Guide. In this part of the guide, you will learn specifically about the IAP Program – Map Display. Recall that there are four parts to this guide:

- Part I: Understanding the Business
- Part II: Using the IAP Program – Data Entry
- Part III: Using the IAP Program – Map Display
- Part IV: Appendices

If you have not examined Part I or II of the guide, you may find it helpful to do so now.

Who is this Guide For?

Part III is intended for individuals who are interested in examining the spatial data relevant to invasive plant management in BC. Spatial data is data displayed in a geographic context through the use of points, lines, and areas (polygons) on a map. Attribute data consists of textual and numeric data.



If you are interested in the “attribute” data which relates to invasive plants in BC, you should refer to Part II of this guide. While some attribute data is shown in the IAP Program – Map Display, the more comprehensive set of data is shown through the IAP Program.

IAP Program – Data Entry = Attribute Data
IAP Program – Map Display = Spatial Data

How is this Guide Structured?

This guide is structured to be a useful “on-the-job” resource. Modules, in Part I, of the guide can be removed for field use if required. This part (Part III) is not intended to include details on the general management of invasive plants in BC. Rather, it’s intended to explain how to effectively use the IAP Program – Map Display.

Module 3.1 – Understanding the IAP Program – Map Display

| Guide Structure | |
|--|---|
| Part I: Understanding the Business | <p>This part of the guide is useful for learners requiring information about the business processes and tasks performed within the IAP Program. This part focuses on:</p> <ul style="list-style-type: none"> • Program overview and intent • Preventative measures • Treatment guidelines • Analysis of sites and setting of priority • Inventory and monitoring • Understanding treatment methods and data collection <p>The key intention of this part is to describe the business of invasive plant management and the accompanying field activities that take place. Field activities and the subsequent data they generate need to be consistent in order to have consistent, comparable data in the IAP Program – Data Entry & Map Display.</p> |
| Part II: Using the IAP Program – Data Entry | <p>The primary focus of this part of the guide is the use of the IAP Program – Data Entry. In this part, explicit instructions are provided on how to use the program to enter, query, and report on attribute data.</p> <p>The IAP Program – Data Entry functions are to:</p> <ul style="list-style-type: none"> • Co-ordinate/share information generated by various agencies and non-government organizations involved in invasive plant management. • Receive, store, supply, and co-ordinate data for invasive plant management. |
| Part III: Using the IAP Program - Map Display | <p>The objective of this part of the guide is to explain how to use the IAP Program - Map Display. The focus is on:</p> <ul style="list-style-type: none"> • Access – available to the general public through the internet. • Explanation of data that is displayed. • Explanation of the program's features. • Step-by-step instructions for obtaining different data/views & queries. |
| Part IV: Appendices | <p>The appendices include:</p> <ul style="list-style-type: none"> • Useful code tables and forms. • Additional reference material. |

What is the Purpose of the IAP Program – Map Display?

The IAP Program – Map Display is a web-based application used to store all spatial invasive plant data in BC. It has been designed to display maps indicating the following:

- Where invasive plant sites exist in BC
- Where activities have occurred on invasive plant sites in BC including:
 - Biological Treatments;
 - Chemical Treatments;
 - Mechanical Treatments;
 - Biological Monitoring; and,
 - Biological Dispersals.

Module 3.1 – Understanding the IAP Program – Map Display

How is the IAP Program – Map Display Accessed?

The Map Display can be accessed by anyone who has access to the Internet. There is no username or password required. There is a link to the map display from the Ministry of Forests and Range, **Forest Practices Branch – Invasive Alien Plants Website** (<http://www.for.gov.bc.ca/hfp/invasive/intro.htm>). The IAP Program – Map Display is also accessible via the “Map” link within the IAP Program – Data Entry.



When you navigate from the IAP Program – Data Entry (attribute data) to the IAP Program – Map Display (spatial data), the site you are currently on in the IAP Program – Data Entry will be highlighted as a yellow dot/polygon on the IAP Program – Map Display. The map will be sized to contain the site polygon buffered by 50 meters.

If you are zoomed in too close on the site, the polygon may fill your entire screen. Therefore, it is recommended that you zoom out to a comfortable scale where you are able to orient yourself (i.e. where a road, city, or other landmark is displayed on the map).



What about Legacy Data?

Legacy data is data that existed prior to the development of the IAP Program – Data Entry & Map Display. It has been imported into both applications.

Legacy sites that did not have valid UTM or spatial data will not be available in the Map Display application. In this case, instead of zooming to the site, the Map Display application will open to the initial provincial extent view (once the Map link is clicked in the IAP Program – Data Entry).

What is the Recommended Pre-requisite Training?

The IAP Program – Map Display has been developed using the **Internet Mapping Framework** standard adhered to by the Ministry of Forests and Range. Prior to continuing your work with this guide, it is highly recommended that you complete the **Internet Mapping Framework Tutorial** (<http://srmwww.gov.bc.ca/imf/HelpSystem/>). This will provide you with some essential background information on the “generic” tools & functions of many of the spatial applications within the Ministry of Forests and Range.



Once you have completed the tutorial, you should return to this guide. This guide provides you with training on the “customized” functions & features of the IAP Program – Map Display. Without completing both the tutorial and this guide, you may find it difficult to find the data you are looking for.

Tips for Web Based Applications

The IAP Program – Map Display is a computer application that is available via the Internet. The system resides on an Internet server.

The web is a convenient way of making the system available to all users throughout the province of British Columbia. It also allows updates of the system to be simultaneously available to all users. There is no “software” required to be loaded onto individual computers. There are a few things you should keep in mind when you are using the Map Display:

| Function | Result |
|-------------------------------------|--|
| Back Arrow and Forward Arrow | The Back and Forward arrows that you see on your web browser navigation bar are not compatible with the Map Display and should not be used. Instead, use the tools within the Map Display to find your way around. |
| Enter Key | You should use the buttons & tools available within the Map Display to navigate around the maps. The Enter Key (on your keyboard) should not be used for any reason. |
| Other Web Sites | It is best not to try to open other web sites from documents or email while in the Map Display. The site may open in the same window as the Map Display. |



- Do **not** use the Back & Forward arrows in your web browser (for example, Internet Explorer). The browser will not save the data and the Map Display may behave unusually.
- Use the tools and buttons to navigate around the maps, **not** the Enter key.
- Monitor sizes may differ from computer to computer. Therefore, if you have trouble seeing the maps, it may be necessary to select the “Full Screen” option.
 - If you are using Internet Explorer, simply hit the F11 key to view your browser in “Full Screen” mode. Hit F11 again to return to “Normal” mode.

IAP Reference Guide - Part III

Module 3.2: Understanding the Spatial Data Available

In this module, you will learn:

- Where the data comes from; and,
- What type of data is available.

Where Does the Data Come From?

The data in the IAP Program – Map Display is created when an entry is made in the IAP Program – Data Entry. Records entered into this application contain a **UTM** and a **Site Number**.

- The **UTM** generates a geographic point on the map (a very tiny polygon). The technology to automatically generate this polygon into Map Display within 24 hours of data entry will be implemented in the winter of 2006.
- The **Site Number** is used to tie the spatial data (geographic tiny polygon) back to the attribute data (UTM in the database).

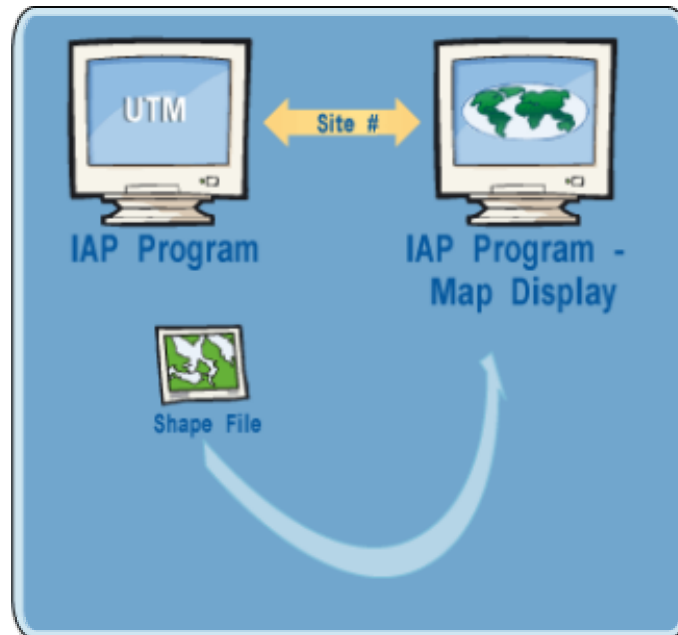
Later, if a shape file that has been digitized following the Standards and supplied to MoFR (as outlined in the GIS Data Capture Specifications document found at:

- <http://www.for.gov.bc.ca/hfp/invasive/intro.htm>)

will be loaded into the IAP – Map Display. The geographic tiny polygon, originally generated when attribute data was entered into the IAP Program – Data Entry, is replaced with the new digitized polygon.



A **shape file** is a layer of information being added to the spatial database.



Can I link back to the IAP Program – Data Entry?

Once in the IAP Program – Map Display, you can link back to the IAP Program – Data Entry by selecting a specific site and clicking the “IAPP Link: More Info”.

However, you must have appropriate access to the IAP Program – Data Entry including a valid username and password. To learn more about the IAP Program – Data Entry please refer to Part II of this guide.

What Type of Data is Available?

The following table outlines the type of data available in the IAP Program – Map Display.

| Category | Function/Feature |
|------------------------------|---|
| Invasive Alien Plants | <ul style="list-style-type: none"> All invasive plant sites identified in the IAP Program – Data Entry as existing in BC. Labels next to each site. Labels next to each invasive plant. This is useful for an “at a glance” picture of the distribution of invasive plants in BC. Ability to highlight sites that contain selected invasive plants. |
| Mechanical Treatments | <ul style="list-style-type: none"> Ability to highlight all sites that have had a mechanical treatment applied. |
| Chemical Treatments | <ul style="list-style-type: none"> Ability to highlight all sites that have had a chemical treatment applied. Ability to query and highlight sites with a specific invasive plant(s) that have been treated with a specified herbicide. Ability to query and highlight sites with a specific invasive plant(s) that have not been treated with a specified herbicide. |
| Biological Treatments | <ul style="list-style-type: none"> Ability to highlight all sites that have had a biological treatment applied. Ability to query and highlight sites with a specific invasive plant(s) that have been treated with one or more specified biological agent(s). Ability to query and highlight sites with a specific invasive plant(s) that have not been treated with one or more specified biological agent(s). |
| Biological Monitoring | <ul style="list-style-type: none"> Ability to highlight all sites that have been monitored for biological agents. |
| Biological Dispersal | <ul style="list-style-type: none"> Ability to highlight all sites that have been identified as having biological dispersals. |
| Containment Lines | <ul style="list-style-type: none"> Ability to display containment lines for a specified invasive plant species. |

Understanding Protected Data

Some of the data in the map display has specific restrictions applied to it. This is because it is confidential or sensitive data. This data consists of specific biological agent information. When a site is protected, it will appear “clouded” on the map. So, rather than appearing as a distinct polygon or small dot, it will appear as a larger circle. In addition, the following information will not display:

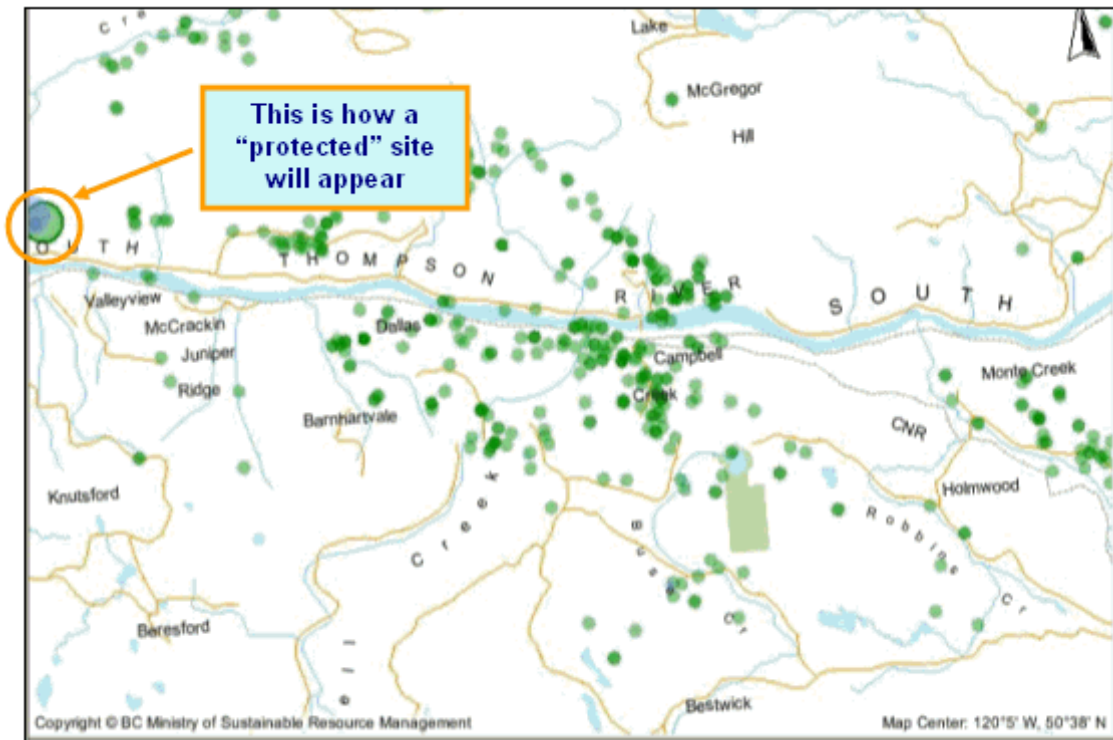
- UTM
- Slope
- Elevation
- Aspect
- Protected Agent

Module 3.2 – Understanding the Spatial Data Available



Protected sites are intentionally displayed (even though they appear clouded) to ensure that you recognize them and treat them with caution. For example, if you are constructing a road and a “clouded” site is within the construction area, you should contact the appropriate Ministry of Forests and Range District Office for additional information.

The following is a sample of how a protected site will display in the Map Display:



Understanding Legacy Data

Legacy data is data that existed prior to the development of the IAP Program – Data Entry or IAP Program – Map Display. It has been imported into both applications. However, in the past, some of the data that is collected today was not recorded or was missing. Default data has been added to the applications. For example, if a record did not have a date, the IAP Program – Data Entry and IAP Program - Map Display both assign it a date of 1900-01-01. If you come across data that doesn't seem quite right, this may be why.



Legacy sites that did not have valid UTM or spatial data will not be available in the Map Display application. In this case, instead of zooming to the site, the Map Display application will open to the initial provincial extent view (once the Map link is clicked in the IAP Program – Data Entry).

