New Zealand BioSecure
A division of Southern Monitoring Services Limited

Online
National Mosquito Surveillance Database

User Guide

Version 9 Updated June 2025

Table of Contents

Introduction

The Online National Mosquito Surveillance Database is a single, centrally housed database for all District Health Board mosquito surveillance which is accessible via the internet. The database is securely stored by an independent IT company, supplying a degree of physical security that should protect it against all but the most extreme disasters. It is frequently backed up, and has a power supply with several backup contingencies, and is also protected by an industrial firewall which has continually updated virus protection.

The database is managed by the entomologists at the New Zealand BioSecure Entomology Laboratory (NZBEL) and maintained by an external IT company. Access to the database is only available to National Public Health Service.

Database Operation

Mosquito surveillance collection data is entered as individual or multiple sample records by the sampler which, once saved, can be viewed individually online or as various datasets selected and exported into Microsoft Excel. Entered and saved data can only be edited or deleted by users with the appropriate permissions.

Negative sample records must be entered routinely, they become automatically "Complete" once saved, as no further information needs to be added to them by the entomologists. Samplers are able to edit or add further information if required.

Positive sample records are "Incomplete" until the specimens have been identified in the laboratory, and the entomologists enter the results and save the "Complete" sample record.

All positive samples entered into the database, but not received by the Entomology Laboratory after 3 days, will be followed up via email or phone call to locate them. All samples should be entered on the day of collection.

The database year runs from July 1st to 30th June and is archived January 1st to December 31st. All samples entered each year are archived at end of the following July. Once archived, the sample records can no longer be altered.

Access

The database is accessed by "Health Boards". These consist of the 12 former health boards, and the NZB entomologists group. Each health board has a number of users which access the database via the internet.

Users

To access the data on the database, you must be a registered user. There are three database user levels: sample creator, health board admin and superusers, which are explained below.

The Sample Creator is the first user level. Sample creators are able to add new samples into the database, run ad hoc search queries and export data for external use. They are also able to edit or delete their own sample records until the records are archived. A health board may have one or many sample creators who access the database.

The next level is Health Board Admin. Each PHS usually has only one health board admin who has the ability to add new users and suspend old users (for their health board only), in addition to the

capabilities of the sample editor. The health board admin cannot edit or delete archived data.

The highest user level is the Superuser. This level is only available to the NZBEL entomologists and the database IT staff, who have access to all the data, and are responsible for managing the database, including updating pages, improving search functions and data archiving etc. They cannot alter the archived data records.

When a user is no longer required, e.g. an ex-employee, the status of the user can be suspended, and will no longer appear in the drop-down menus etc. NPHS staff should email the laboratory taxonomy@nzbiosecure.net.nz to arrange this.

New Users

If you are not a registered user, and require access to the database, you should contact your local Health Board Admin or the NZBEL Entomologists via the taxonomy email (taxonomy@nzbiosecure.net.nz). They will provide you with a username and password to access it. You should change your password once you have gained access – this can be done by going to your profile which can be found under your name located top right-hand corner (Figure 2).

Once registered, open your internet browser and navigate to database login page, at Online National Mosquito Database (Figure 1). It is recommended that you bookmark this page or create a shortcut from your desktop, to save typing the internet address each time you access the database. The site can also be accessed through the SMSL Website.
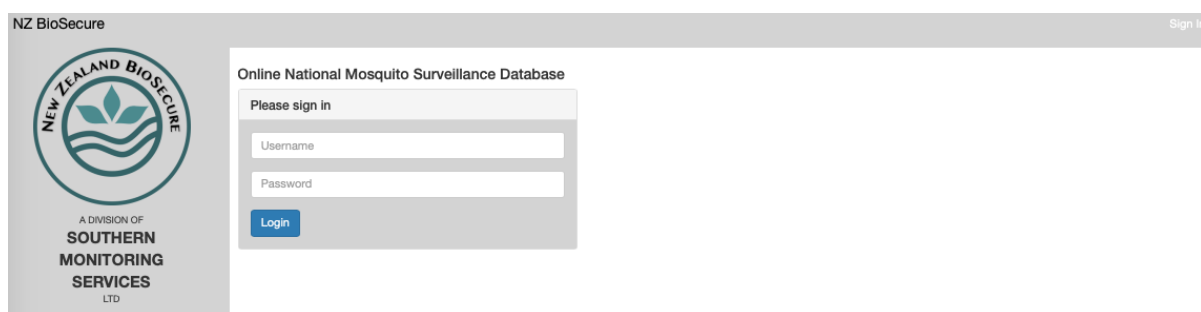

Figure 1. Login page for the Online National Mosquito Database.

Logging In

Enter your username and your password and click the "Login" button (Figure 1). The menu page will appear.
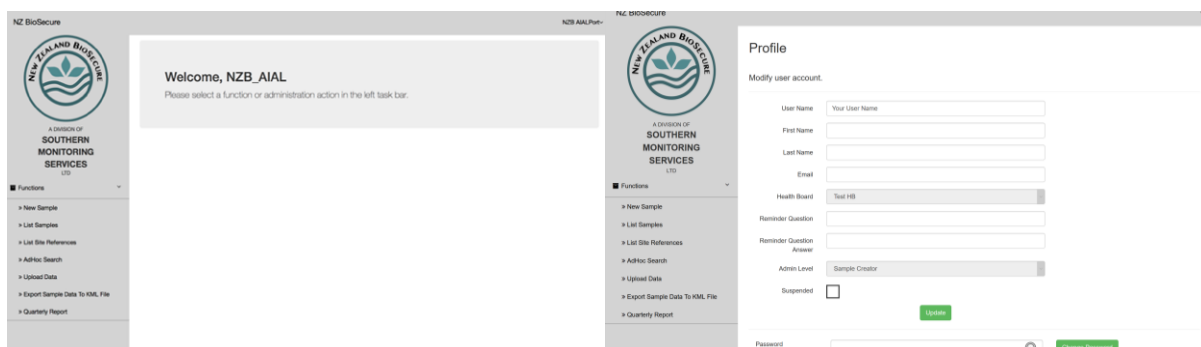

Figure 2. Left: Online National Mosquito Database main menu. Right: Profile

Entering Sample Information

Samples can be entered singularly or in multiple by uploading a csv file.

Entering New Samples

On the welcome page (Figure 2), select "New Sample" from the left-hand menu, a new "Create Sample" form will appear (Figure 3).

"Main Information"

Select your sampling officer details from the drop-down list. Your Health Board is automatically entered and cannot be changed.

Enter the location: The location filters the site references and will only display the site references that are saved to them. The locations with TF after them are for transitional facilities located in the region.

Complete the "Collection Date": Click on the collection date or calendar and choose the date the samples were taken. Then select "Next Page" to view Sample Data Tab (Figure 3).

Figure 3. New "Create a Sample" Main Information Tab

"Sample Data"

Several fields are compulsory. They are denoted by the (*) beside the field name (Figure 4). Fields may contain drop-down menus where you can select from a list. For example, click on the "Select Site reference Number" to select the site reference from the list of previously entered site references. The information related to this site will autocomplete, with the exception of "Total Dips" and "Positive Dips", which will need to be completed for all larval samples. However, if you have a new site reference that is not already listed, select the green "Add Reference No." (the green tab changes to "Cancel") and enter the new site reference name into manually into the "Site Reference No" field. Fill out all the fields with the appropriate information for the site. Once saved new references will appear in the list and will not require entering again. Continue entering sample data field.

