burning embers plot preparation walk through

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Read in R script to prepare data and plot

```
source("burning_embers.R")
```

How should input data be organized?

Read in the data and prep

```
# prep_data transforms
# data from "wide" to "long" form
prep_data("raw_data/BE_Data_21MARCH.XLSX")
```

```
# A tibble: 32 x 3
   reason_for_concern        risk_level temp_diff
   <fct>                          <dbl>     <dbl>
 1 Unique/Threatened Systems          0     -0.61
 2 Unique/Threatened Systems          0     -0.3
 3 Unique/Threatened Systems          1     -0.1
 4 Unique/Threatened Systems          1      0.5
 5 Unique/Threatened Systems          2      1
 6 Unique/Threatened Systems          2      1.75
 7 Unique/Threatened Systems          3      2.25
 8 Unique/Threatened Systems          3      5
 9 Extreme Weather Events             0     -0.61
10 Extreme Weather Events             0     -0.1
# … with 22 more rows
```

```r
# prep_data transforms
# data from "wide" to "long" form
prep_data("raw_data/BE_Data_21MARCH.XLSX") ->
  our_prepped_data  # save the result as object "our_prepp
```
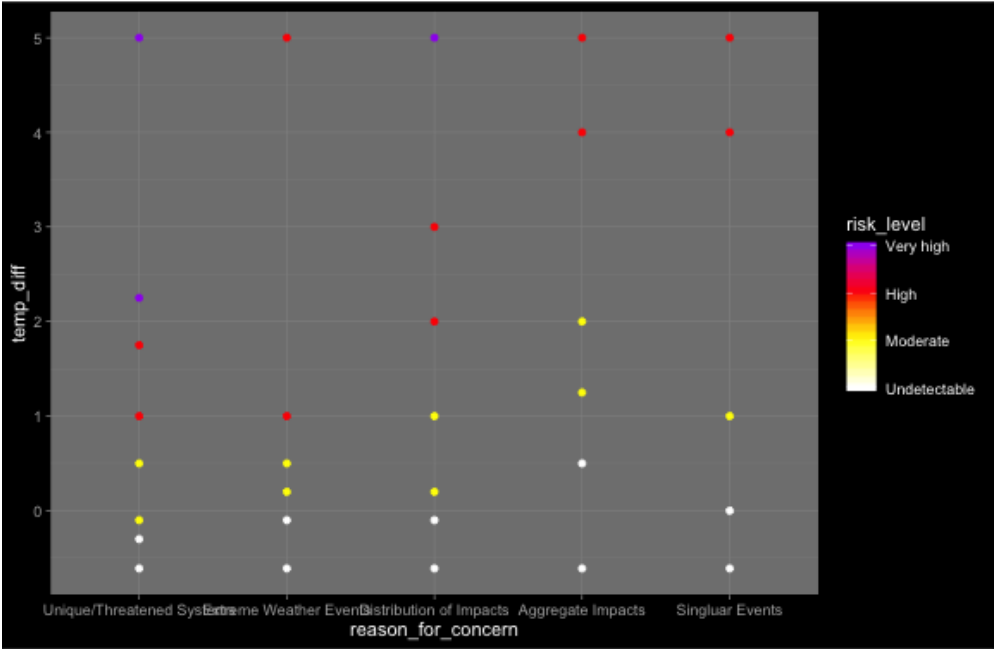
Plot the prepped data to check that risk levels are correctly mapped to temperatures.

```
our_prepped_data    # use prepped data
```

```
# A tibble: 32 x 3
   reason_for_concern          risk_level temp_diff
   <fct>                            <dbl>     <dbl>
 1 Unique/Threatened Systems            0     -0.61
 2 Unique/Threatened Systems            0     -0.3
 3 Unique/Threatened Systems            1     -0.1
 4 Unique/Threatened Systems            1      0.5
 5 Unique/Threatened Systems            2      1
 6 Unique/Threatened Systems            2      1.75
 7 Unique/Threatened Systems            3      2.25
 8 Unique/Threatened Systems            3      5
 9 Extreme Weather Events               0     -0.61
10 Extreme Weather Events               0     -0.1
# … with 22 more rows
```

```
our_prepped_data %>%  # use prepped data
  plotting_raw_data()  # in basic plotting function
```
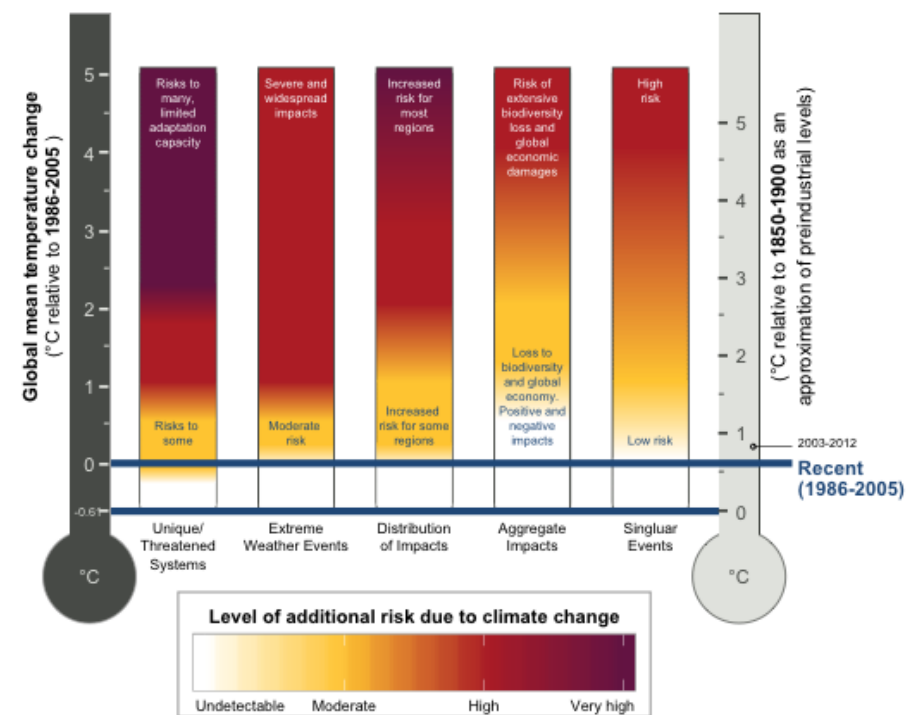
Plot data with gradients

In between each defined point, we calculate the change in risk and temperature. Then color is mapped to the projected risk.

```
our_prepped_data   # use prepped data
```

```
# A tibble: 32 x 3
   reason_for_concern          risk_level temp_diff
   <fct>                            <dbl>     <dbl>
 1 Unique/Threatened Systems            0     -0.61
 2 Unique/Threatened Systems            0     -0.3
 3 Unique/Threatened Systems            1     -0.1
 4 Unique/Threatened Systems            1      0.5
 5 Unique/Threatened Systems            2      1
 6 Unique/Threatened Systems            2      1.75
 7 Unique/Threatened Systems            3      2.25
 8 Unique/Threatened Systems            3      5
 9 Extreme Weather Events               0     -0.61
10 Extreme Weather Events               0     -0.1
# … with 22 more rows
```

```
our_prepped_data %>%   # use prepped data
plotting_burning_embers()   # in burning embers plot func
```

```
our_prepped_data %>%   # use prepped data
plotting_burning_embers() ->   # in burning embers plot fu
  our_burning_embers_plot   # save result as an object
```

```
# save the plot result out using "burning_embers_save" function
burning_embers_save(plot = our_burning_embers_plot,
                    file = "our_burning_embers_plot.png")
```

Result

Global mean temperature change (°C relative to **1986-2005**)

(°C relative to **1850-1900** as an approximation of preindustrial levels)

Unique/Threatened Systems
- Risks to many, limited adaptation capacity
- Risks to some

Extreme Weather Events
- Severe and widespread impacts
- Moderate risk

Distribution of Impacts
- Increased risk for most regions
- Increased risk for some regions

Aggregate Impacts
- Risk of extensive biodiversity loss and global economic damages
- Loss to biodiversity and global economy. Positive and negative impacts

Singluar Events
- High risk
- Low risk

2003-2012

Recent (1986-2005)

Level of additional risk due to climate change

Undetectable   Moderate   High   Very high