IAP Reference Guide - Part III

Module 3.3: Map Display Basics

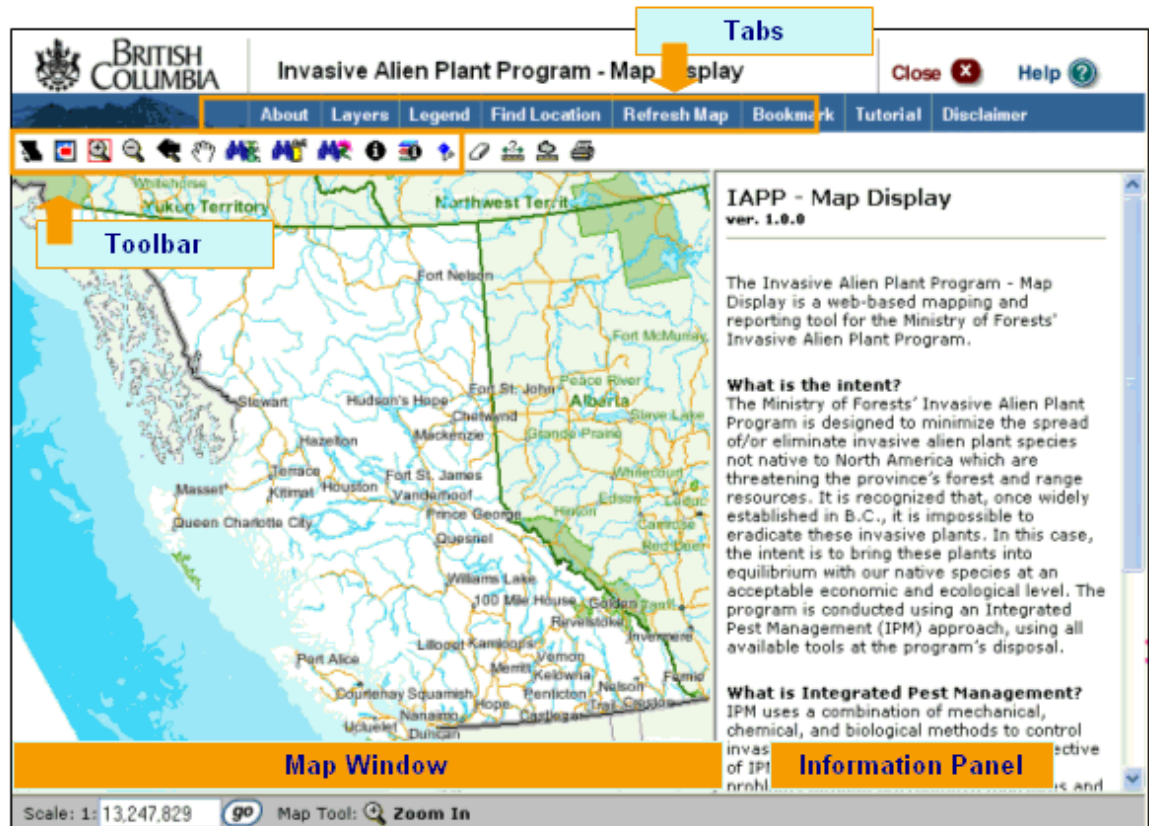
In this module, you will learn how to:

- Understand the main display;
- Set the scale;
- Use layers effectively; and,
- View the legend.

Understanding the Main Display







The Map Window












The Map Window displays the map at the scale identified. When you first logon to the application, you will notice that the application automatically defaults to a map of BC. If you have a small computer screen you can try pressing the F11 key on your keyboard. This will change Internet Explorer to an abbreviated menu mode allowing additional screen real estate to display the map. A sample Map Window is shown here:



The Tool Bar

The Tool Bar provides you with the tools you need to navigate your way around the map. The Internet Mapping Framework Tutorial provides a useful overview of these tools. Below is a description of each tool found in the Help for the application:

| About the Tool Bar | |
|--|---|
| Buttons initiate immediate action when you press them with the mouse. Clicking a tool sets a mode for the map cursor to perform some action when you click or drag the mouse on the map. The active tool is outlined in red, and its name and icon is displayed on the status bar under the map. | |
|  | <p>BC Extent (button): This button zooms you to the full extent of the Province of British Columbia.</p> |
|  | <p>Overview Map (button): When you click this button, a small overview map displays that shows the location of the main map window. Depending on the map extent, the overview map may show a rectangle or a pushpin to signify the location. The overview map can be used to stay oriented as you zoom in and out. If you change the map's extent, the overview map will automatically update. You can also change the extent of the map by clicking on the overview map.</p> |
|  | <p>Zoom In (tool): The Zoom In button allows you to window into your particular area on the map. You can do this in either of 2 ways. Using the mouse, "left click" on the Zoom In button and then:</p> <ul style="list-style-type: none"> • "left click" a point on the map you wish to be the centre of your selected area (one "click" zooms in approximately 2X, you can do this as many times as you want until you have the right extent defined), or • define a window by "left clicking" on a point and, keeping the mouse button depressed, "pull" the rectangle being formed until it covers the area of interest and release the mouse button. <p>If you have "windowed in" too far, use the Zoom Out button to "back out" (approximately 2X each "click") until the appropriate area has been defined.</p> |
|  | <p>Zoom Out (tool): Clicking the map with the Zoom Out tool active causes the map to "back out" so you can see approximately 2 times more each "click". The map will be centered at the point clicked.</p> |
|  | <p>Zoom Previous (button): When you press this button, the map extent changes to the extent that it was before the last extent change.</p> |
|  | <p>Pan (tool): The Pan tool is used to move the area shown in the map window to the left, right, up or down. This is accomplished in two ways:</p> <ul style="list-style-type: none"> • Simply click on the map and the map will be centered at the location you click. This is the preferred method of using this tool. • Drag the map by "left clicking" the mouse cursor, keeping the left button depressed, dragging the map window until the adjusted area of interest is displayed. When the mouse button is released, the map will redraw. |

| About the Tool Bar | |
|---|---|
|  | Find Biological Treatments (button): Finds the location of Biological Agents. |
|  | Find Chemical Treatments (button): Finds the location of Chemical Treatments. |
|  | Find Invasive Plants (button): Finds the sites that contain specific species. |
|  | Identify (tool): Displays tabular data about a feature (from a layer you choose from the layer list) that you click on the map. |
|  | Drill Down Identify (tool): Displays tabular data about all the features you can see on the map at the point you click. |
|  | Location (tool): Display the location coordinates at the point you click on the map. |
|  | Clear (button): Clears the selected features or markup graphics that you have placed on the map. If there is only one layer with selected features or only the user markup layer, the selection or user graphics will be immediately removed. If there are multiple things to be cleared, a list will be shown to allow you to choose what you want to clear. |
|  | Measure (tool): The Measure tool is used to calculate distances between points that you click on the map. The first time you click the map, the location of the point that you clicked will be displayed in the information area at the bottom of the screen. When you click additional points, their locations and the distance between the points will also be displayed. If you want to start over, either click on the tool again on the toolbar, or click the "Clear Points" button in the information window. |
|  | Measure Area (tool): The Measure Area tool is used to calculate the area of the polygon that you draw by clicking on the map. As you click the map, a polygon will be drawn and the area of the polygon will be displayed in the information area of the screen. If you want to start over, either click on the tool again on the toolbar, or click the "Clear Points" button in the information window. |
|  | Print (button): This button opens a form (in the information panel) for you to specify: <ul style="list-style-type: none"> • a title for the map; • the paper size you wish the map to be printed on. Choose 8.5" X 11.0" unless you have a larger format printer; and, • a scale for your printed map. If you like how your map currently appears on the screen, then select "Current Scale" for the output. If you want the map to be printed at a precise scale, select the preset scale from the pull-down menu. <p>There is also a "Map Notes" section available. You should use this section to add any written details about the map that you wish to be displayed below the map once it is printed.</p> <p>When you are ready to generate the map, click the OK Button. Be patient while the map generates. This process could take anywhere from 10 seconds to a minute depending on the complexity of the map and the speed of your internet connection.</p> <p>Important Note: You must have Adobe Acrobat Reader installed on your computer in order to print maps.</p> |
|  | IAP Map Label Legend: This button allows you to print the "Invasive Plant Map Label Legend" which is a handy reference of labels used to identify Invasive Plants in this spatial application. When you click this icon, the legend will open in PDF format. You must have Acrobat Reader on your computer for this file to open. For a sample of this legend, see Part IV of this guide. |

The Tabs

The Tabs provide you with additional functionality to assist you in gathering the spatial data you need. The Internet Mapping Framework Tutorial provides a useful overview of these tabs. Below is a description of each tab found in the Help for the application:

| About the Tabs | |
|--|---|
| Tabs initiate immediate action when you press them with the mouse. | |
| About | Display the introduction page. |
| Layers | Set which layers display, and choose an identify layer. |
| Legend | Display the map legend. |
| Find Location | Search for a location. |
| Refresh Map | Refresh the map. |
| Bookmark | Displays and Zooms to the Active Bookmarks. Bookmarks are maps which you want to save for future reference. This makes it easy for you to return to the same map on another occasion. |
| Tutorial | Open the tutorial page. |
| Disclaimer | Important information about this site. |