Saved details for site references include the following fields: "Trap Type", "Reason for Sampling", "Attractants", "GPS East", "GPS North", "Habitat Category", and "Sample Type".

Figure 4. New "Sample Data" Tab

NB: The coordinates must be recorded and entered using Latitude and Longitude with degrees, minutes and seconds (Lat Lon (DMS)) under WGS84 datum following the example below.

NB: Following an update of the database in 2025 to allow Kobo samples to be exported correctly, the Decimal Degrees format is now accepted, however the Latitude and Longitude with degrees, minutes and seconds is preferred. The below coordinates would be presented as the following 174.91606556 E, 41.23328500 S.

"GPS East": 000 00 00.0000 E
"GPS North": 00 00 00.000 S

It will read like the following on your GPS unit:
Longitude (GPS East): 174° 54' 57.836" E; Latitude (GPS North): 41° 13' 59.826" S

The coordinates should be entered using the following format in the online database e.g.
GPS East: 174 54 57.836 E; GPS North: 41 13 59.826 S.

Note that when entering the coordinates the following characters are not required (° " ' -).

If coordinates in existing site references are not in either of the two formats that are approved, they will need to be converted or re-taken. If the coordinates are missing from the sample they need to be taken and added.

For larval samples, both the "Total Dips" and "Positive Dips" are required to be entered manually, and for all adult and larval samples collected from traps, the number of "Trap Nights" in the "Trap Data" tab must be entered. Only numbers should be entered in the fields for "Total Dips", "Positive Dips" and "Trap Nights".

NB: Enter habitat category: For traps select "Trap option", for sumps select "Subterranean Habitat – Artificial".

NB: The "Positive/Negative" field will automatically display "Positive" and needs to be changed to "Negative" manually, where required.

"Trap Data"

When complete select "Next Page" Trap Data will be displayed (Figure 5).

Figure 5. New "Trap Data" Tab

NB: The "Trap" field will automatically display "Yes" and needs to be changed to "No" manually, where required. If the "Habitat Category" has "Trap Option" selected, only the "Yes" option will be able to be selected in this field.

Select the correct option from the drop-down list for "Trap", "Trap Type", "Attractants" and enter the number of trap nights for trap samples.

NB: If the site that was sampled is not a trap, then the option under "Trap Type" should be "Not a Trap".

"Weather Conditions"

Select "Next Page" to enter the "Weather Conditions" (Figure 6).

The next tab is where information about the weather at the time of sampling is entered (Figure 6). This can be recorded using a weather app on a smart phone, or the MetService website. The information includes "Temperature", "Precipitation", "Cloud Cover" and "Wind Speed and direction". It also has a field to record the time sampling took place. This can be the period of time that was spent doing surveillance at the location the sample is from and does not need to be the exact time that a trap was checked.

Figure 6. "Weather Conditions"

NB: Recording the weather and time is a requirement for the use of S-methoprene by the EPA and the conditions must be entered here or as a comment in the "Attachments" page. This means that ALL of the fields need to be filled out.

"Attachments"
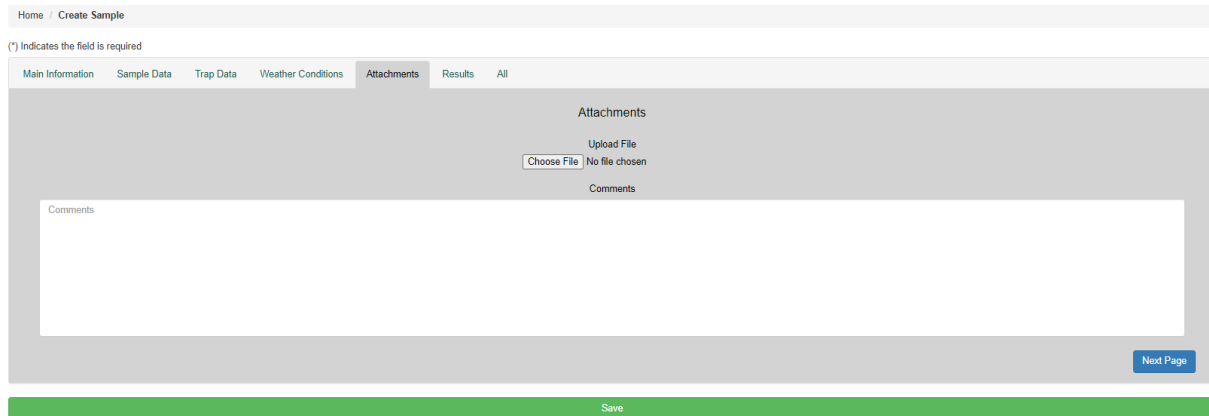Select "Next Page" to upload "Attachments" (Figure 7).

Figure 7. "Attachments"

You may attach a file, a photograph or report to samples, by selecting "Choose File". Your browser will direct to your file source for selection. When you save the sample form, the file will copy onto the database and be saved with the sample data. This is ideal for photos of potential breeding habitats found during 400m surveys. You can add comments in the comments section.

You can save your sample by selecting the Green "Save" Bar at the bottom of the page.
If there are compulsory fields not entered a pop-up will occur (Figure 8) indicating missing data. Navigate to the correct tab and enter the missing data. Saving can occur at any page.
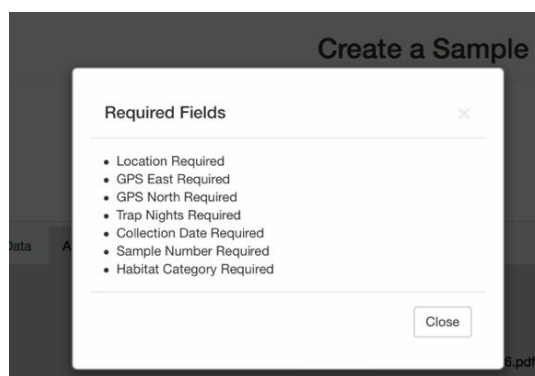
Figure 8. Missing data fields

"All"
Alternatively, all the sample information can be entered in the "All" tab (Figure 9).

Figure 9. All tab

Saving the Sample Information

When all the information for the sample has been entered, click the "Save" button at the bottom of the page to save the record. The sample is then saved onto the database.

If your sample does not save, i.e. you do not have a "Sample Saved" displayed at the top of the page (Figure 10). Click on the "back" icon on your internet browser and try clicking "Save" again. Repeat until the "Sample Saved" message appears on the screen. Failing this, contact your Health Board Admin or the NZBEL entomologists for assistance.

The sample has been saved to the database!

Figure 10. This legend will appear if the samples have been saved

Entering Multiple Samples – Upload a CSV

The database has an upload function to add multiple samples in a CSV file. CSV stands for Comma Separated Value. The CSV Upload Template and CSV Population Guide can be downloaded from the SMSL website ([Entomology Laboratory page](#), Figure 11).

Figure 11. Web Page Downloads – CSV Population Guide

To upload multiple samples, download the "CSV Upload Template" file from the website. Open the file and edit it to reflect your own routine surveillance. Enter the sample data to each of the rows as specified in the header using the correct format (Figure 12). Weather conditions at the time of sampling and time of sampling should be entered into the "Comments" section.

The CSV file must follow a specific format with specific options for each column (Figure 12), this cannot be altered. All elements in the CSV file must be copied exactly as they appear in the online database or the "CSV Population Guide" file provided in the SMS web page.

Figure 12. Example of CSV file with headers and related values the database can read

NB: Samples from new site references need to be entered manually the first time. Alternatively, a new site reference may be created in the database prior to uploading a CSV file.

NB: Do not use commas in a CSV. This is due to the file type (Comma Separated Value), and if a comma is used, any information in the cell following the comma will be entered in the next field or will not be entered at all. This includes in the comments section which will be cut off at the comma.

NB: The Sample Officer format has changed from November 2020. The correct format is the last name followed by the first name. Example: Smith John

NB: The date entered must be in the following format yyyyMMddHHmmss
e.g. Original Date: 2020/07/27 09:05:02;
Import Date Format: 20200727090502

The cells containing the "Collection Date" must be formatted as number without decimals (Figure 13a &13b). To do this, select all the dates in your file, right click and select "Format Cells" (Figure 13a) then select "Number", and enter 0 for the "Decimal Places" (Figure 13b).
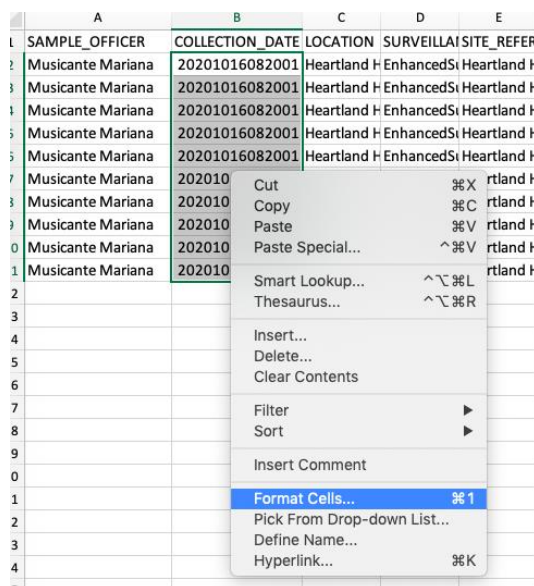
Figure 13a. Changing cell formats   Figure 13b. Formatting the cells to numbers without decimals
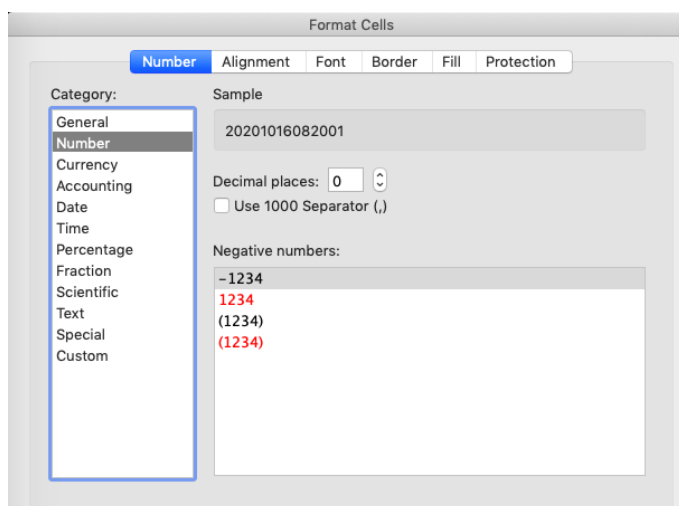
Save the changes made, ensure your file is saved as a CSV. You can leave the document open while uploading so you do not have to open it again if you receive an error message while uploading the file. In a Mac computer you must leave the document open while uploading the CSV file or the date formatting will revert to the incorrect format.

Login and select "Upload Data" from the left-hand column on the menu page (Figure 14).
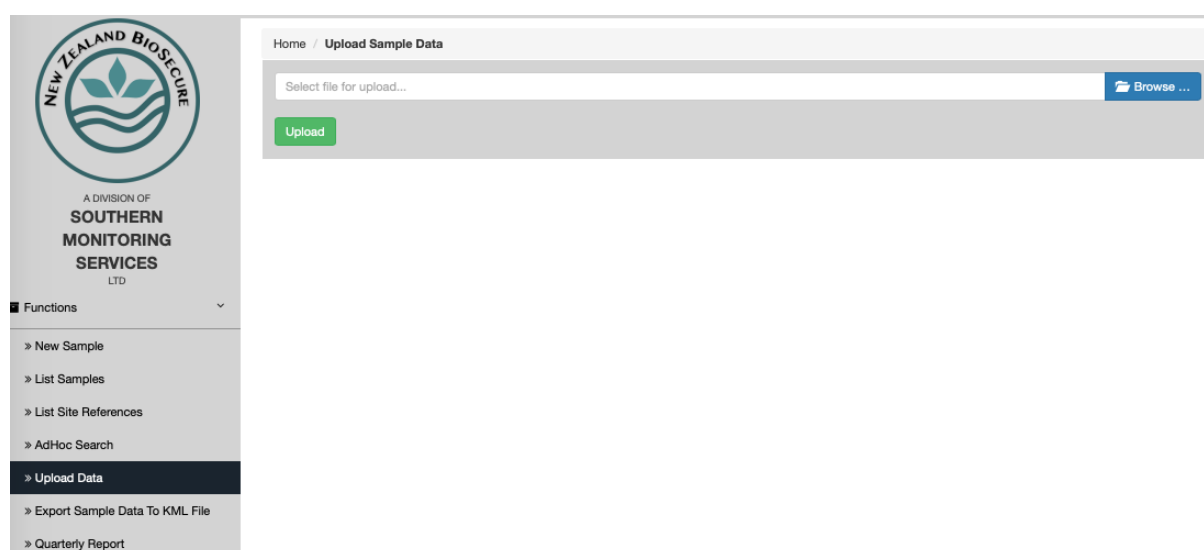
Figure 14. Upload Data

Select "Browse", to locate your file, and choose. Select "Upload".

A popup will display confirming upload success (Figure 15). If certain fields are not entered correctly, you will get an error message. Common issues when uploading CSV files are discussed in the next section and other potential errors are discussed in the document "Common errors for CSV files".

Figure 15. "Upload Succeeded"

To crosscheck your samples have been entered correctly, go to "Adhoc Search" and search for the date your samples were obtained. Open one or two of the samples and check that all of the fields have been filled in.

