In [2]:
```
import pandas as pd
cities=pd.read_csv(r"D:\PROJECTS\Datasets_mini_veruthe\california_cities.csv")
```

In [3]:
```
print(cities.head())
```

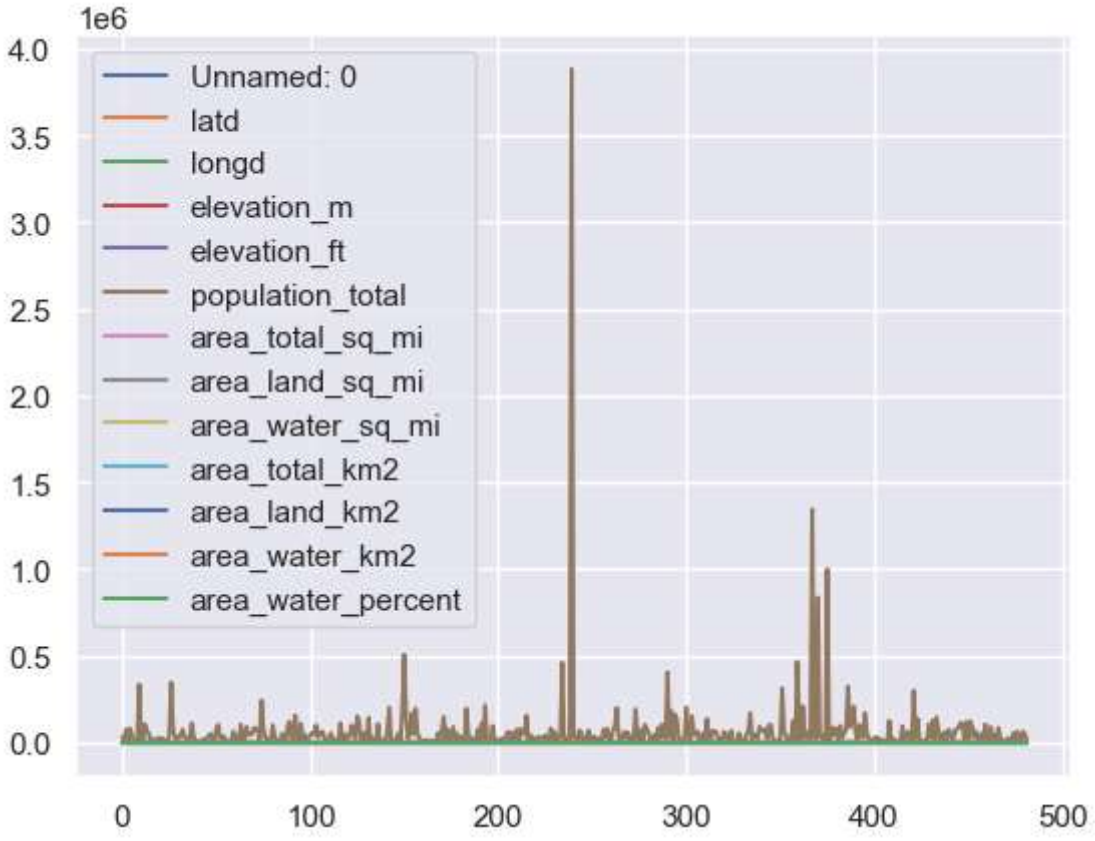
```
   Unnamed: 0         city       latd       longd  elevation_m  elevation_ft  \
0           0     Adelanto  34.576111 -117.432778        875.0        2871.0
1           1  AgouraHills  34.153333 -118.761667        281.0         922.0
2           2      Alameda  37.756111 -122.274444          NaN          33.0
3           3       Albany  37.886944 -122.297778          NaN          43.0
4           4     Alhambra  34.081944 -118.135000        150.0         492.0

   population_total  area_total_sq_mi  area_land_sq_mi  area_water_sq_mi  \
0             31765            56.027           56.009             0.018
1             20330             7.822            7.793             0.029
2             75467            22.960           10.611            12.349
3             18969             5.465            1.788             3.677
4             83089             7.632            7.631             0.001

   area_total_km2  area_land_km2  area_water_km2  area_water_percent
0         145.107        145.062           0.046                0.03
1          20.260         20.184           0.076                0.37
2          59.465         27.482          31.983               53.79
3          14.155          4.632           9.524               67.28
4          19.766         19.763           0.003                0.01
```

