

# Let's explore the Victoria Fire History dataset produced by DECCA and available on the Vic Data website

In [1]:

```
# Setup

%matplotlib inline
import folium
import geopandas as gpd
import numpy as np
import seaborn as sns
from matplotlib import pyplot as plt
```

In [2]:

```
# Load the data and view first 5 rows

fire_history = gpd.read_file("ll_gda94/esrishape/whole_of_dataset/victoria/FIRE/FIRE_HISTORY.shp")
fire_history.head()
```

Out[2]:

	FIRETYPE	SEASON	FIRE_NO	NAME	START_DATE	STRTDATIT	TREAT_TYPE	
0	Burn	2021	GP-TBO-BAI-0092	Calulu - Coxes Road	2020-10-13	20201013	FUEL REDUCTION	BURN
1	Burn	2021	GP-TBO-NOW-0294	Kalimna - GLaWAC 1	2021-03-31	20210331	NaN	BURN
2	Bushfire	2021	Tambo 9	Clifton Creek - Woods Rd	2020-10-03	20201003	FIRE - NOT A PLANNED BURN ACTIVITY	BURN
3	Bushfire	2007	12	NaN	2006-12-01	20061201	FIRE - NOT A PLANNED BURN ACTIVITY	
4	Bushfire	2021	TAMBO 47	Omeo – Butchers Creek	2021-02-20	20210220	FIRE - NOT A PLANNED BURN ACTIVITY	BURN

In [3]:

```
# How many fires are there of each type?
fire_history['FIRETYPE'].value_counts()
```

Out[3]:

```
Bushfire    624820
Burn         82670
Unknown       279
Other         159
Name: FIRETYPE, dtype: int64
```

In [5]:

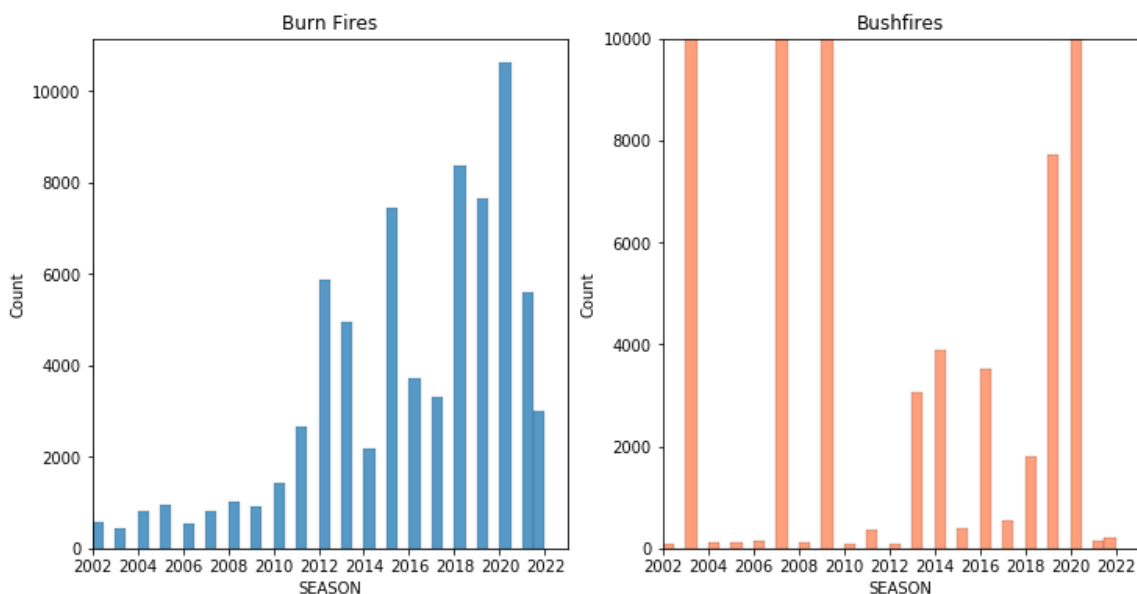
```
# There are many more bushfires than planned burns, but what about their recent
# frequency? Let's plot
# these over the last 20 years
```

```
burn_history = fire_history[fire_history['FIRETYPE'] == 'Burn']
bushfire_history = fire_history[fire_history['FIRETYPE'] == 'Bushfire']
```

```
fig, (ax1, ax2) = plt.subplots(1, 2, figsize=(12, 6))
```

```
ax1.set_title('Burn Fires')
sns.histplot(burn_history['SEASON'], label='Burn', ax=ax1, binwidth=0.5)
ax1.set_xlim(2002, 2023)
ax1.set_xticks(np.arange(2002, 2023, 2))
```

```
ax2.set_title('Bushfires')
sns.histplot(bushfire_history['SEASON'], label='Fuel', ax=ax2, binwidth=0.5, color='coral')
ax2.set_xlim(2002, 2023)
ax2.set_ylim(0, 10000)
ax2.set_xticks(np.arange(2002, 2023, 2))
plt.show()
```



**So there are many bushfires recorded in bad fire season but few**

**in other years while the number of recorded burns has been increasing**

**recently**

In [6]:

```
# Let's map some of our data. What are all the regions present?
```

```
fire_history['DISTRICTID'].value_counts()
```

Out[6]:

Hume - Ovens	34173
Hume - Upper Murray	25700
Loddon Mallee - Mallee	15209
Gippsland - Macalister	7825
Gippsland - Snowy	7472
Gippsland - Tambo	6679
Gippsland - Latrobe	3694
Barwon South West - Otways	2935
Hume - Goulburn	2505
Barwon South West - Far South West	2304
Port Phillip - Yarra	1648
Grampians - Midlands	1414
Grampians - Wimmera	676
Hume - Murrindindi	540
Loddon Mallee - Murray Goldfields	440
Port Phillip - Metropolitan	270

Name: DISTRICTID, dtype: int64

In [12]:

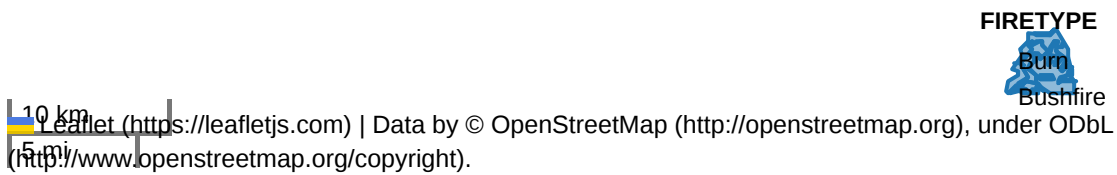
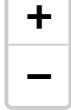
```
# Let's choose the Wimmera region of the Grampians and map the location of the different fire types in the 2022 season

grampians_fires_2022 = fire_history.query('(DISTRICTID == \'Grampians - Wimmera\') and (SEASON == 2022)')

grampians_fires_2022.explore('FIRETYPE')
```

Out[12]:

Make this Notebook Trusted to load map: File -> Trust Notebook



In [ ]: