JNCC OTs GIS meeting

Turks and Caicos

GIS Training Course

Part 2: Layouts and preparing maps for printing

Contents

1 Recap: Making a map 3

2 Using the Map Composer 3

2.1 The composer manager 4

2.2 Basic map composition 5

2.3 Adding a title 8

2.4 Adding a Legend 11

2.5 Customizing Legend Items 12

2.6 Add a scale bar 13

2.7 Add a north arrow 14

2.8 Adding a border 15

2.9 Exporting your map 16

1 Recap: Making a map

In this exercise we will make a simple map that should do the following:

Contain a layer that is categorised into different classes;

- Colour each class appropriately. Think about, what your colours signify, colour tones and the differentiability between colours;
- Data from multiple layers if appropriate.

Use the skills you have learnt from the previous sessions to load the **Conch_Points.shp** and **TCI_Landsat.sid** datasets into QGIS and colour them up appropriately.

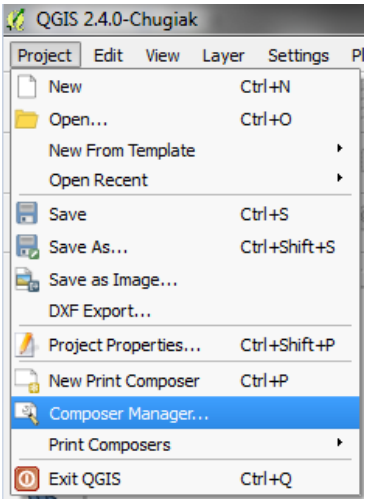
2 Using the Map Composer

Now that you've got a map, you need to be able to print it or to export it to a document. The reason is, a GIS map file is not an image! Rather, it saves the state of the GIS program, with references to all the layers, their labels, colours, etc. So for someone who doesn't have the data or the same GIS program (such as QGIS), the map file will be useless. Luckily, QGIS can export its map file to a format that anyone's computer can read, as well as printing out the map if you have a printer connected. Both exporting and printing is handled via the Map Composer.

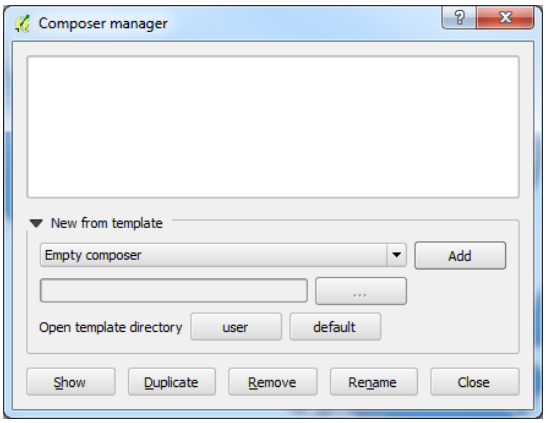
The goal for this lesson: To use the QGIS Map Composer to create a basic map with all the required settings.

2.1 The composer manager

QGIS allows you to create multiple maps using the same map file. For this reason, it has a tool called the **Composer Manager**.



- Click on the **Project ‣ Composer Manager** menu entry to open this tool. You'll see a blank **Composer manager** dialog appear.



- Click the **Add** button and it will prompt you to name your map. Call it **Conch Map**
- Click **OK**.
- Click the **Show** button.

(You could also close the dialog and navigate to a composer via the **Project ‣ Print Composers** menus)

2.2 Basic map composition

In this example, the composition was already the way we wanted it. Ensure that yours is as well.

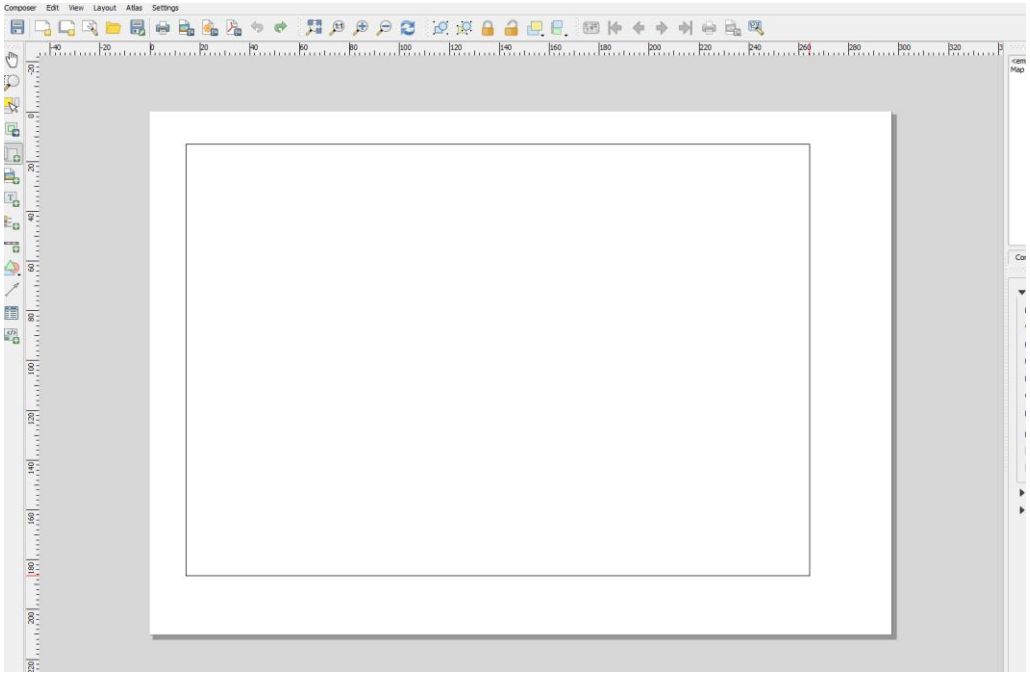
- Check that the values under **Composition ‣ Paper and Quality** are set to the following:
  - **Size**: A4 (210x297mm)
  - **Orientation**: Landscape
  - **Export resolution**: 300dpi

Now you've got the page layout the way you wanted it, but this page is still blank. It clearly lacks a map. Let's fix that!

- Click on the **Add New Map** button:

With this tool activated, you'll be able to place a map on the page.

- Click and drag a box on the blank page:



The map will appear on the page.

- Move the map by clicking and dragging it around:
- Resize it by clicking and dragging the boxes in the corners:

- Zoom in and out on the page (but not the map!) by using these buttons:

- You can also pan the map view and zoom with the mouse scroll wheel map using the **Move item content** tool:

- You can use the **Select/Move item** tool to move the map window around:

- Be sure to leave margins along the edges, and a space along the top for the title:

Note: Your map may look a lot different, of course! This depends on how your own project is set up. But not to worry! These instructions are general, so they will work the same regardless of what the map itself looks like.

When zooming in, the map view will not refresh by itself. This is so that it doesn't waste your time redrawing the map while you're moving the page to where you want it, but it also means that if you zoom in or out, the map will be at the wrong resolution and will look ugly or unreadable.

- Force the map to refresh by clicking this button:

Remember that the size and position you've given the map doesn't need to be final. You can always come back and change it later if you're not satisfied. For now, you need to ensure that you've saved your work on this map. Because a **Composer** in QGIS is part of the main map file, you'll need to save your main project. Go to the main QGIS window (the one with the **Layers list** and all the other familiar elements you were working with before), and save your project from there as usual.

2.3 Adding a title

Now your map is looking good on the page, but the reader is not being told what's going on yet. They need some context, which is what you'll provide for them by adding map elements. First, let's add a title.

- Click on this button:

- Click on the page, and a label will appear:

- Resize it and place it in the top centre of the page. It can be resized and moved in the same way that you resized and moved the map.

