

### Question

Which of the 10 NICC-defined geographic areas requested the most helicopters for firefighting?

### Main Agent Request

I need access to data that can help me determine which of the 10 NICC-defined geographic areas requested the most helicopters for firefighting. Specifically, I am looking for datasets that contain information on firefighting resource requests, including the type of resource (e.g., helicopter), the requesting geographic area, and the date of the request.

Utility Scripts

Search Agent Response

NIFC Wildfire Statistics

NIFC Wildfire Statistics

NOAA Wildfire Data

cannot help

cannot help

cannot help

cannot help

cannot help

### State-Level Wildfire Statistics

Yes, I can help. The provided files contain exactly the information requested. 'Wildfire\_Acres\_by\_State.csv' includes state-level data on total acreage burned and population, and 'Wildfire\_Fires\_by\_State.csv' contains the total number of fires per state. I can merge these to provide a comprehensive dataset.

#### code

```
import pandas as pd
def load_and_process_data():
    acres_file = 'Wildfire_Acres_by_State.csv'
    fires_file = 'Wildfire_Fires_by_State.csv'
    df_acres = pd.read_csv(acres_file, index_col=0)
    df_fires = pd.read_csv(fires_file, index_col=0)
    df_acres['Total Acres Burned'] = df_acres['Total Acres Burned'].fillna(0)
    merged_df = pd.merge(df_acres, df_fires, on='State')
    return merged_df
```

#### Data Explanation

The processed data is a single table containing aggregated wildfire statistics for each US state. The columns include 'State', 'Total Acres Burned' (the total area burned by wildfires), 'Population' (the state's population), and 'Total Fires' (the total number of wildfire incidents).

#### Data Sample

State	Total Acres Burned	Population	Total Fires	Alabama	20978.0	5157699			
1525\n1	Alaska	667075.0	740133	377\n2	Arizona	282989.0			
7582384	2191\n3	Arkansas	25444.0	3088354	1219\n4	California	1081144.0	39431263	8316\

#### Suggested Steps

- 1) Load 'Wildfire\_Acres\_by\_State.csv' and 'Wildfire\_Fires\_by\_State.csv' into pandas DataFrames.
- 2) When loading, specify `index\_col=0` to correctly handle the unnamed index column in the source files.
- 3) Clean the acres data by filling the missing value for 'Total Acres Burned' for 'District of Columbia' with 0.
- 4) Merge the two DataFrames on the 'State' column to create a single, unified dataset.

### US General Geographic and Demographic Data

I can fulfill the second part of your request. I have a dataset with the most recent population estimates for each US state. However, I do not have a dataset containing information about individual wildfires and their acreage.

#### code

```
import pandas as pd
def load_population_data():
    file_path = '/NST-EST2024-POP.xlsx'
    df_pop = pd.read_excel(
        file_path,
        skiprows=3,
        skipfooter=1, # Skip the note at the bottom
        header=None
    )
    df_pop.columns = ['Geographic_Area', 'April_2020_Base', 'Pop_2020',
    'Pop_2021', 'Pop_2022', 'Pop_2023', 'Pop_2024']
    df_pop = df_pop[df_pop['Geographic_Area'].str.startswith('.', na=False)]
    df_pop['Geographic_Area'] = df_pop['Geographic_Area'].str.strip('.')
    df_pop.rename(columns={'Geographic_Area': 'state'}, inplace=True)
    df_recent_pop = df_pop[['state', 'Pop_2024']].copy()
    df_recent_pop['Pop_2024'] = df_recent_pop['Pop_2024'].astype(int)
    return df_recent_pop
```

#### Data Explanation

This dataset contains the annual resident population estimates for US states from April 1, 2020, to July 1, 2024. The provided code extracts the state name and the most recent population estimate for 2024.

#### Data Sample

state	Pop_2024	Alabama	5157699\n1	Alaska	740133\n2	Arizona
7582384\n3	Arkansas	3088354\n4	California	39431263		

#### Suggested Libraries

pandas, openpyxl

#### Suggested Steps

- 1) The Excel file must be loaded by skipping the first 3 rows which act as a header.
- 2) The footer row containing notes should be skipped.
- 3) Column names need to be assigned manually as they are spread across multiple rows in the original file.
- 4) Rows corresponding to national or regional summaries (e.g., 'United States', 'Northeast') must be filtered out.
- 5) The state name column contains a leading dot ('.') which must be removed for clean merging.
- 6) Select the state column and the column for the most recent year's population (2024).

### Wildfire Environmental and Operational Data

Yes, I can help. The file `cleaned\_helicopter\_requests\_by\_region.csv` contains the exact information required: the total number of helicopter requests aggregated by NICC-defined geographic areas.

#### code

```
import pandas as pd

def get_helicopter_requests_by_region():
    file_path = 'cleaned_helicopter_requests_by_region.csv'
    df = pd.read_csv(file_path, index_col=0)
    df_sorted = df.sort_values(by='Total Helicopter Requests', ascending=False)
    return df_sorted
```

#### Data Explanation

This dataset provides a summary of the total number of helicopter requests for firefighting, aggregated by geographic area. It contains two columns: 'Region', which lists the name of the NICC-defined geographic area, and 'Total Helicopter Requests', which is the count of requests for that region.

#### Data Sample

Region	Total Helicopter Requests	Great Basin Area	232\n6
Northwest Area	185\n5	Northern Rockies Area	112\n9
Southern California Area	89\n4	Northern California Area	81\n10
Southwest Area	65\n8	Southern Area	49\n7
Rocky Mountain Area	39\n0	Alaska Area	19\n1
Eastern Area	9\		

#### Suggested Steps

- 1) Load the CSV file using the pandas library.
- 2) Set the `index\_col=0` parameter during loading to correctly handle the unnamed index column in the file.
- 3) The data is already cleaned and aggregated, so no further preprocessing is needed.
- 4) Sort the DataFrame by 'Total Helicopter Requests' to easily identify the area with the most requests.