

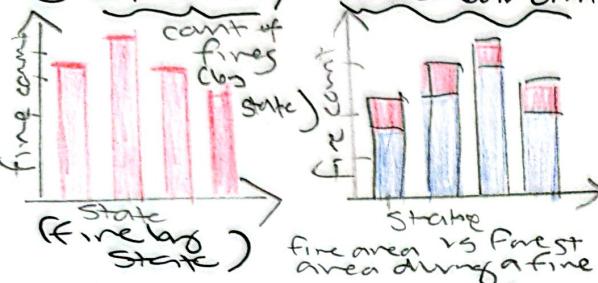
## IDEAS

### ① Choropleth map (fire brightness)

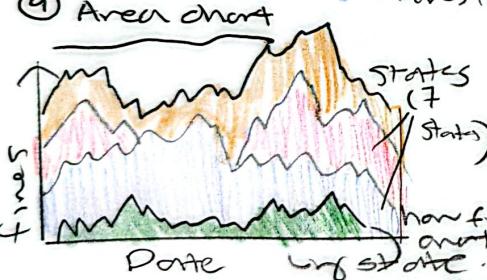
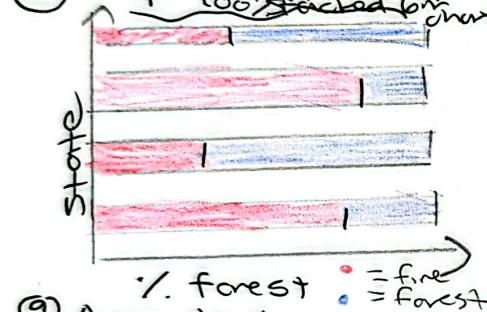


In the top of fires between states in Australia.

### ② Bar chart / stacked bar chart



### ⑥ Proportional chart / 100% stacked bar chart



## CATEGORISE

### ① Fire intensity across Australia (geographic)

### ② Day vs night fires - characteristics in the data

### ③ Proportion of forests burnt in fires

### ④ How does fires affect water quality?

## COMBINE AND REFINER

### ① Count of fires per day

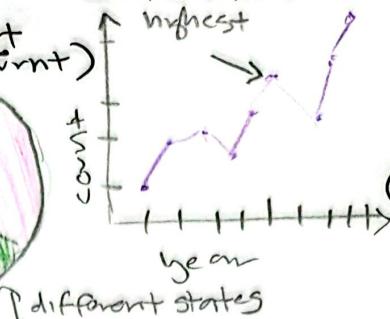
- ↳ can be shown in a map view (geographic data)
- ↳ can also be shown as a simple bar chart

### ② Disproportionate number of fires for each State

- ↳ a 100% stacked chart should be used to better understand the proportion of forests burnt in fires across Australia.

### ③ Pie chart and scatterplot view of day and night fire data to better understand proportions and characteristics of day and night fires in Australia.