The Information Panel

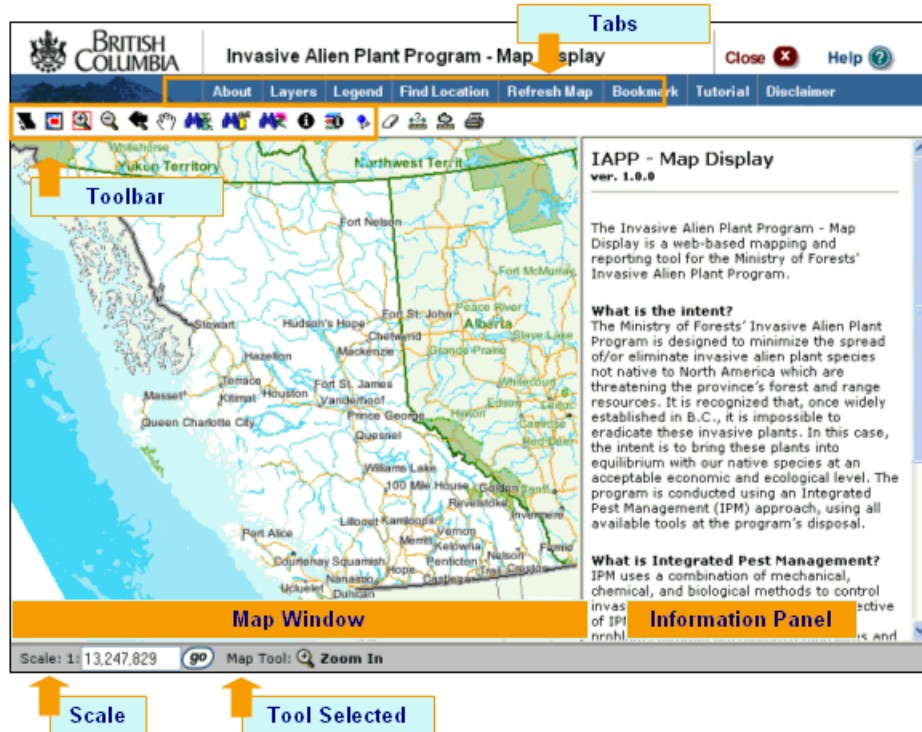
This panel appears to the right of the Map Window. It displays a number of items depending on the function selected. It displays:

- Layers;
- Legend;
- Query functions; and,
- Attribute data.

The Bottom Bar

This bar identifies the:

- scale that the map is currently displayed at;
- the tool currently selected;
- the geographic coordinates (latitude/longitude) of the cursor; and,
- the UTM coordinates and BC Albers coordinates of the cursor.



Setting the Scale

Setting the scale of the map is one of the most important tasks to perform in order to use the tool effectively. When you first log onto the application, you will notice that the scale is set at around 1:12,000,000. At this scale, you will not be able to effectively use the tool. In order to see any invasive plant data, you must be at a scale of 1:5,000,000 or less. If you are linking to the Map Display from the IAP Program – Data Entry, the scale will be automatically set dependant upon the size of the site polygon that is being zoomed to (for example, 1:1,000).



You will need to use the Map Display a few times to determine which scale is most effective for you. Factors such as screen size, resolution, and the size of the window (that a user has set to view the map) will change the display. We suggest you first try to set the scale at 1:250,000 to see if that scale is appropriate for you. The map scale may be adjusted by entering a new scale in this box and clicking the **Go** Button.

At a scale that is not sufficiently magnified, you may be unable to clearly see items such as invasive plant polygons, invasive plant labels, or geographic details.

Next in this section, you will learn about layers. Layers often require you to be at a specific scale before the application will allow you to turn them on.

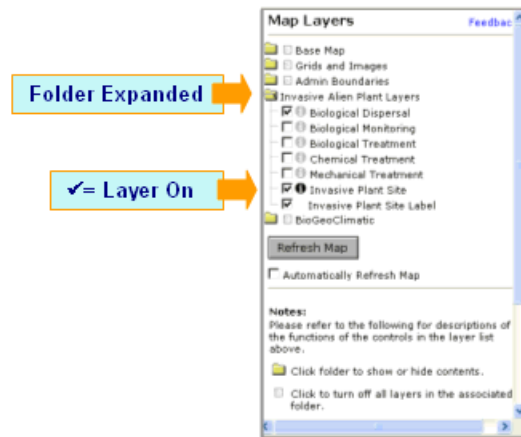
Using Layers

Spatial data is made up of various layers. A layer contains all objects of a certain type (for example, all streams of a particular size). These layers can be turned on or off, allowing you to increase or decrease the level of detail you are able to see on a map.

The layer concept is derived from past days when different classes of objects were drawn on transparent Mylar sheets. These sheets were used in various combinations to analyze the information about a specific area.

Accessing the Layers

Click the “Layers” tab on the top navigation bar to display the layer list in the information panel on the right side of the screen. Layers are grouped into folders. Click a folder to open it and display a list of the layers within that folder.



Turning Layers On or Off

Each layer has a small check box to the left of the layer title which indicates whether the layer is on or off.

- A layer is **ON** if there is a check mark in this box. To turn the layer off, click the checkbox.
- A layer is **OFF** if the check box is empty. To turn the layer on, click the checkbox.



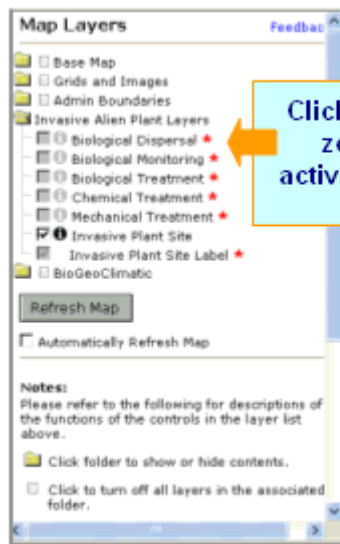
Always remember to click the **Refresh Map** Button in order for the layer change to take effect! You may also set the map to automatically refresh when you make a change to the selected layers. Simply check the “Automatically Refresh Map” box below the **Refresh Map** Button.

Layers & Scale Dependencies

Some layers are scale dependent. If you notice a red asterisk next to the layer, it means that layer's information cannot be viewed at the current scale. The objects contained in the layer are either too big or too small to be effectively displayed. To fix this issue, simply click the red asterisk and you will be zoomed to the appropriate scale.




If you want to examine the scale required to see a layer, before you activate the layer, simply roll your mouse over the red asterisk and the scale required to display that layer on will appear.



Working with the IAP Layers

In addition to the generic layers which you learned about during the “Internet Mapping Framework Tutorial”, the following IAP Layers exist.

| Layer | Turn this layer on to... |
|---------------------------|--|
| Invasive Plant Site | display all sites identified as containing invasive plants. |
| Site ID | display the ID that corresponds to each site. |
| Invasive Plant Site Label | display labels of the invasive plants found on each site. |
| |  <p>The Invasive Plant Site Label Layer works slightly differently than the other layers. This label is controllable (i.e. you can turn it on or off) between the scales of 1:250,000 and 1:10,000. However, if your magnification increases beyond 1:10,000 the layer is automatically set on and cannot be turned off.</p> |
| Mechanical Treatment | display all invasive plant sites that have had a mechanical treatment applied. |
| Chemical Treatment | display all invasive plant sites that have had a chemical treatment applied. |
| Biological Treatment | display all invasive plant sites that have had a biological treatment applied. |
| Biological Monitoring | display all invasive plant sites that biological monitoring activities have been conducted on. |
| Biological Dispersal | display all sites that have been recorded as having biological dispersal activities. |
| Containment Lines | display a shaded polygon that corresponds to the containment line layer you have selected. |



If you have too many layers turned on, the display will become difficult to understand and slow to load. Sometimes, less is more!

About the Containment Lines Layer

The following form is used to control the Containment Lines Layer. This layer control varies slightly from the other layers which use an on/off checkbox as their control. For the Containment Lines Layer, you must select the actual Invasive Plant Containment Line you wish to display by using the drop list.

Containment Line Layer Control

This tool will control the display of containment line layer. Containment line geometry exists for the invasive plant species that are listed.