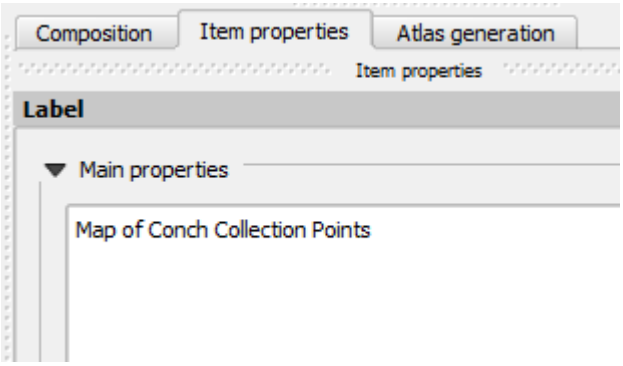
To make sure that you don't accidentally move these elements around now that you've aligned them:

- Right-click on both the map and the label.

A small lock icon will appear in the corner to tell you that an element can't be dragged right now. You can always right-click on an element again to unlock it, though.

Now the label is where we want it, but we still need to edit its contents:

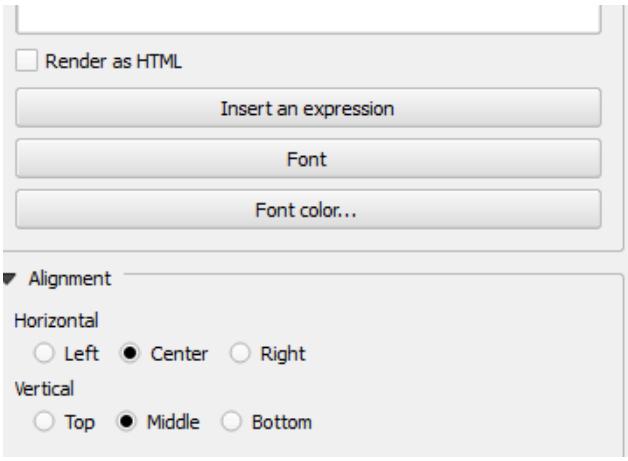
- Select the label by clicking on it.
- Click on the **Item** tab in the side panel of the **Composer** window.
- Change the text of the label to a suitable title. In this case: “Map of Conch Collection Points”
- Use this interface to set the font and alignment options:



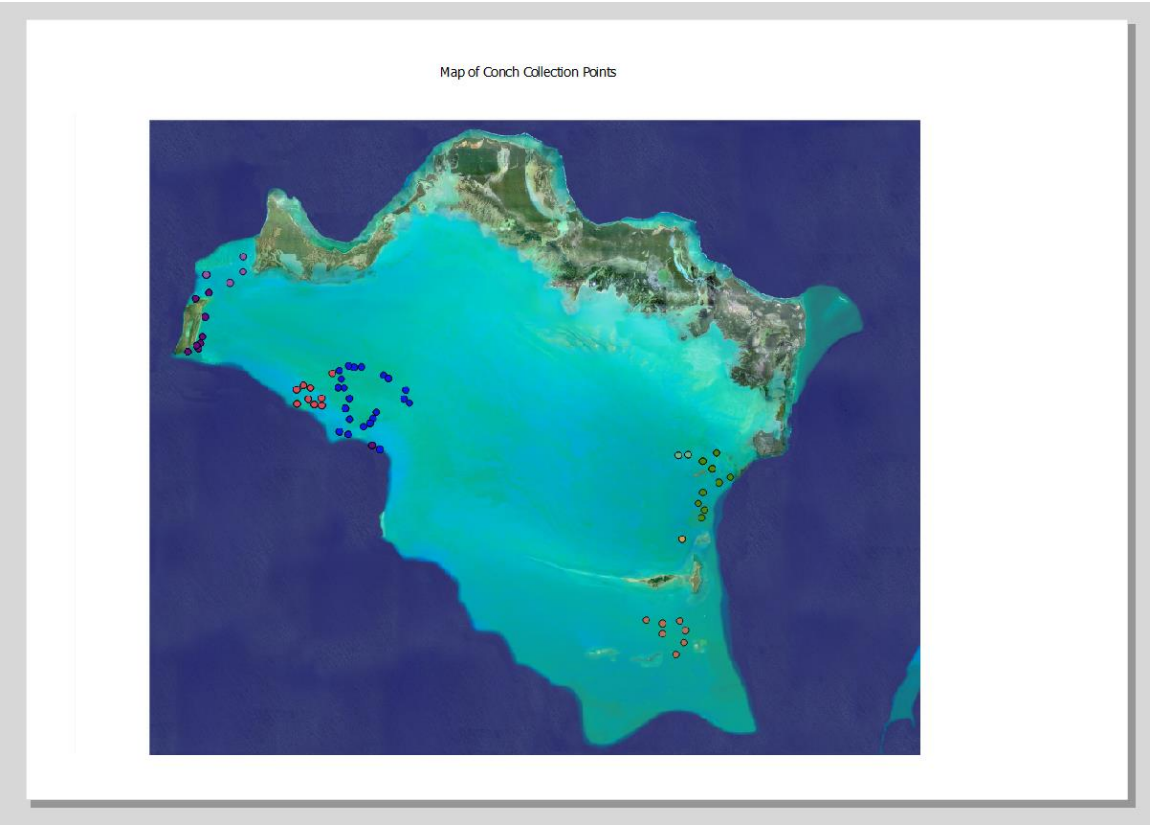
- Choose a large but sensible font (the example will use the default font with a size of 18), and keep the colour subdued.

In fact, it’s probably best to keep it black as per the default. The key is that the font should not be distracting, otherwise people who see the page will be looking at the heading instead of reading the map!

- Set the **Horizontal Alignment** to **Centre**, so that the heading is properly cantered within the label.



Here is our page so far:

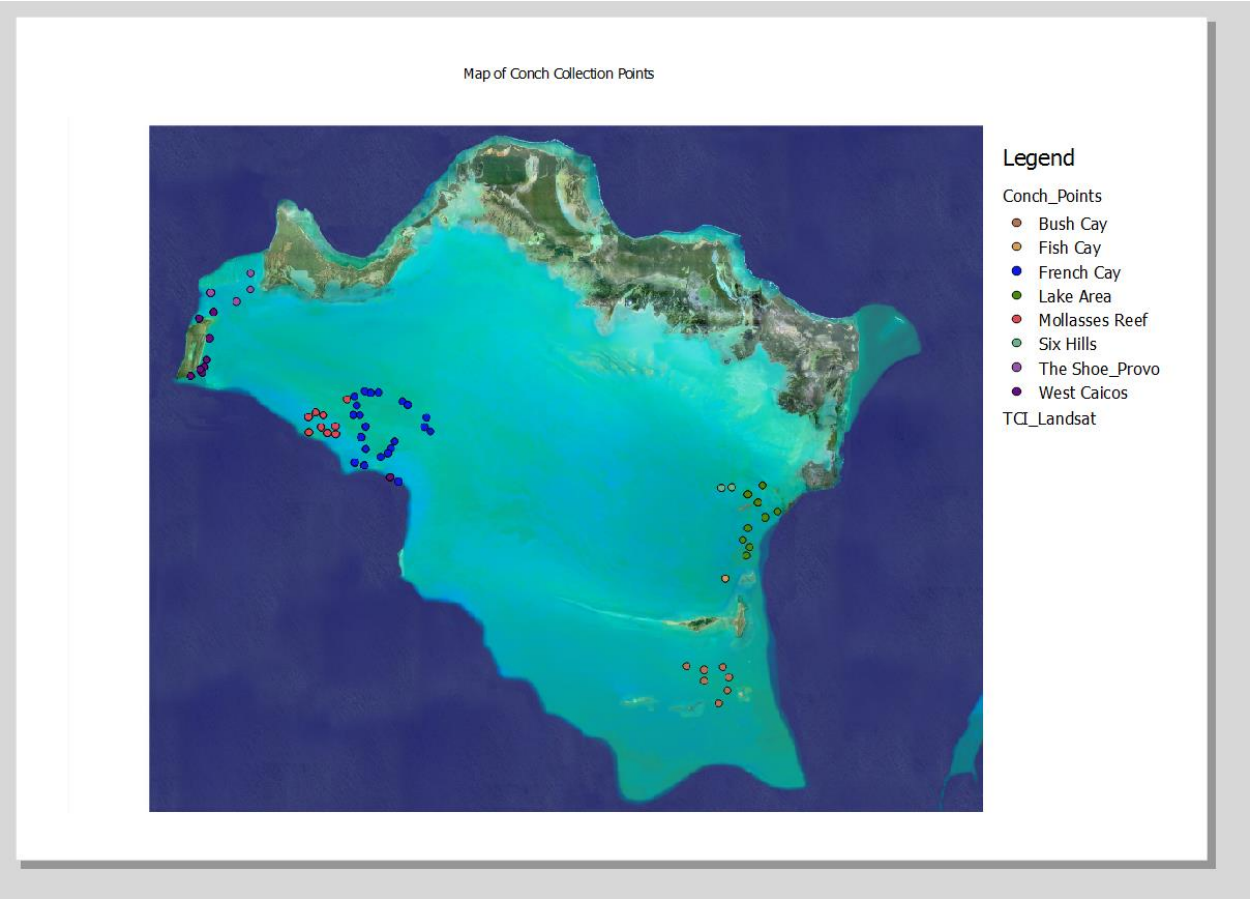


2.4 Adding a Legend

The map reader also needs to be able to see what various things on the map actually mean. In some cases, like the place names, this is quite obvious. In other cases, it's more difficult to guess, like the colours of the Collection Points. Let's add a new legend.

- Click on this button:

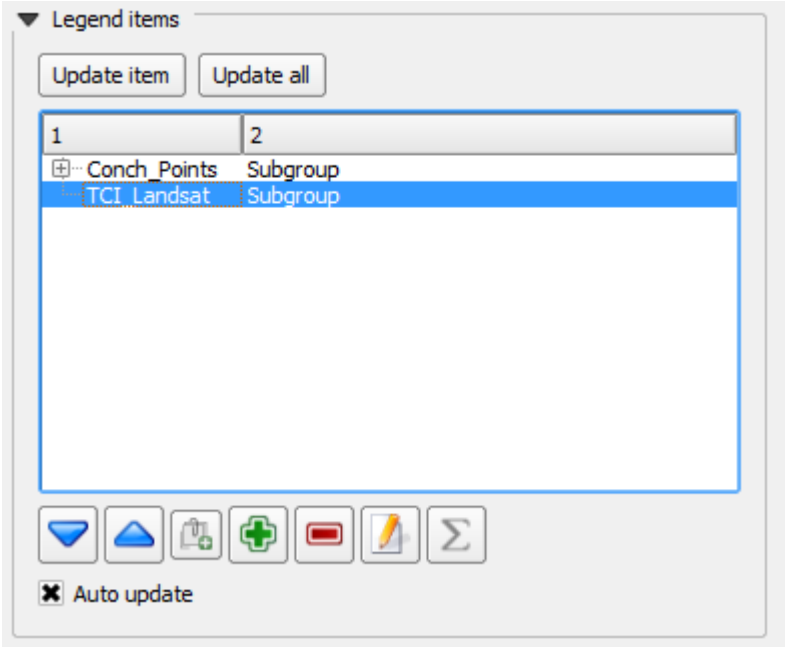
- Click on the page to place the legend, and move it to where you want it:



2.5 Customizing Legend Items

Not everything on the legend is necessary, so let's remove some unwanted items.