### ⑤ Line chart, fire count over time

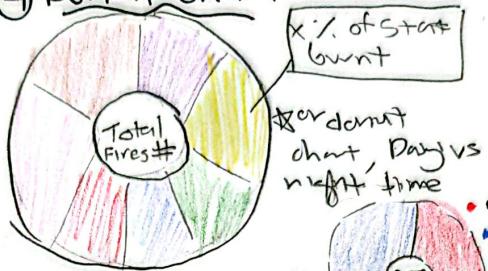


### ③ Pie chart (Forest burnt)

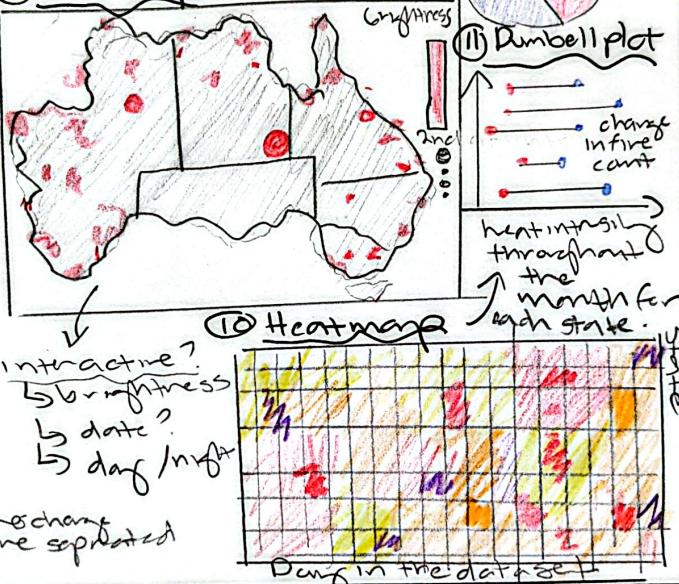


↑ different states

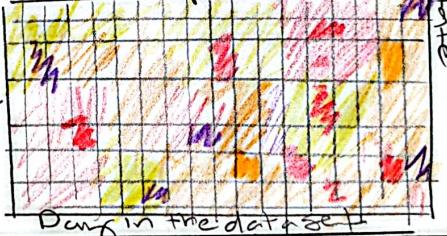
### ④ Donut chart



### ⑦ Dot map (fire locations)



### ⑩ Heatmap



AUTHOR : Patrick Chazot

DATE : 11/10/25

SHEET : 1

TASK : Planning out visualisation ideas

### ⑧ Scatterplot



## FILTER

• Donut charts provide more information than a regular pie chart, only one or the other should be used.

• 100% stacked bar chart vs Stacked bar chart - 100% stacked bar chart should be used if there are States which dominate in terms of total count.

• Dot maps can be potentially confusing if not filtered correctly, impacting understandability.

## QUESTIONS

• Which map idiom is more meaningful when analysing bushfires in Australia?

• What kind of interactive elements can be included on the map to help users better understand how bushfires affect different parts of Australia?

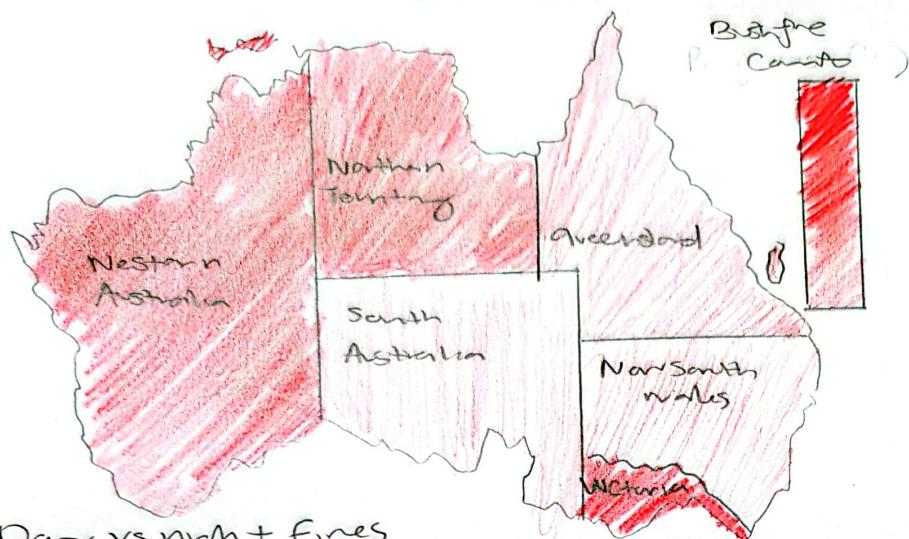
• Which combination of visualisations helps users better understand bush fires in Australia?

• How do you deal with a lot of temporal data for a map idiom? (fires for each date for each state)