CSV upload common issues and how to fix them

Name format for "Sample Officer" is incorrect. When this happens, a popup will appear in the database (Figure 15). To solve this issue, replace the "Sample Officer" name format in your CSV with the one displayed in the popup (Figure 15).
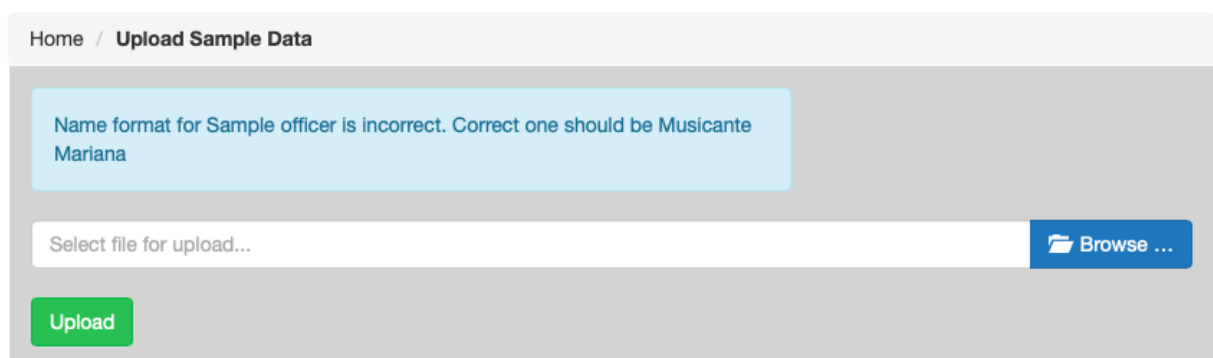
Figure 15. The Sample Officer format is incorrect

NB: The Sample Officer format has changed since November 2020. The correct format is last name followed by first name. Example: Smith John

The Collection date format is incorrect. When the Collection Date is entered incorrectly a popup will display pointing out the problem (Figure 16). To solve this issue, check the following: The date is expressed following the example provided above (yyyyMMddHHmmss); The date cell contains 14 digits in total; The cells containing the date in the CSV file have been formatted as number without decimals (Figures 13a and 13b).

Figure 16. The Collection Date format is incorrect

Site References

The database utilises an automated system for reducing the amount of data entry required for samples from fixed trap sites. The site details are manually entered into the database once, and then become automatically linked to the "Site Reference No." field. From then on, the site detail fields are automatically filled in, once the appropriate "Site Reference No." has been selected from the drop-down list.

NB: Once a "Site Reference No: has been assigned to a "Location" by a sample creator, the "Location" cannot be changed. To modify the "Location" assigned to a particular "Site Reference No" you will need to contact the Lab.

Listing Site References

Click on the 'List Site References' link on the left Menu, and all the site references for your Health Board will be displayed. From this page, you may add to the information relating to a particular site reference by clicking on 'Edit' adjacent to it (Figure 17).

Figure 17. List Site References

Creating new Site References

To add a new site reference, click on the blue button "Create New Site Reference" link from the "List Site References" (Figure 17). Fill in the appropriate fields and click save (Figure 18). The new site reference will automatically appear in the dropdown menu for the next new sample you enter.

Remember to add the correct location to the site reference. The database filters the site references by location when creating a new sample. The location can only be altered by the lab once the site reference is saved.

Figure 18. Creating a new Site Reference

Searching for Samples in the Database

Listing Samples

The "List Samples" link on the menu page column allows you to view your Health Boards samples that are in the database. You can list your samples based on their "Status" (All, Complete or Incomplete), "+VE Sample" (All, Positive, Negative) or "Entry Method" (All, Uploaded or Manual) or Location. (Figure 19).

In "List Samples" be as selective as possible to find the samples, make your selections and click "Search". Your samples will appear in a summary table, from which clicking the green button you can check the results or edit your samples (Figure 20).
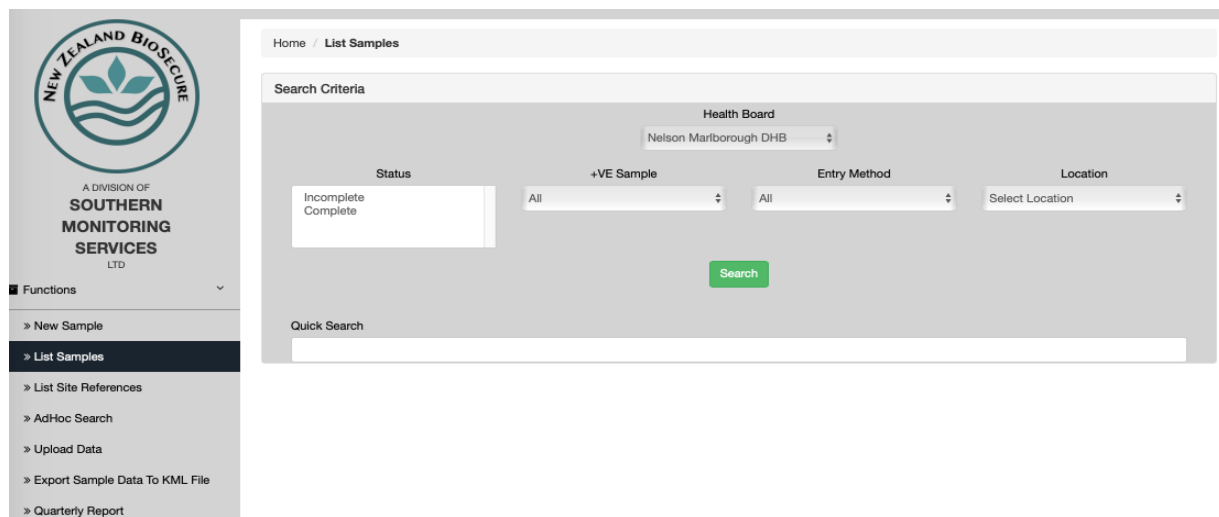
Figure 19. List Samples Link.

Figure 20. List samples.

You can also search for a specific sample using the sample number in the "Quick Search" box in the "List Samples" tab (Figure 21).
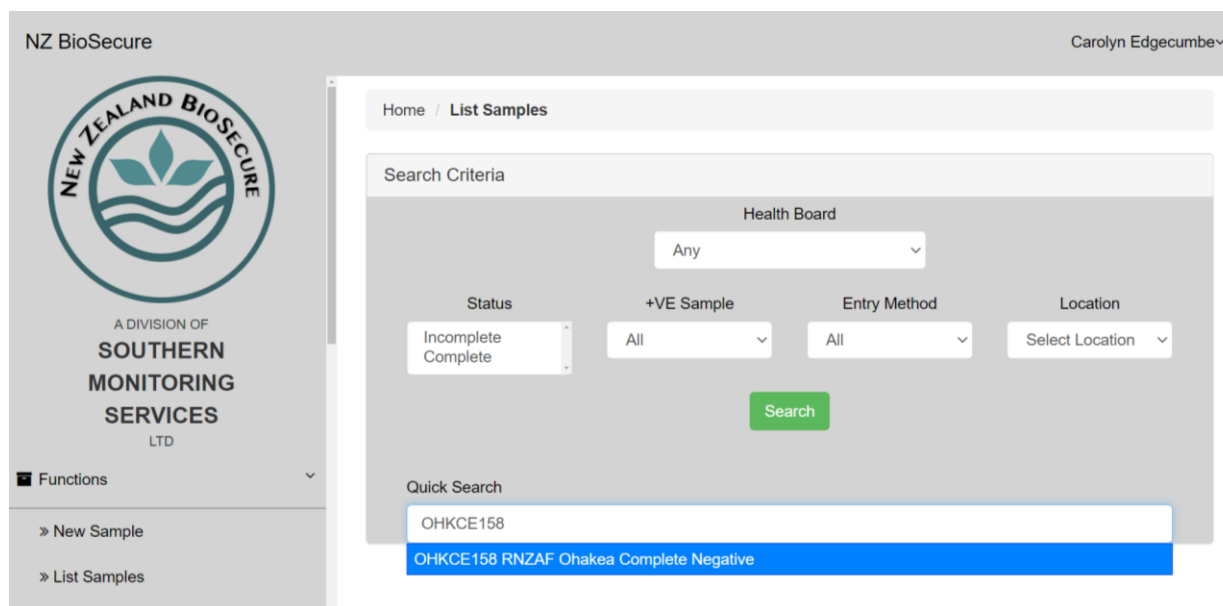
Figure 21. Using the Quick Search bar

NB: To open the sample that you are searching for, you need to click on the sample that is listed

below the search box. The green search button is only to search using the method listed above.