Select an invasive plant species from the **Containment Line For** list and click **Refresh Map** to display the containment line layer for that invasive plant species.

Choose "-- Layer Off --" and click **Refresh Map** to turn off the Containment Lines layer.

Containment Line For

A shaded polygon corresponding to the containment line selected is displayed on the map. To learn more about Containment Lines visit **Part 1 (Module 1.4: Planning of IAP Programs)** of this guide.

Viewing the Legend

Just like a paper-based map, the electronic map display also has a legend. The legend identifies what the various symbols and colours on the map denote. For example, one shade of blue denotes a river/stream while another denotes a lake. Access the legend by clicking the “Legend” tab on the top menu bar.



IAP Reference Guide - Part III

Module 3.4: Finding IAP Data

In this module, you will learn how to find IAP Data by following these steps:

- Step 1: Navigating to an area of interest;
- Step 2: Selecting a layer; and,
- Step 3: Finding out more.

Step 1: Navigating to an Area of Interest

The first step in examining data is to navigate to the specific geographic area of interest to you. You can use the **zoom in**, **zoom out** and **pan** tools to locate an area.

The “**Find Location**” tab can also be used. This button offers a menu of options of locations/areas of the province. You can select an area that is near where you want to go. This menu also includes a “mapsheet/UTM Coordinate” option. If you know the specific mapsheet coordinates, you can enter these and you’ll be navigated to that location.

You can use the “**Bookmark**” tab to mark a site. This will allow you to easily return to that site the next time you are using the Map Display.



You may notice a “Barber Pole” image appears over top of the map when you request changes (i.e. refresh) to the map. This means the computer is thinking and is fetching the data you need. Be patient as this process may take up to a few minutes.

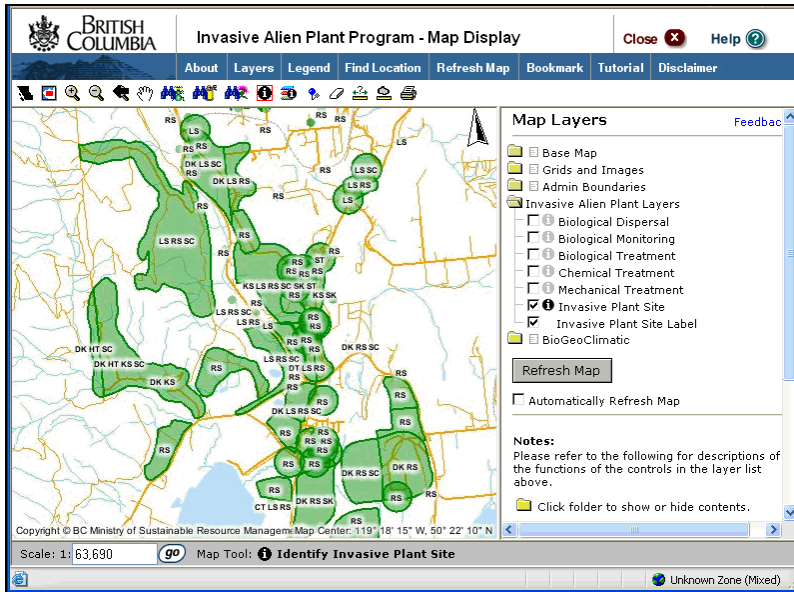
Step 2: Selecting a Layer

Next, you will want to select an appropriate layer(s) depending on what you would like to see. Recall that the various IAP layers available were discussed in the last module. Here, you will see screen prints of what some of these layers look like when activated.

Invasive Plant Site

The following screen print has both the **Invasive Plant Site** and **Invasive Plant Site Label** layers turned on. If you are viewing this guide in colour, take note of the following:

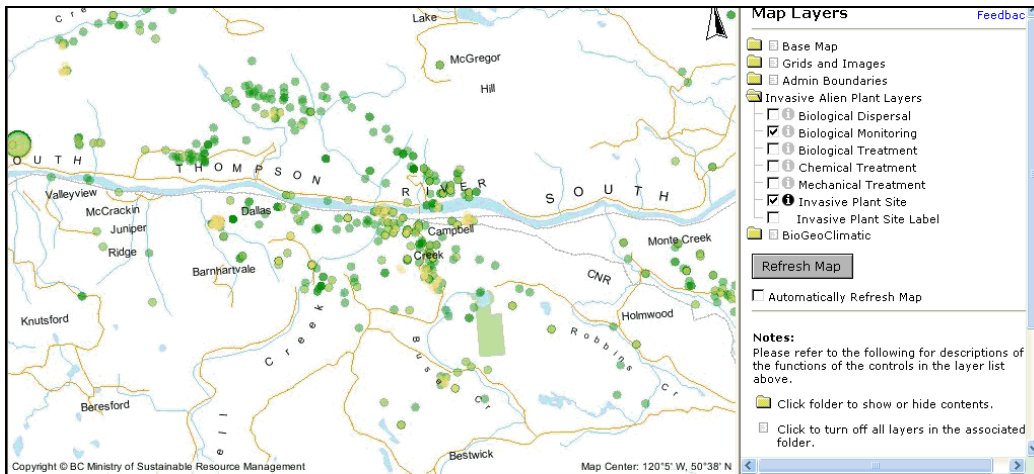
- The green areas represent site polygons that contain invasive plants.
- The two letter capitalized text represents the invasive plant species.
 - This is a two letter code for a plant species (often the common name abbreviated). Refer to Part IV of this guide for a code list.
 - If there are multiple invasive plant species on a given site, multiple labels will display.
 - The label layer automatically defaults on when the scale reaches 1:10 000 or any greater magnification. If you find the labels distracting, return to the layers function and turn off the **Invasive Plant Site Label** layer (unless the magnification is 1:10,000 or greater).



Biological Monitoring

The following screen print has both the **Invasive Plant Site** and **Biological Monitoring** layers turned on. If you are viewing this guide in colour, take note of the following:

- The green dots represent sites which contain invasive plants.
- The yellow dots represent sites that biological monitoring activities have been conducted upon.

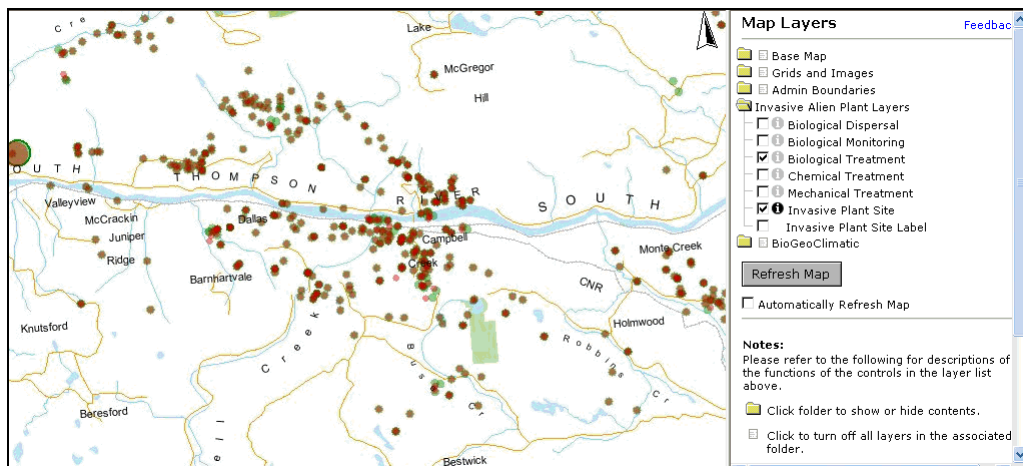


Sometimes the dots may appear a yellowish-green colour. This is because a yellow dot is appearing on top of a green dot. Remember, viewing layers is like viewing transparencies layered on top of one another.

Biological Treatment

The following screen print has both the **Invasive Plant Site** and **Biological Treatment** layers turned on. If you are viewing this guide in colour, take note of the following:

- The green dots represent sites which contain invasive plants.
- The burgundy dots represent sites that biological treatments have been conducted upon.