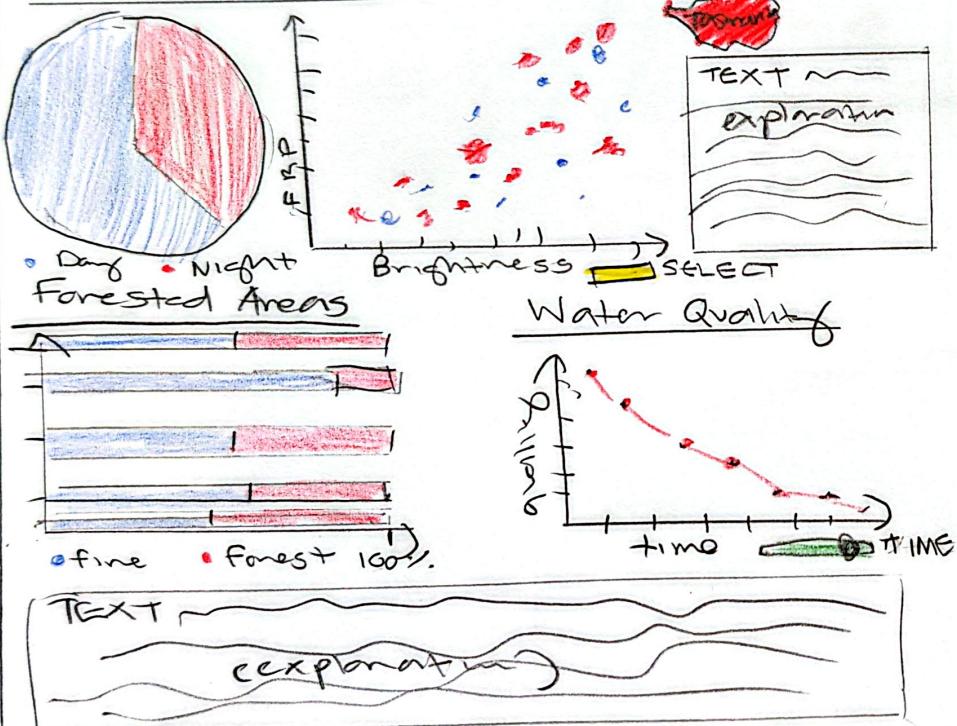
## LAYOUT

### How bushfires affect Australia

#### Bushfires across Australia



#### Day vs night + fires



## FOCUS

- Focus is on the map of bushfires in Australia - looking specifically at which areas of Australia are most affected
  - ↳ using fire count per Australian state to determine which areas of Australia are most affected
    - Cart
    - ↳ dark red indicates higher count of fires in the area (satellite)
- We then look specifically at the characteristics of fires
  - ↳ day vs night
  - ↳ how it affects water quality

**TITLE :** Australian Bushfires and their impact  
**AUTHOR :** Patrick Chang  
**DATE :** 11/10/25  
**SHEET :** 2

**TASK:** Better understanding how ~~fire~~ bushfires affect Australia and its people

## OPERATIONS

- dropdown menu**  

 a dropdown menu which allows you to select which state you want to view in the scatter plot between brightness and FRP (fire radiative power)

## Time slider



a slider for the line chart which allows you to understand exactly how bushfires impact water quality.

## Tooltips

- Showing key information for each chart:
  - proportions
  - pie chart
  - map

## DISCUSSION

### PROS

- Dropdown menu helps filter the data by state to make the graph more readable
- Visualisation gives a holistic view of bushfires in Australia
  - where they occur
  - characteristics
  - how they affect water quality in lakes

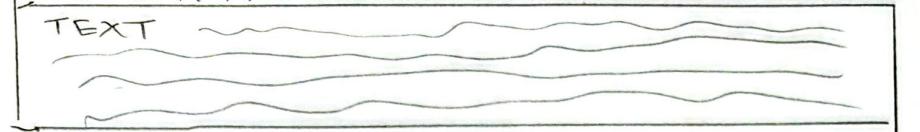
### CONS

- The map might be consuming too much space in the visualisation
- The visualisation is lacking room for text/explanation
- The map can provide more functionality → filter?

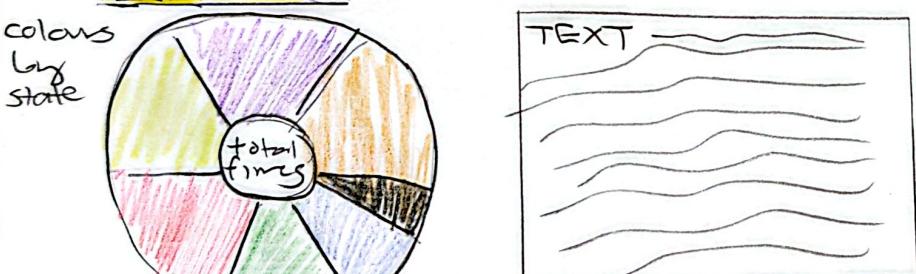
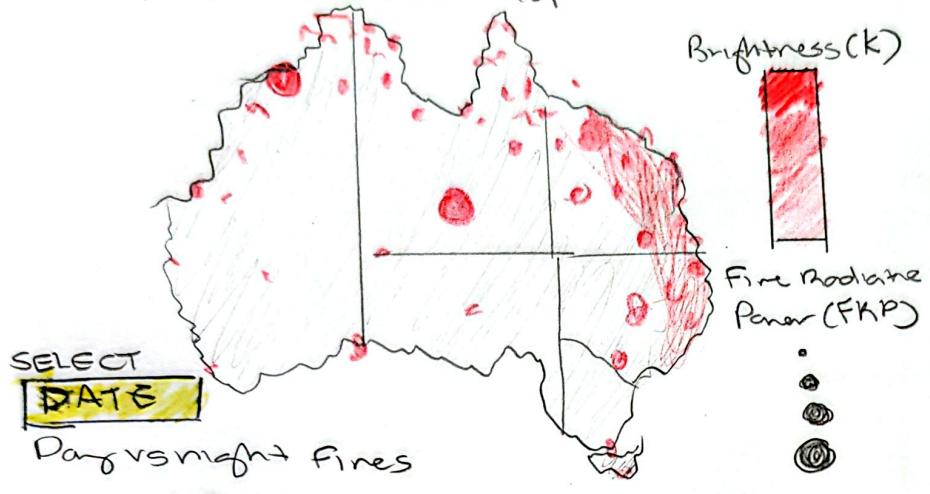
## LAYOUT

### Bushfires in Australia

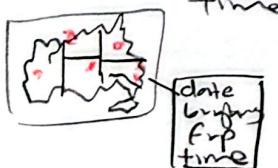
#### Introduction



#### Bushfires across Australia



- The focus of this visualisation is on fire locations and the comparison between time of detection



- map provides specific information about when fires occurred and their characteristics (satellite, long, lat, FRP, brightness, date)
- Select allows you to see fires at different times
- comparison between fires at night vs fires at day

TITLE: The impact of Australian Bushfires

AUTHOR: Patrick Chang

DATE: 11/10/2025

SHEET: 3

TASK: Understanding which areas of Australia are most impacted by fires and its implications

## OPERATIONS

- SELECT menu

### STATE

- Allows you to filter the map by the states, allowing you to look at peak periods

### Tool tips



- tool tips on the map for each coordinate, provides specific information about each fire.

## DISCUSSION

### PROS

- Including more text to explain visualisations
- Dot map provides more information yield compared to a choropleth map separated by state.
- more descriptive information about proportion of forest burnt in bushfires

### CONS

- Text to visualisation ratio - not enough graphs used to explore the data
- A pie chart is potentially not meaningful if all the proportions are roughly the same.
- Not enough space delegated to explore other aspects of the data. e.g. how bushfire impact water quality.

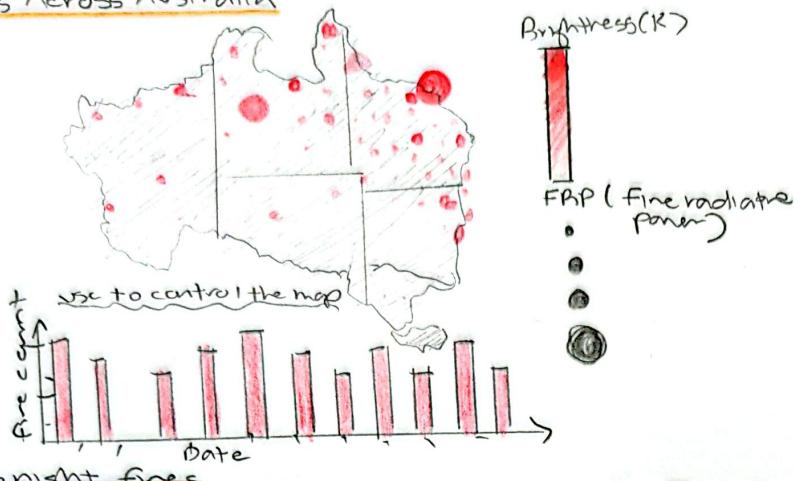
## LAYOUT

### Australian Bushfires

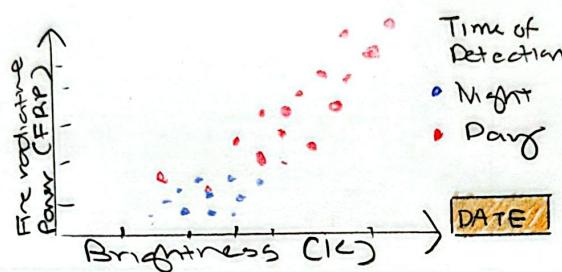
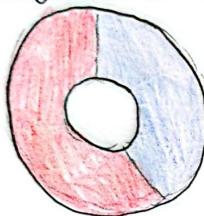
#### Introduction