You can export datasets to your computer, by clicking from the "AdHoc Search" "Export CSV". And also "Export Sample Data to KLM File". Refer to the Exporting Datasets section for more detail on this.

AdHoc searches

On the Menu page, click on "AdHoc Search" link on the left side to produce the Search Samples page (Figure 22).

Figure 22. In the AdHoc Search menu refine your search

Most fields from the sample records are included in this page, as they can be used to search and select the sample records. A single field or a combination of several fields can be used for

searching. This is often the easiest way to search for multiple samples.

Examples of searches; all samples collected on a particular date; all positive samples collected by a particular sampling officer during the month of April.

NB: A period of time must be entered into the date fields to obtain the search results. This is the only field that is mandatory.

Once you have entered your criteria, click "Search" and you will be given the listing options displayed as above in the Listing samples section. You can also export this dataset by clicking the "Export CSV" or "Export XLS" button.

Refer to the Exporting Datasets section below for more detail on this.

Exporting Datasets

Data can be exported readily. The system is windows optimised and is the preferred option.

Ad Hoc Search: Export Option

After you have entered the search parameters for the data you wish to export (using the same process as an Ad Hoc Search), click on "Export CSV" or "Export XLS" (Figure 23). The CSV/XLS should automatically download to your PC. Once downloaded it can be imported into excel for viewing.

Figure 23. "Ad hoc Search" results. Export to CSV or Export XLS

Opening Exported Datasets in Microsoft Excel

Datasets exported as CSV files, can be imported into Microsoft Excel, for use in data analysis etc. This may not be automated, as the commonly used separator characters are often used in the data fields, the data may need to be imported manually depending on software versions.

Once you have exported the CSV file to a known location on your computer, open a new file in Microsoft Excel. Click on the "Data" menu, or "File" select the "Import" or similar option (e.g. Get data From Text) or "CSV file" (Figure 24).
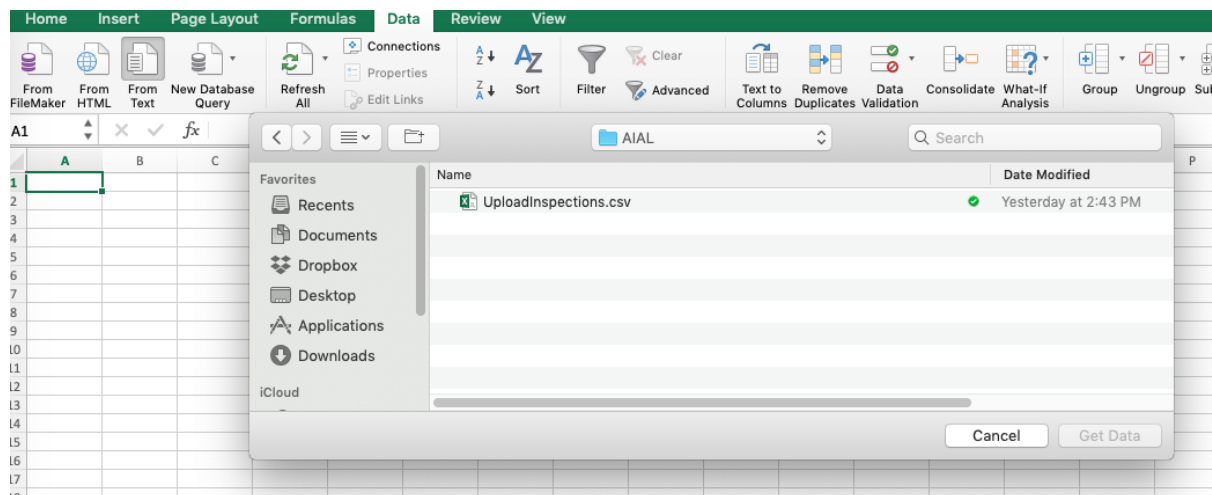
Figure 24. Import CSV

A window will appear and prompt you to browse to the CSV file you wish to open in Excel. Once selected it will open a wizard that you can follow which assists with opening the file. How this looks depends on if you are on a Windows computer or a Mac computer.