Additional IAP Layers

In addition to the layers discussed above, the following additional IAP specific layers are available:

- **Biological Dispersal** – show all invasive plant sites with biological dispersal records.
- **Chemical Treatment** – show all invasive plant sites that chemical treatments have been conducted upon.
- **Mechanical Treatment** – show all invasive plant sites that mechanical treatments have been conducted upon.

Step 3: Finding out More

Using Generic Tools





There are various tools you can use to help:

- Navigate your way around the map.
- Find out additional information about a site or area on the map.

Many of the tools were introduced to you in the “Internet Mapping Framework Tutorial”. If you have not already done so, ensure you complete the tutorial.

Using the Identify Tool

The identify tool (located in the Toolbar above the map) is extremely useful if you wish to learn additional information about a specific site. To use the identify tool, follow these steps:

| | |
|---|--|
|  | Navigate to the layer of interest and click the check box to turn it on. Now, activate the “identify icon” next to it by clicking on it. This will change the icon from gray to black. Remember to refresh the map. <ul style="list-style-type: none">• Note: The default layer that the Identify Icon is automatically active on is the Invasive Plant Site Layer. For example, if you don’t select a layer, but use the Identify Tool, you will be using it to find information pertaining to the Invasive Plant Site Layer. Data displayed will include plants and surveys for the site. |
|  | Select the Identify Tool from the tools section. |
|  | Click on the site (dot/polygon) which you would like to obtain additional information about. |
|  | Detailed attribute data is displayed in the information panel on the right side of the screen. |



Recall that the attribute data is stored in the IAP Program – Data Entry (for additional information on the IAP Program – Data Entry see Part II of this guide).

The following is the type of information you will see displayed in the right information panel when the **Invasive Plant Site Layer** is on and the **Identify Tool** is used to select a site:

- | | | |
|--------------------------|-------------------|--------------------------|
| • Invasive Plant Site ID | • Slope (deg) | • BEC Information |
| • Jurisdiction | • Aspect (deg) | • MAP Label |
| • Site Created Date | • Elevation (m) | • IAPP Link |
| • Site Area (ha) | • Mapsheet | • Invasive Plant Species |
| | • UTM Information | • Survey Information |



If no data is displaying, it may be because:

- You haven’t clicked on the exact spot required to display data. Try clicking again, or zooming in closer, and then clicking.
- There is no attribute data available for that location.

If some data fields are displaying, but other data fields are missing it is because:

- The fields are protected. For example, the following protected biological data will not display: UTM, Slope, Elevation, Aspect, and Protected Agent.
- There is no data for that particular field in the attribute application.

Identify Tool – Sample Invasive Plant Site

The following screen print displays the details for a specific invasive plant site. Notice the following:

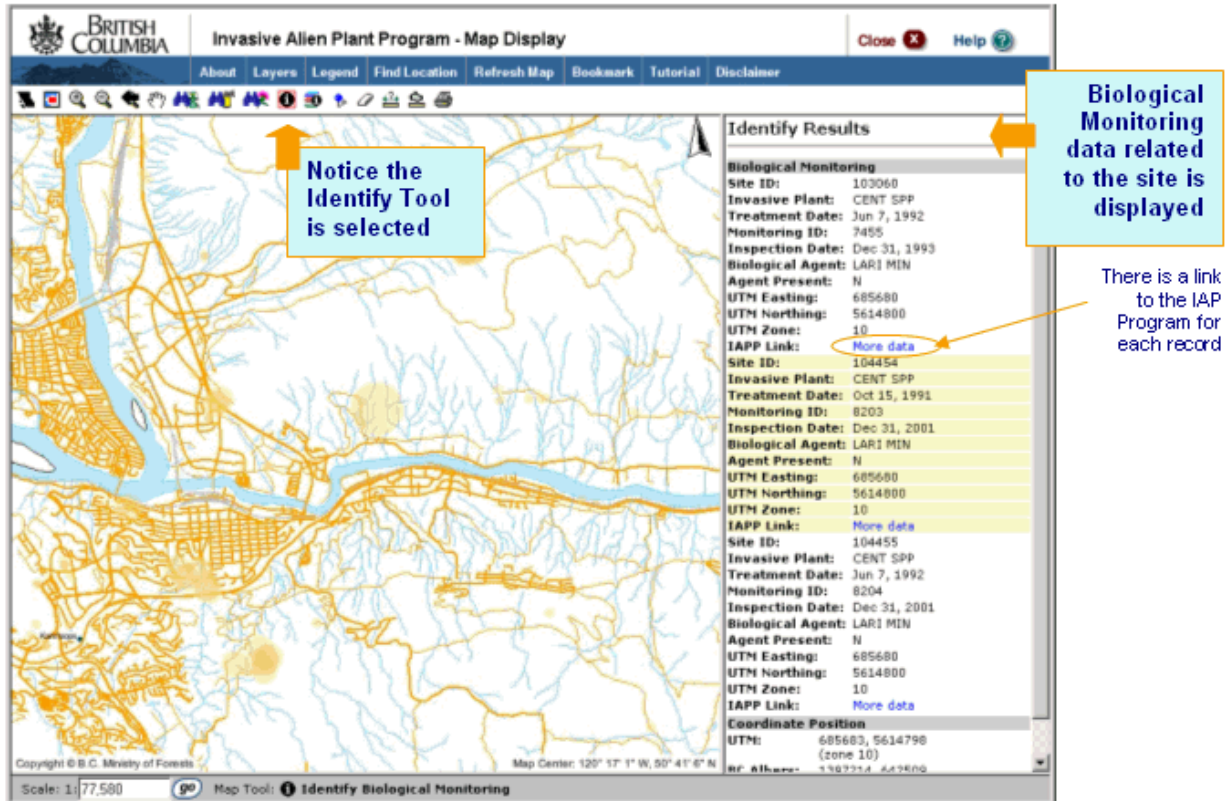
- The **Identify Tool** has been selected.
- The mouse was used to click on a specific point on the map.
- The first site the Map Display retrieved is displayed at the top of the information panel on the right. There are a few items to note in this panel:
 - **IAPP Link: More Data** - this is a hyperlink that leads to the specific site in the IAP Program – Data Entry (recall that the IAP Program – Data Entry is the application that stores the **attribute** data for invasive plants). Click this link to log onto that application.
 - **“+” and “-” Signs** – you may notice a **+ sign** or **- sign** beside some of the data. Clicking on a **+ sign** allows you to expand a category of data to show additional details. Notice that once this data is displayed, the **“+” sign** becomes a **“-” sign**. In the screen print below, the “Invasive Plant” category was expanded to show “Survey Date”. Next, the “Survey Date” category was expanded to show any survey details. **Note:** In the survey details you will notice a field labeled “found”. This field indicates whether or not the invasive plant was found on the last chronological survey for this site. If the invasive plant is found, this field will display “Found = Y” otherwise, it will display “Found = N”.
- An additional site was retrieved by the Map Display at the point clicked. This is displayed as a separate folder below the first site.
 - Click the folder to open it and examine the details.

The screenshot shows the 'Invasive Alien Plant Program - Map Display' interface. The map displays various site markers. A callout box points to the 'Identify Tool' icon in the toolbar, stating 'Notice the Identify Tool is selected'. Another callout box points to the 'More data' link in the 'IAPP Link' field of the site details panel, stating 'Attribute data about the site is displayed'. A third callout box points to the 'Invasive Plant' folder in the site details panel, stating 'Click this link to navigate to the IAP Program (attribute application)'. A fourth callout box points to the 'Invasive Plant Site ID 109019' entry, stating 'If there are multiple sites for the geographic location, these are listed in the order the IAP Program - Map Display finds them'.

| Invasive Plant Site | |
|--|---------------------------|
| Invasive Plant Site ID | 100415 |
| Jurisdiction: | Ministry of Forests |
| NDF District: | DKA |
| Site Created: | 1900-01-01 |
| Site Area (ha): | 0.0003 |
| Slope (deg): | 5 |
| Aspect (deg): | 180 |
| Elevation (m): | 600 |
| BEC Zone: | BG |
| BEC Subzone: | sh |
| BEC Site Series: | 02 |
| Mapsheet: | 0921120 |
| UTM Easting: | 703450 |
| UTM Northing: | 5612900 |
| UTM Zone: | 10 |
| Map Label: | LS |
| IAPP Link: | More data |
| <input type="checkbox"/> Invasive Plant: | EUPH ESU |
| <input type="checkbox"/> Survey Date: | 1900-01-01 |
| <input type="checkbox"/> Precise Survey: | N |
| <input type="checkbox"/> Found: | Y |
| <input type="checkbox"/> Density Code: | 3 |
| <input checked="" type="checkbox"/> Invasive Plant Site ID | 109019 |

Identify Tool – Sample Biological Monitoring

The following screen print displays the results when the Identify Tool is turned on for the Biological Monitoring layer.