Text

#### Bushfires Across Australia

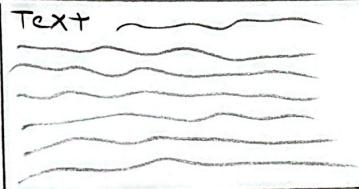
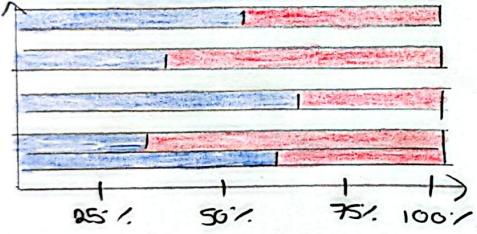


#### Day vs night fires

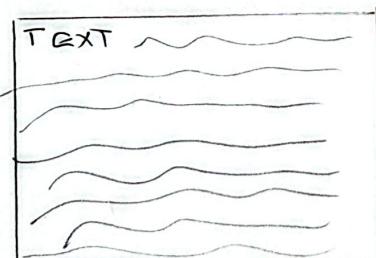
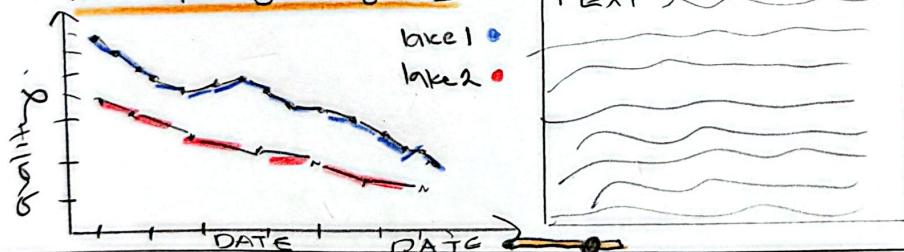


Text

#### Forest areas burnt



#### Water quality during fires



## FOCUS

- The focus of this dashboard will be on the interactive

map



this visualisation not only tells you when fires are most frequent in Australia, it also tells you where they are geographically on the map

- we then explore the characteristics of fires in Australia
  - ↳ day vs night fires
  - ↳ brightness, fire radiative power (FRP)

TITLE : Australian

Bushfires

AUTHOR: Patrick Chong

DATE: 12/10/2025

SHEET: 4

TASK: Exploring the impact of bushfires on Australia

## OPERATIONS

- Date brush feature
  - ↳ can select a period to look at for fire map
  - ↳ looking when it had the least/most → narrowing the data shown on the map.

#### Select menu

DATE [D/M/Y]

M	T	W	T	F	S	S
1	2	3	4	5	6	
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27

select scatterplot view at a specific date.

#### Slider

Slider - looking at the lake's water quality over time as time goes on (as the fire continues)

