**2.3a Colouring points by a selected variable**

**File: Apps/ Day 2 - map\_1**

**Questions:**

1. What does the selected="species" argument in the selectInput() function do?

It gives the variable that will be selected by default when you first run the app

1. What differences do you see in the map legends displayed for species and date. What is the reason for these differences?

The legend for date shows a continuous range of colours with numbered tick labels. The legend for species shows 5 discrete colours with the 5 species names. This is because the legend for species is created using a palette created by colorFactor(), while the legend for date is created using colorNumeric().

**Activity: Add age and sex as options to colour the points by.**  
*Hints:*

* *You will need to change both files*
* *Think about what type of variables age and sex are. Are they factors or numeric?*
* *The operators | or %in% will help you make the necessary changes to the server*

**2.3b Displaying a subset of points using pickerInput**

**File: Apps/Day 2 - map\_2**

**Questions:**

1. What other widgets could we have used to allow selection of the species to display?

checkboxGroupInput, selectInput (with multiple=T)

1. When do you think the live-search and Select All/Deselect All abilities of pickerInput would be particularly useful?

When there are a large number of options to choose from.

1. In the previous version of the app, popUpInfo was created in the section above the server. Why does it now need to be a reactive function within the server?

Because we’re now only plotting a subset of the data points, which are defined by another reactive function. So we only want to create labels for these remaining data points.

**Activity: Change the app so that pickerInput subsets the points based on region instead of species**

*Hint: You will need to change both files*

**2.3c Selectable map layers**

**File:** **Apps/Day 2 - map\_3**

**Questions:**

Have a look at the checkboxInput() code. Compare with the checkboxGroupInput() code from Day 1.

1. What arguments do the two functions share?

inputID and label

1. By which arguments do they differ?

In checkboxGroupInput, the initial setting is given in the “selected” argument (as a list of names), while in checkboxInput it is given in the “value” argument (as TRUE or FALSE). checkboxGroupInput also requires the argument “choices”, which is a list of all the possible options that can be selected.

**Activity: Change the checkboxInput widget to a checkboxGroupInput widget, with selectable region and protected areas shapefiles**  
*Hints:*

* *You will need to change both files*
* *The protected areas shapefile can be found in the app’s ‘data’ folder - you will need to read it into the server*
* *Remember that the server input from checkboxGroupInput is a vector of choices, not a logical value*
* *You will need to add an extra if() statement to the leaflet code*

**2.3c Adding a slider to choose the date range of points**

**File: Apps/Day 2 - map\_4**

**Activity: Add a sliderInput that subsets the points to a selected date range.**

*Hints:*

* *You will need to change both files*
* *You can use ?sliderInput or your code from the Day 1 task 1.4f to help you identify the arguments needed by the sliderInputfunction*
* *In the server, the points are already being subsetted by species - try adding your code for subsetting by date to the same section*