Using the Customized Query Tools

You may find that selecting layers and using the generic toolset does not provide the specific data you are looking for. For example, you are able to see all invasive plants which have been treated with any biological agent in a given area, but what you really need to display is instances of knapweed being treated with *Larinus minutus* Gyll in a given area.

In this case, you will want to use the additional tools which are unique to the IAP – Map Display. These are easily recognizable as the three binocular icons. Using these icons allows you to perform queries on the spatial data and, therefore, changes the information displayed on the map to match your needs. These tools are:



Binocular Set #1 – Highlight Biological Treatment

- Click this icon to display the Biological Treatment query function in the information panel on the right section of the screen.



Binocular Set #2 – Highlight Chemical Treatment

- Click this icon to display the Chemical Treatment query function in the information panel on the right section of the screen.



Binocular Set #3 – Highlight Invasive Plant Species

- Click this icon to display the Invasive Plant Species query function in the information panel on the right section of the screen.



Remember, the tool you currently have selected, displays with a red box around it in the top toolbar. It also displays as text on the Bottom Bar.



= Identify Tool is selected!



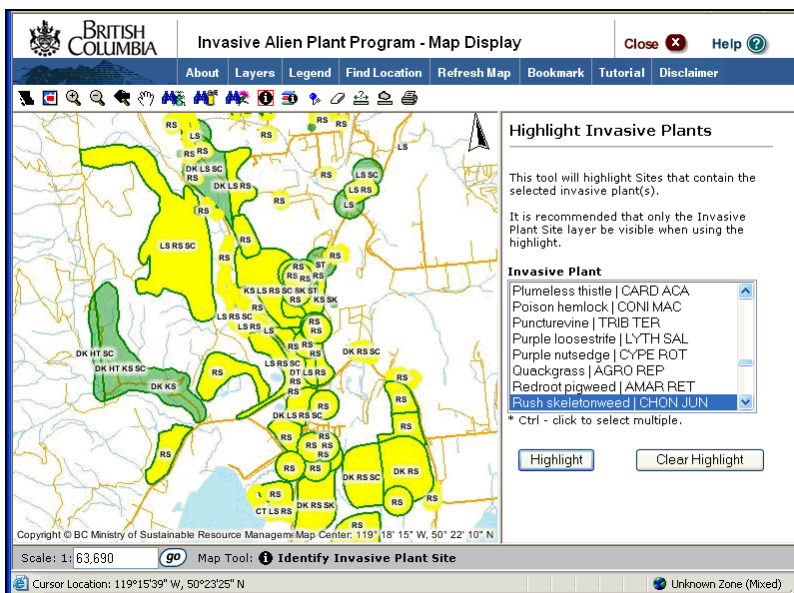
Important Warning

Once you run a query, your results will be highlighted on the map (you will see this in the scenarios below). However, if you then use the **zoom** or **pan** tools to increase the size of your map, be warned that your highlighting only stays at the scale where you set it! It does **not** re-highlight automatically. You must click the **Highlight Button** to run the query and re-highlight the map at the revised scale!

Scenario 1: Highlight sites with a specified invasive plant

In this scenario, let's highlight all sites which are identified as containing Rush Skeletonweed. Follow these steps:

- 1 Navigate to the area of interest.
- 2 Set the layer(s). In this scenario ensure the Invasive Plant Site and the Invasive Plant Site Label layers are both turned on. Click the **Layers** Button and ensure that both these layers contain a check mark.
- 3 Activate the "Highlight Invasive Plants" customized query tool. Click the appropriate set of binoculars. The "Highlight Invasive Plants" menu displays in the right information panel.
- 4 Enter the query parameters. In this example the parameters must be:
 - Invasive Plant = Rush Skeletonweed | CHON JUN
- 5 Click the **Highlight** Button.



The yellow highlighting in the screen print above represents the data we were seeking in Scenario 1.

Scenario 1 demonstrated one query you can perform using the Highlight Invasive Plants Query. However, there are two more ways you can use this function to generate data as follows:

- Query for sites which contain multiple invasive plants.
- Query for sites which contain any invasive plant.



To select multiple invasive plants, click the first plant and press and hold down the “CTRL” key on your keyboard while you click on the additional plants.

Scenario 2: Highlight sites which have been chemically treated with a specific herbicide

In this scenario, let's highlight all sites which have been treated with the herbicide Tordon 22K. Follow these steps:

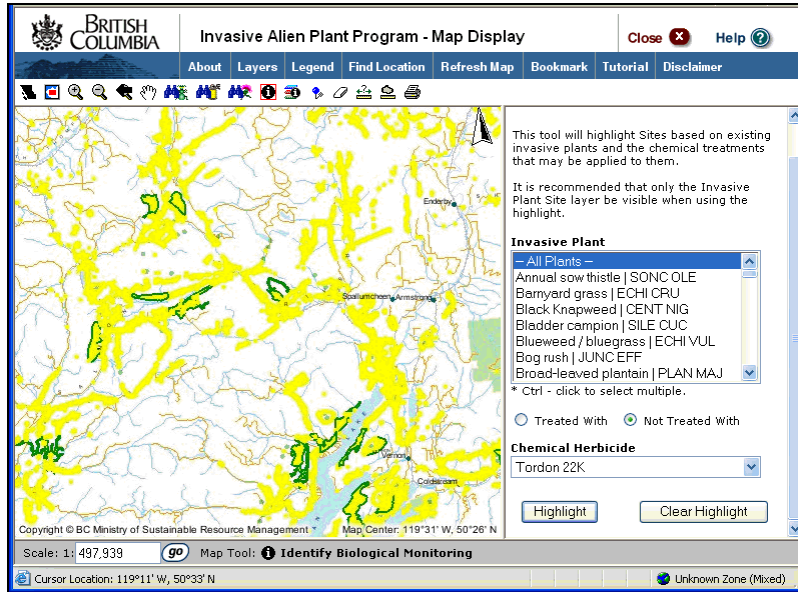
1. Navigate to the area of interest.
2. Set the layer. The only layer we want on is Invasive Alien Plants. Click the **Layers** Button and ensure this is the only layer with a check mark.
3. Activate the “Highlight Chemical Treatments” customized query tool. Click the appropriate set of binoculars. The “Highlight Chemical Treatment” menu displays in the right information panel.
4. Enter the query parameters. In this example the parameters must be:
 - Invasive Plant = All Plants
 - Treated With = Radio button selected
 - Chemical Herbicide = Tordon 22K
5. Click the **Highlight** Button.

The screenshot shows the 'Invasive Alien Plant Program - Map Display' interface. The map displays a geographical area with yellow highlighting indicating sites treated with Tordon 22K. The right-hand panel contains the 'Highlight Chemical Treatment' tool with the following settings: Invasive Plant set to 'All Plants', 'Treated With' radio button selected, and Chemical Herbicide set to 'Tordon 22K'. The 'Highlight' button is visible at the bottom of the panel.

The yellow highlighting in the screen print above represents the data we were seeking in Scenario 2.

Scenario 3: Highlight sites which have not been chemically treated with a specific herbicide

In this scenario, let's highlight all sites which have **not** been chemically treated with Tordon 22K.