- Select the legend then click on the **Item Properties** slider.



- Select the **TCI_Landsat** entry.
- Delete it from the legend by clicking the **minus** button:

You can also rename items.

- Select a layer from the same list.
- Click the **Edit** button:

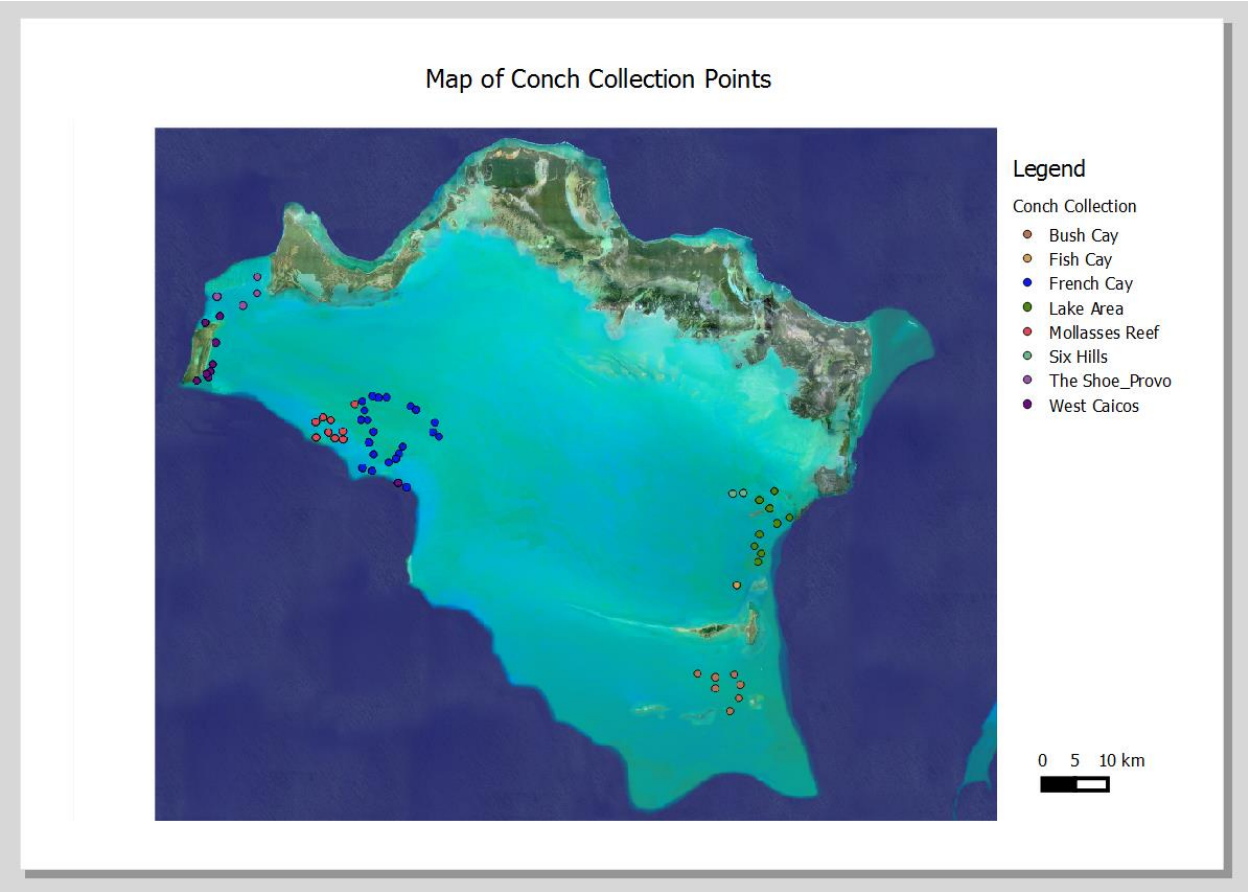
- Rename Conch_Points to Conch Collection.
- Click the down arrow next to any item with multiple classes to rename the classes (using the same method as above).
- Font size and style can be customised under the **Fonts** menu.
- The number of columns can also be customised from the **Columns** menu.