When opening the file using a Mac, the process will follow the below steps (Figures 25 & 26).
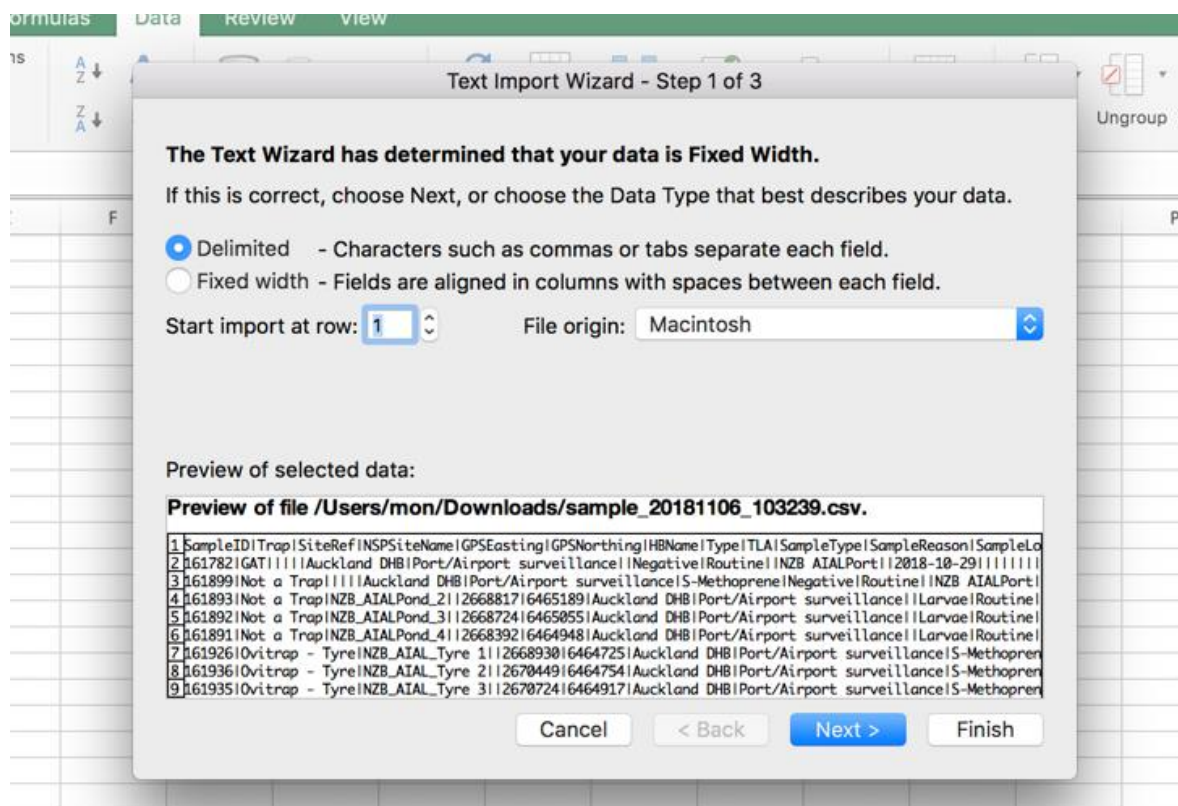
Figure 25. Select "Delimited" and then click "Next"
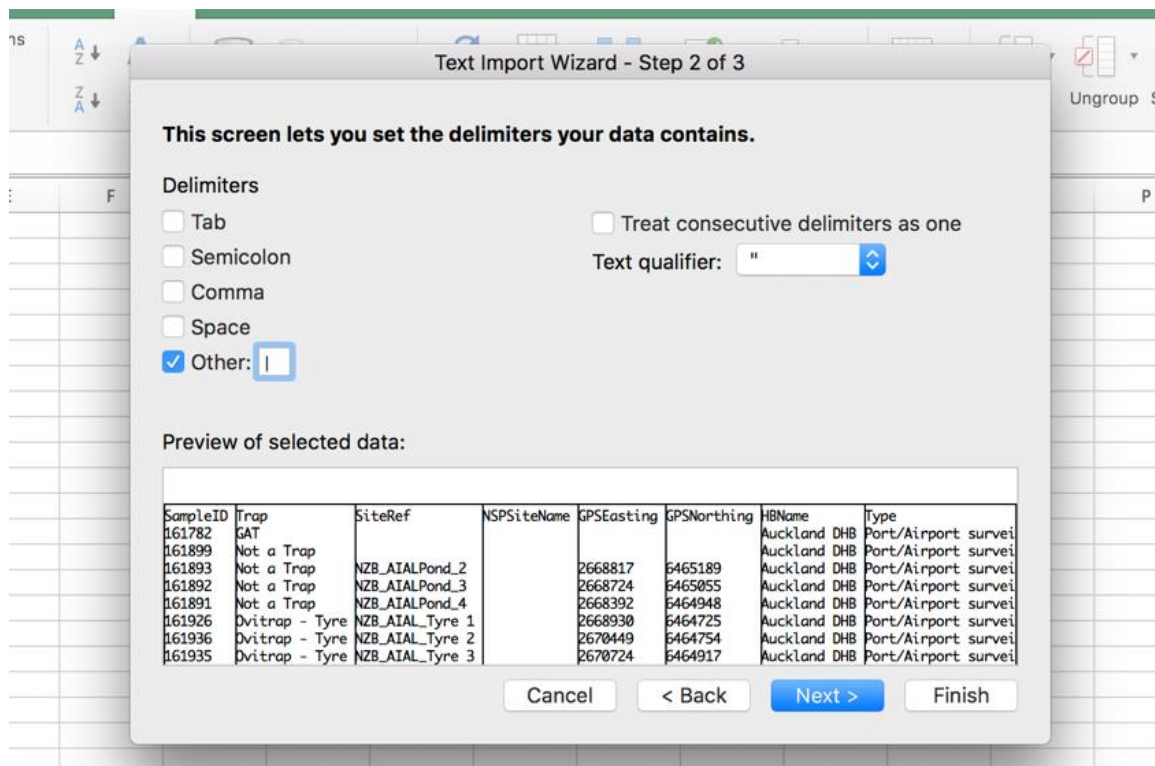
Figure 26. Uncheck the "Tab" box, check the "Other" box and add type in "I" (this is usually shift and the \ button, above 'enter' on the keyboard). Click "Next"

Click "Finish" to add the data to your worksheet where you can review and analyse. Save it as a Microsoft Excel spreadsheet file.

When opening a CSV on a Windows computer the process will look like the following. Please note, there are some extra steps that need to be completed to ensure that the data will display correctly (Figures 27 – 30).

Figure 27. Ensure that the Delimiter is set to "Custom" and add type in "I" (this is usually shift plus the \ button, above 'enter' on the keyboard) in the box below. Click "Transform data"

Figure 28. This will open a new window that will allow you to change the data type of cells.

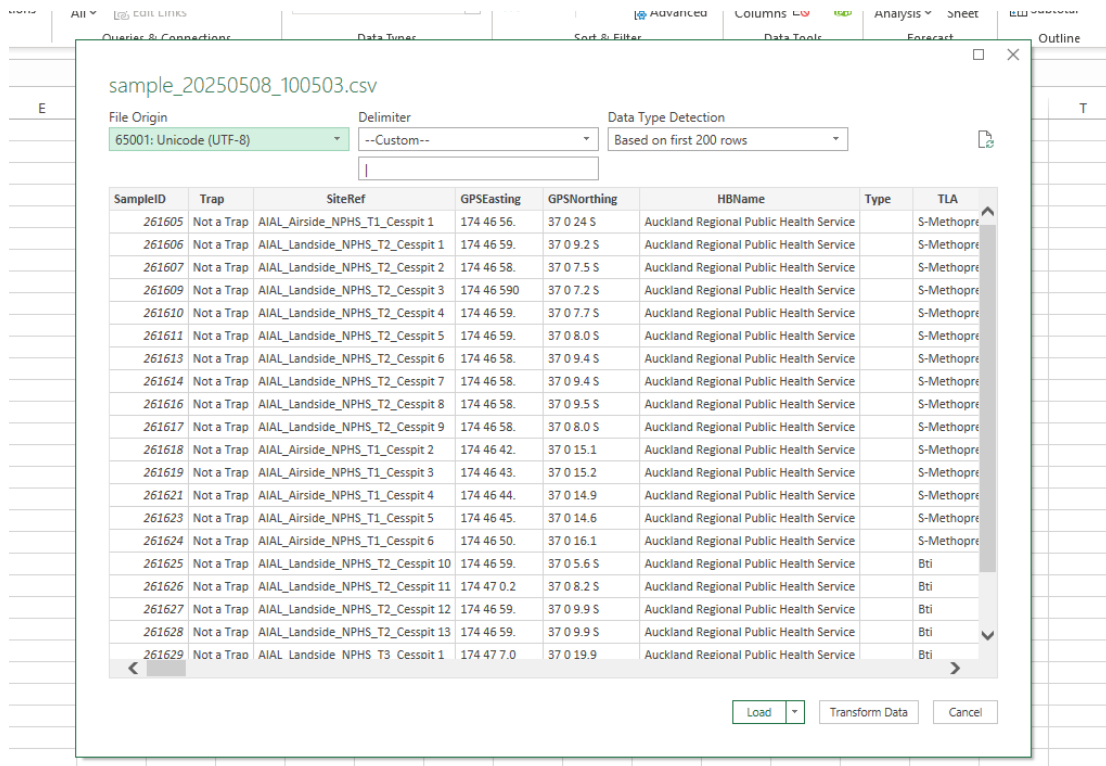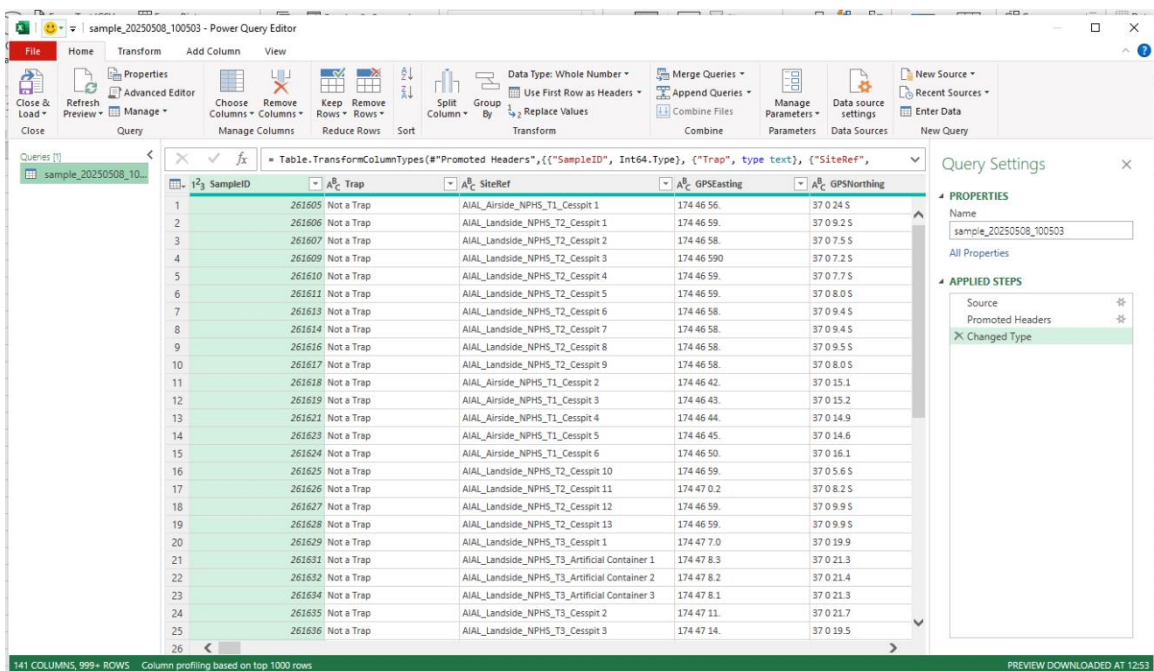In this box, use the scroll bar along the bottom to find "Culex Species 1". Select the entire column by clicking the heading at the top. Keeping this selected, scroll across to find the column "Exotic3_AdultF". While holding the "shift" key click the heading to select all the columns between "Culex Species 1" and "Exotic3_AdultF".

Along the task bar at the top find "Data Type" and change this from "Text" to "Whole Number". Repeat this procedure for the columns containing the "TrapNigths" and "PosDips" and "TotalDips".
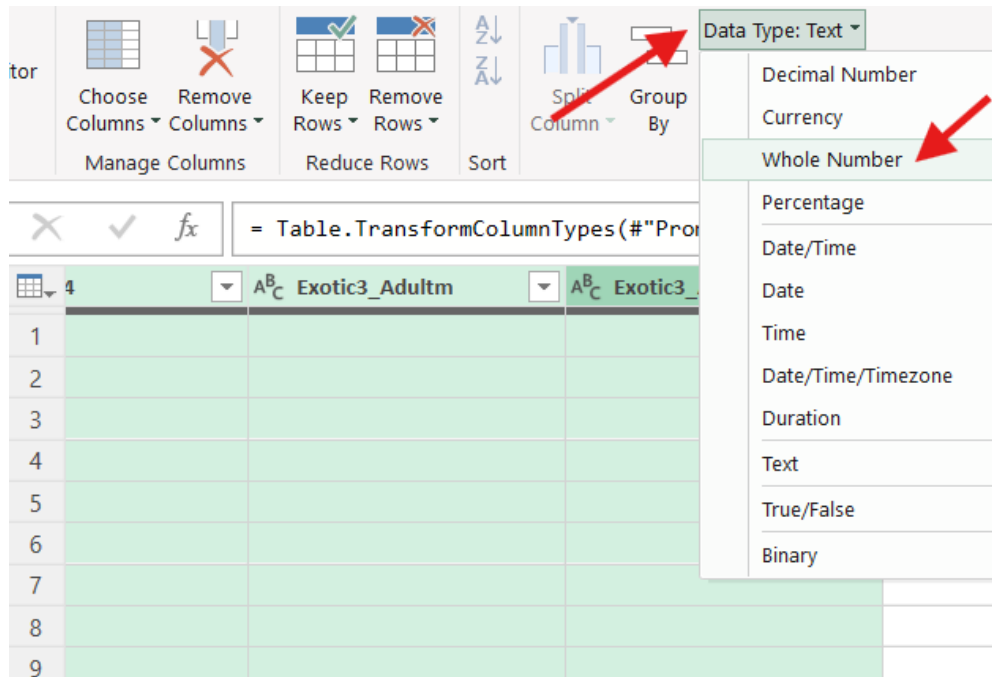
Figure 29. Change the cells containing the results from "Text" to "Whole Number"

Figure 30. A dialogue box will appear that will ask how you want to excel to manage the conversion. Select the option "Replace current"

Once the data has been successfully transformed, the cells for the results will display "*null*". Click "Close & Load" in the top left and the data will open in the Excel workbook.

Datasets that are exported as XLS can be opened without delimiting the data.

Exporting to KML

Exporting sample data to KML enables sample data and results to be viewed in mapping programmes such as Google Earth.

NB: In order for the data to be displayed accurately, the GPS data entered must be accurate and the coordinate information needs to follow the format described in page 6.

Select the "Export Sample Data to KML File" option from the menu (Figure 31) and complete the search parameters to export the data you want displayed on the map. The only information that is mandatory is the collection date to and from fields. Then select the "Export KML" tab at the bottom of the page, a file will automatically be download (Figure 32).
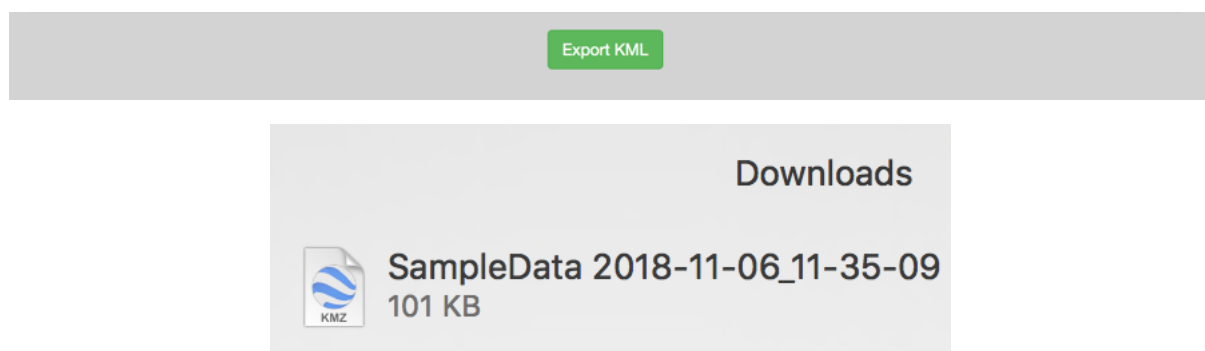

Figure 31. Export Sample Data to KLM

Figure 32. Export KLM button & File Downloaded

To open the downloaded file with Google Earth Pro (desktop), click on the downloaded file and the samples will automatically open in the program. Alternatively open the programme, go to "File" then "Import" and select your download. To open the downloaded file in the browser version of Google Earth, open the webpage for Google Earth, go to "File" then "Open local KML file" and find the file where it's saved on the computer.

The samples results are color-coded as follows: Red pins – Exotic Species, Yellow Pins – non-exotic positive results and Green Pins – Negative (Figure 33).

NB By clicking in the pin the sample information, including results are displayed (Figure 33).
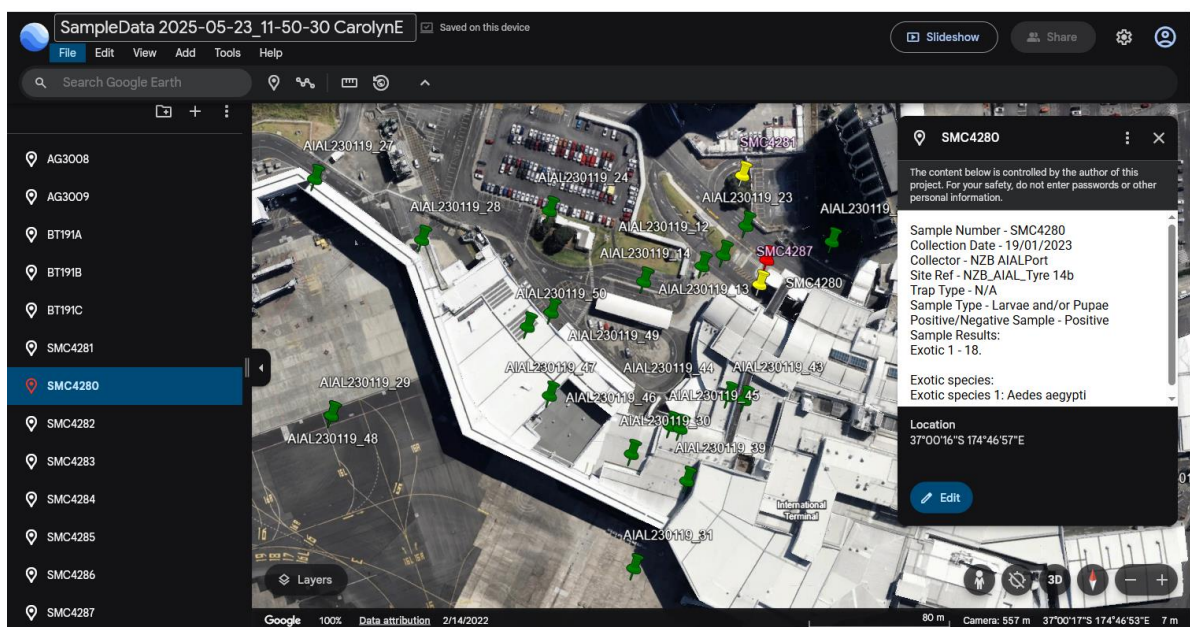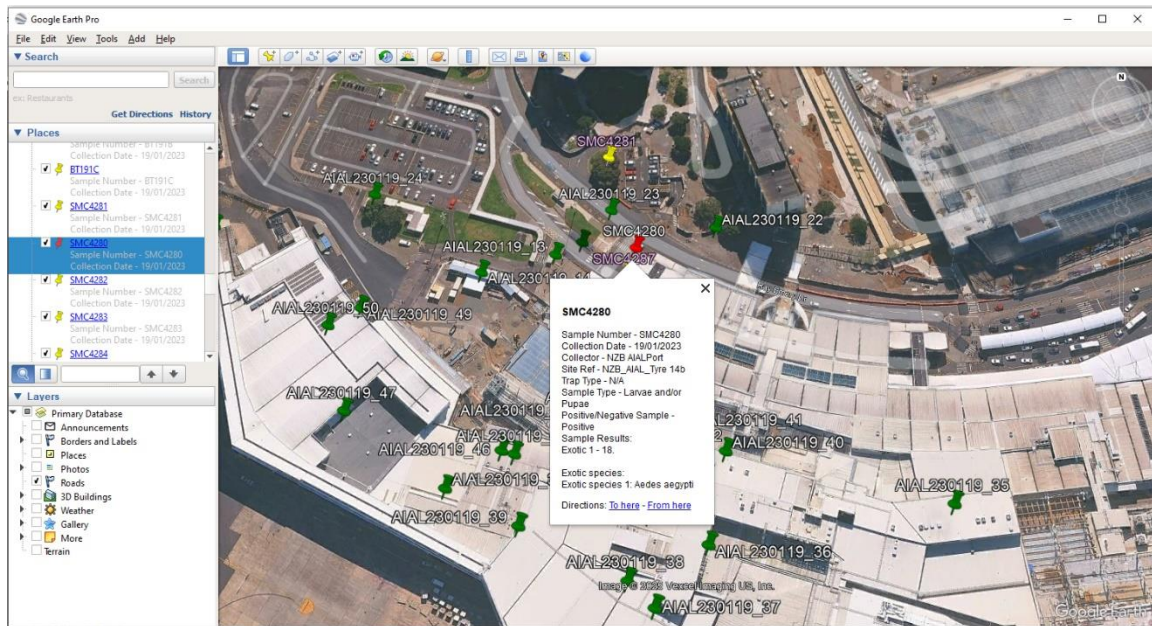
Figure 33. KLM Samples displayed in a) Google Earth Pro (desktop) and b) Google Earth (browser)

The following clearly depicts what an error in entered GPS data can look like when exported as a KLM (Figure 34). Please ensure GPS data is recorded in the correct format and for the correct location. To learn how to correct GPS coordinates using exported sample data, please see the document "How Make Maps and Fix GPS Coordinates in Samples".

Figure 34. Incorrect GPS Co-ordinate example

Finishing a Session

When you have finished with the database, click on your name at the top right of the current screen and you will be returned to the menu page. Click "Logout" to terminate your connection (Figure 35).
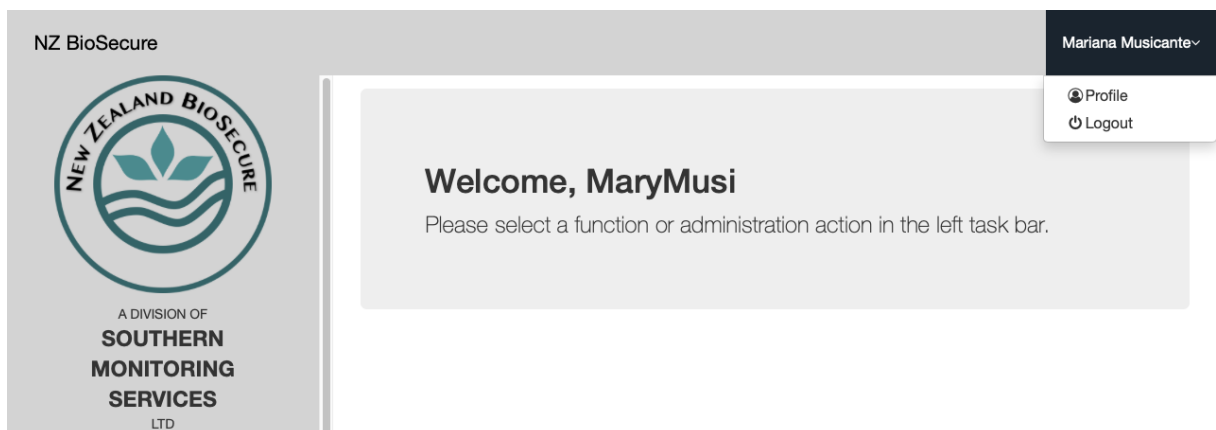

Figure 35. Logout.

Thank You

If you have any queries, please Email us at the NZBE Laboratory

taxonomy@nzbiosecure.net.nz

A Division of Southern Monitoring Services Limited