## DISCUSSION

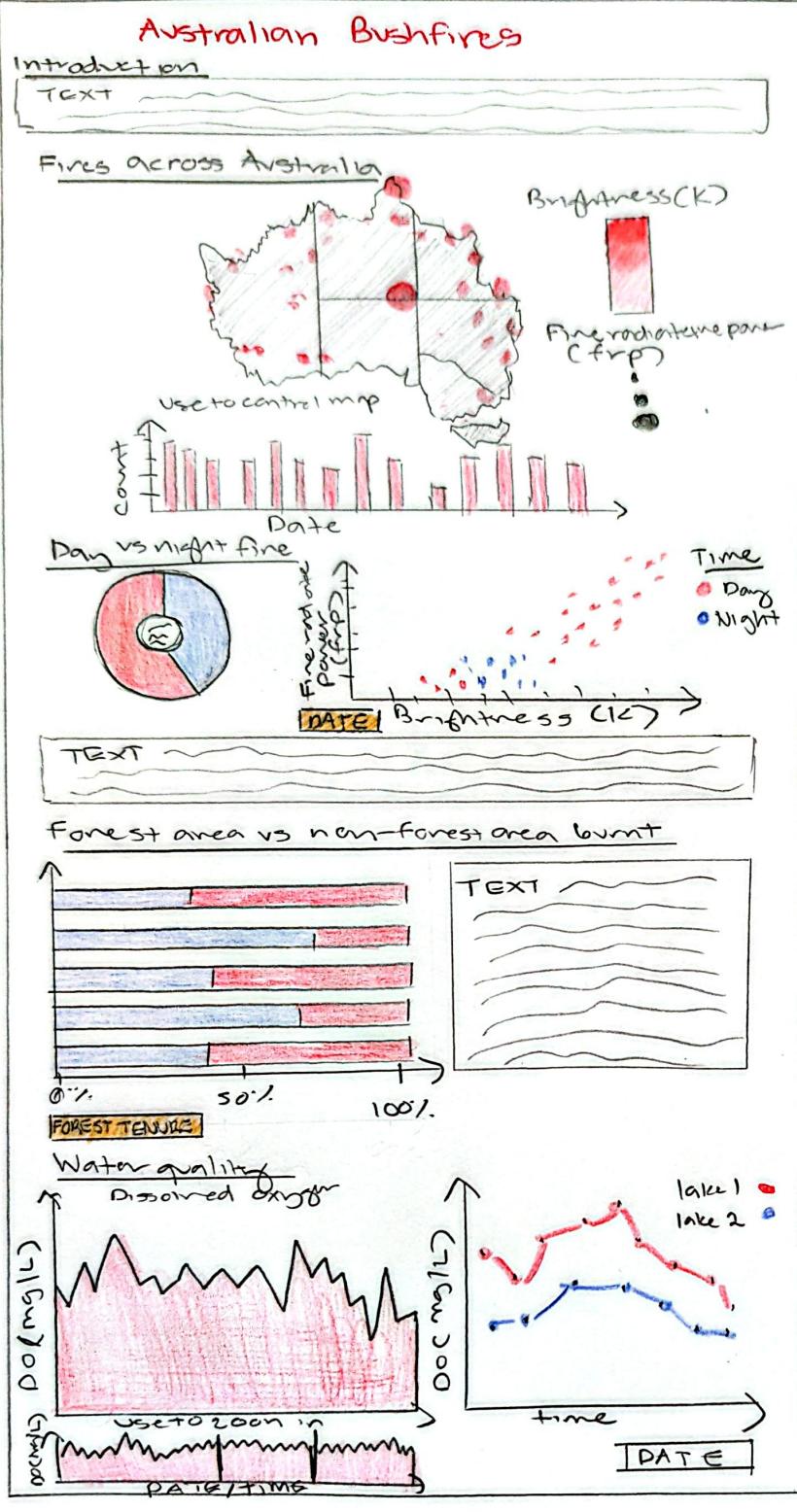
### PROS

- Nice balance of graphs to text
- The date brush makes the map very interactive and provides much more information yield
  - ↳ you can choose to examine a specific period
- consistent colour scheme

### CONS

- Water quality graph might be difficult to implement → 1 dataset for each lake
- need to be clear that the bar graph is a date
  - brusher - it might be confusing for users.
- Could potentially include more visualisations in the layout.

## LAYOUT



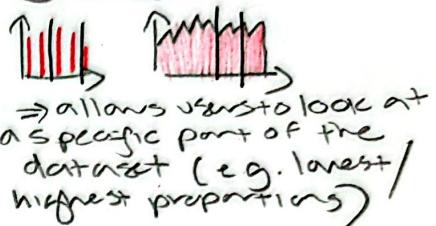
## FOCUS

- Focus is on the characteristics of fires in Australia with some analysis of how it affects the Australian landscape
  - ① Locations / intensity of fires (map + bar)
  - ② Day vs night fires (donut + scatterplot)
  - ③ Proportion of forest consumed in the fire (100% proportional chart)
  - ④ water quality during a fire.  
(area chart with brush to zoom in on specific period)

TITLE: Australian Bushfires  
AUTHOR: Patrick Chang  
DATE: 13/10/25  
SHEET: 5  
TASK: Exploring the impact of bushfires on the Australian landscape

## OPERATIONS

### Brushing



→ allows users to look at a specific part of the dataset (e.g. latest/ highest proportions)

### Select menu

#### DATE

#### FOREST TENURE

Leasehold

Public

Nature

Common

Private

Unreserved

Other

• View fire data from a specific date

• View how much of a forest was burnt during the fire in each state

↓  
• Looking at specific types of forests

• Tool tips:  
• Providing more specific information about each visualisation

## DETAILS

### Dependencies:

- HTML, CSS, JavaScript, Vega Lite
- Software for potential cleaning (Python / R)
- Github for version control

### Algorithms:

- potentially when using Vega Lite to create visualisations - grouping, aggregating etc.

### Specific requirements:

- readability / understandability
- laptop for VS code / Github
- no physical materials needed.

### Estimated time / cost:

- Cost: N/A
- Time: Estimated 12 days
  - 1 day: cleaning/wrangling
  - 1 to 3 days: map + bar
  - 1 to 2 days: donut + scatter
  - 2 days: stacked bar
  - 2 days: area/line chart
  - 2 days: layout and text