Scenario 2 & 3 demonstrate two possible queries you can perform using the Highlight Chemical Treatment function. However, there are many more ways you can use this function to generate data. Here are some additional ways to use this function:

- Query for all plants treated with any herbicide.
- Query for all plants **not** treated with any herbicide
- Query for a specific plant / multiple plants treated with any herbicide
- Query for a specific plant / multiple plants treated with a specific herbicide
- Query for a specific plant / multiple plants **not** treated with any herbicide
- Query for a specific plant / multiple plants **not** treated with a specific herbicide

Scenario 4: Highlight sites which have been biologically treated with a specific agent

In this scenario, let's highlight all sites that have existing invasive plant sites that have been treated with the biological agent *Larinus minutus* Gyll. Follow these steps:

- 1 Navigate to the area of interest.
- 2 Set the layer. The only layer we want on is Invasive Alien Plants. Click the **Layers** Button and ensure this is the only layer with a check mark.
- 3 Activate the "Highlight Biological Treatments" customized query tool. Click the appropriate set of binoculars. The "Highlight Biological Treatment" menu displays in the right information panel.
- 4 Enter the query parameters. In this example the parameters must be:
 - Invasive Plant = All Plants
 - Treated With = Radio button selected
 - Biological Agent = LARI MIN | *Larinus minutus* Gyll.
- 5 Click the **Highlight** Button.

The screenshot shows the 'Invasive Alien Plant Program - Map Display' interface. The map displays a region with various sites marked by yellow and green dots. The right-hand panel is titled 'Highlight Biological Treatment' and contains two dropdown menus: 'Invasive Plant' and 'Biological Agent'. The 'Invasive Plant' dropdown is set to '- All Plants -'. The 'Biological Agent' dropdown is set to 'LARI MIN | *Larinus minutus* Gyll.'. Below the dropdowns are radio buttons for 'Treated With' (selected) and 'Not Treated With'. At the bottom of the panel are 'Highlight' and 'Clear Highlight' buttons. The map interface includes a toolbar with navigation tools, a scale bar (1:1,198,899), and a cursor location display (116°53' W, 50°9' N).

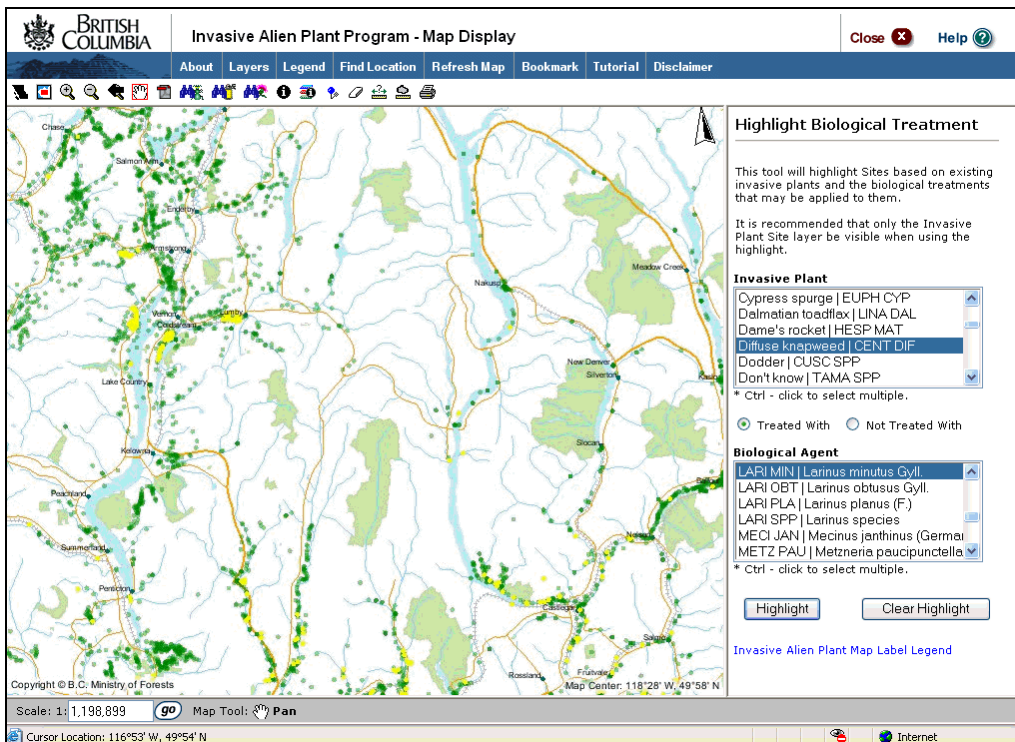
The yellow highlighting, in the screen print above, represents the results of the data search we requested in Scenario 4. To clear the highlighting, click the **Clear Highlight** Button.

Scenario 5: Highlight all sites which have a specific invasive plant species and have been treated with a specific biological agent

Now let's refine our query to highlight all sites which have an existing invasive plant species of **Diffuse knapweed** and have been treated with the biological agent of **Larinus minutus Gyll.** In this scenario, the query parameters are modified slightly to reflect the following:

- Invasive Plant = Diffuse knapweed | CENT DIF
- Treated With = Radio button selected
- Biological Agent = LARI MIN | *Larinus minutus* Gyll.

Remember to click the **Highlight** Button to perform the query.



Scenario 4 & 5 demonstrate two possible queries you can perform using the Highlight Biological Treatment function. However, there are many more ways you can use this function to generate data. Here are some additional ways to use this function:

- Query for all plants treated with multiple agents.
- Query for all plants treated with all agents.
- Query for all plants **not** treated with a specific agent.
- Query for all plants **not** treated with any agent.
- Query for all plants **not** treated with multiple agents.
- Query for one / multiple plants treated with any specific agent, multiple agents or all agents.
- Query for one / multiple plants **not** treated with a specific agent.
- Query for one / multiple plants **not** treated with any agent or multiple agents.

Advanced Scenario

The following scenario will help you to understand why the same sites will sometimes display when you run a query two very different ways.

Site #000001

Contains:

Species #1: Annual sow thistle
Species #2: Bog rush

Site #000002

Contains:

Species #1: Annual sow thistle
Species #2: Black knapweed

Site #000003

Contains:

Species #1: Annual sow thistle
Species #2: Barnyard grass

Treatment Scenario

You have treated all instances of Annual sow thistle with Tordon 22K. You have NOT treated the following with any herbicides: Bog rush, Black knapweed, Barnyard grass.



Query A:

Highlight all sites with ALL INVASIVE PLANT SPECIES which HAVE been treated with TORDON 22K

Result:

The following sites display Site #000001, 000002, 000003 because each site contains "Annual sow thistle".



Query B:

Highlight all sites with ALL INVASIVE PLANT SPECIES which have NOT been treated with TORDON 22K

Result:

The following sites display Site #000001, 000002, 000003 because each site contains a species not treated with Tordon 22K.

- Site #000001 contains Bog rush
- Site #000002 contains Black knapweed
- Site #000003 contains Barnyard grass

IAP Reference Guide - Part III

Module 3.5: Wrap Up Part III

In this module, you will learn:

- Next Steps

Summary

You have now completed Part III of the Invasive Alien Plants Reference Guide. You should be able to:



- Obtain access to the spatial IAP data.
- Explain the type of data that is displayed.
- Explain the IAP Program – Map Display functions.
- Complete step-by-step instructions for obtaining different data/views & queries.

Next Steps

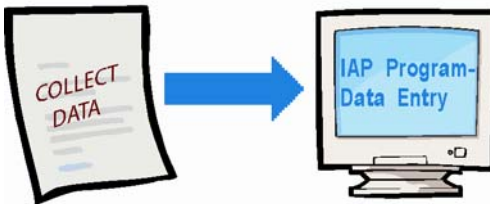


Part I

Part I of this guide explores the business of the Invasive Plants Program and will help you learn how to collect the data that you enter into the IAP Program – Data Entry (attribute database).

Part II

You should now explore Part II of this guide to learn about the IAP Program – Data Entry (if you haven't done so already!). This is an electronic program application that allows you to enter, edit, search, plan and report on invasive alien plant data in BC. The data collected on the paper forms must be recorded in this program. Part II of this guide will walk you through how to transfer the data from the paper forms into the program.



Part IV

Remember, Part IV of this guide is your appendix. This includes useful codes & tables, field collection forms, and other useful reference material. Don't forget to spend some time exploring these useful resources.