2.6 Add a scale bar

Finally we need a scale bar. Click on the **Add a new scale bar** button and place the scale bar where you want.

-In the **Item properties** menu change the unit label to Metres and set the frame colour to white to remove the border

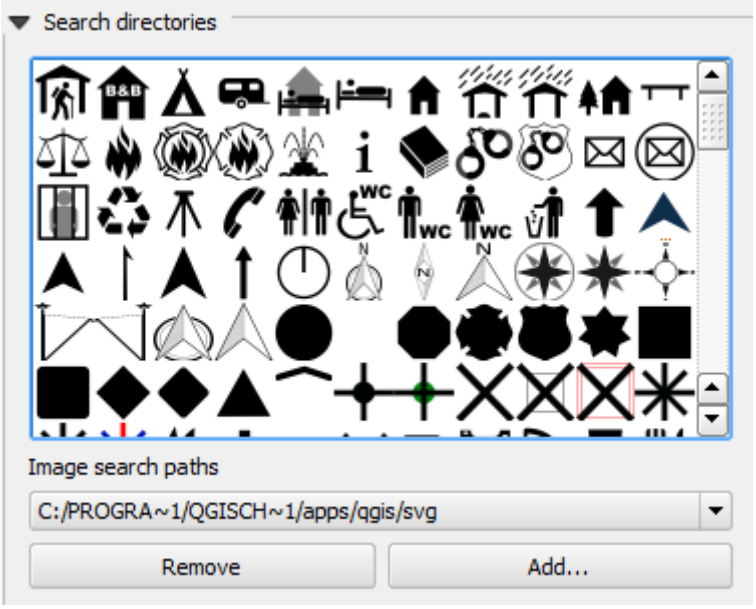
This is the result:



2.7 Add a north arrow

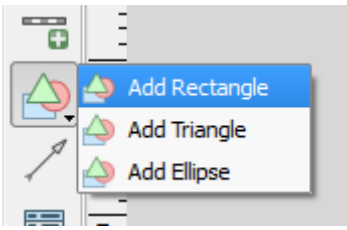
Click the add image symbol

Find a suitable image under the **Search directories** tab

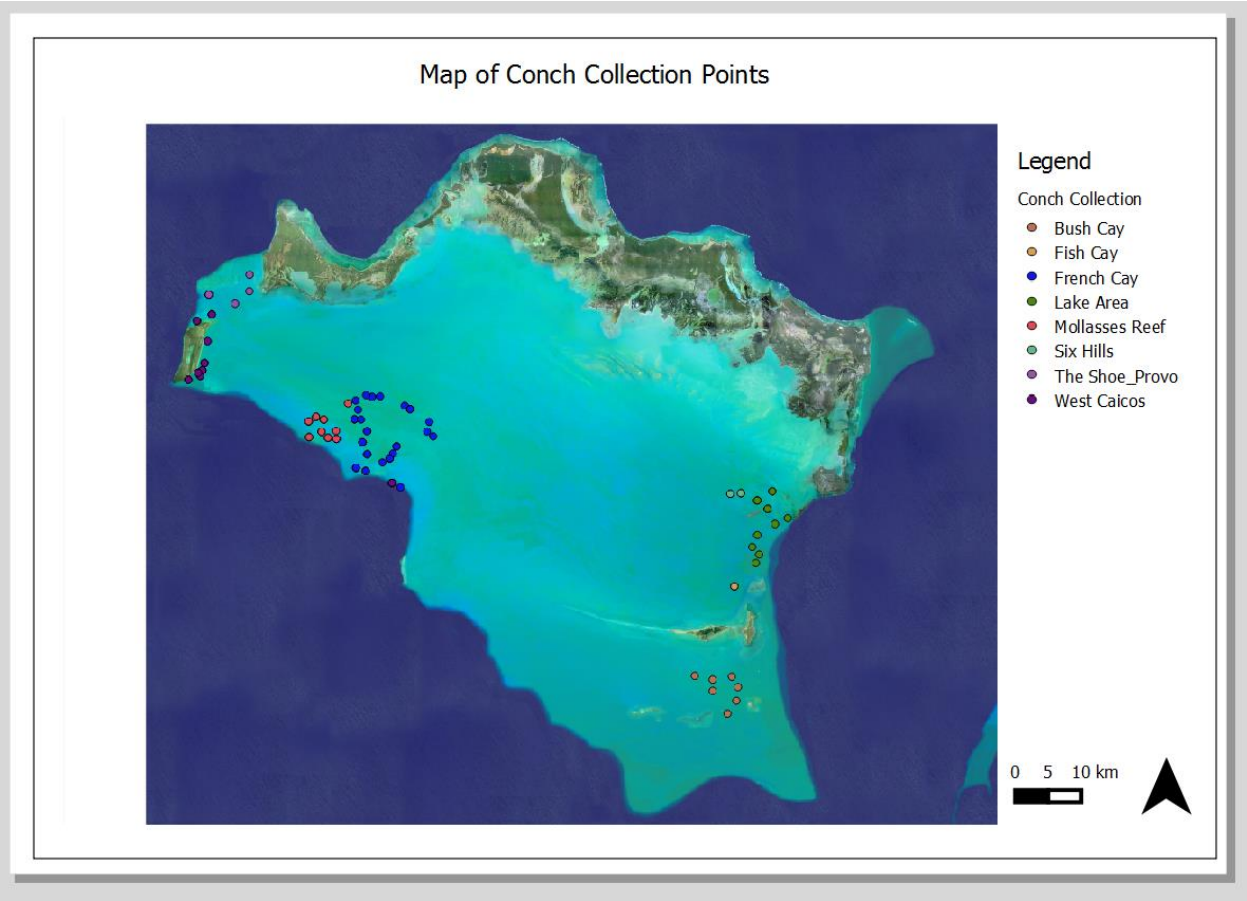


2.8 Adding a border

Click the add a shape icon and select **Add Rectangle**



Then draw a box around your map



2.9 Exporting your map

Hint

Did you remember to save your work often?

Finally the map is ready for export! You'll see the export buttons near the top left corner of the **Composer** window:

The button on the left is the **Print** button, which interfaces with a printer. Since the printer options will differ depending on the model of printer that you're working with, it's probably better to consult the printer manual or a general guide to printing for more information on this topic.

The other three buttons allow you to export the map page to a file. There are three export formats to choose from:

- **Export as Image**
- **Export as SVG**
- **Export as PDF**

Exporting as an image will give you a selection of various common image formats to choose from. This is probably the simplest option, but the image it creates is "dead" and difficult to edit.

The other two options are more common.

If you're sending the map to a cartographer (who may want to edit the map for publication), it's best to export as an SVG. SVG stands for "Scalable Vector Graphic", and can be imported to programs like Inkscape or other vector image editing software.

If you need to send the map to a client, it's most common to use a PDF, because it's easier to set up printing options for a PDF. Some cartographers may prefer PDF as well, if they have a program that allows them to import and edit this format.

For our purposes, we're going to use PDF.

- Click the **Export as PDF** button:

- Choose a save location and a file name as usual.
- Click **Save**.
- Finally, close the **Composer** window.
- Save your map.
- Find your exported PDF using your operating system's file manager.
- Open it.
- Bask in its glory.

Congratulations on your first completed QGIS map project!