In [5]:
```
latitude,longitude = cities["latd"],cities["longd"]
population,area=cities["population_total"],cities["area_total_km2"]
```

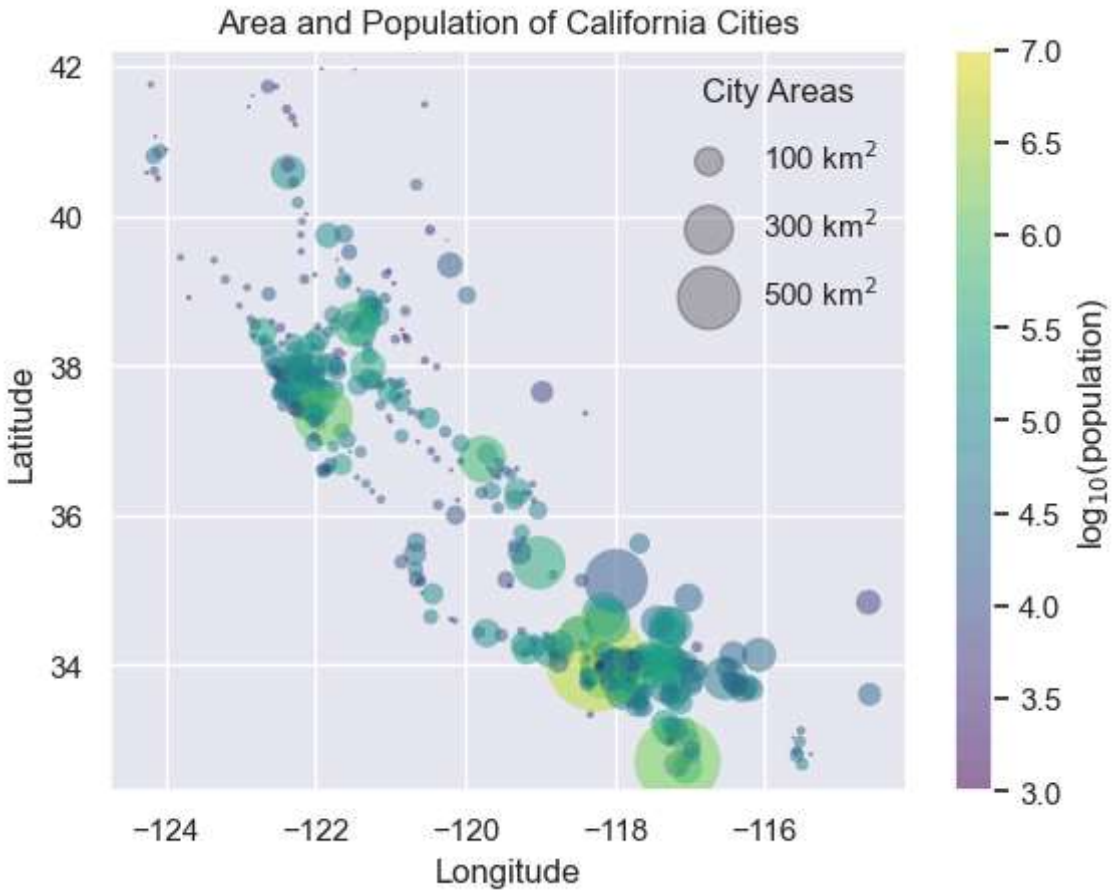
In [11]:
```
import numpy as np
import matplotlib.pyplot as plt
import seaborn
seaborn.set()
cities.plot()
plt.show()
```



In [10]:
```
plt.scatter(longitude, latitude, label=None, c=np.log10(population),
            cmap='viridis', s=area, linewidth=0, alpha=0.5)
plt.axis('equal')
plt.xlabel('Longitude')
plt.ylabel('Latitude')  # Corrected ylabel
plt.colorbar(label='log$_{10}$(population)')
plt.clim(3, 7)

# Create a legend, plot empty lists with the desired size and label
for area_size in [100, 300, 500]:  # Changed loop variable to avoid conflict
    plt.scatter([], [], c='k', alpha=0.3, s=area_size, label=str(area_size) + ' km$
plt.legend(scatterpoints=1, frameon=False, labelspacing=1, title='City Areas')

# Title and show plot
plt.title("Area and Population of California Cities")
plt.show()
```


Area and Population of California Cities
City Areas
100 km²
300 km²
500 km²
Latitude
Longitude
log₁₀(population)
42
40
38
36
34
−124
−122
−120
−118
−116
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0

In [ ]: