

UFO Exploratory Research

- Noah Jones
- Evan Pickell
- Hannah Kim
- Naomi Golin
- Zhiyu Yao
- Dian Chen

UCLA Statistics

Introduction to the Data

The data analyzed was a CSV file obtained from the National UFO Reporting Center. It contains 88125 observations and 12 columns.

Hypotheses and Statistical Test

- Null Hypotheses:**
- 1. Time: UFO sightings as a percentage of the total population of the United States has not changed over time
 - 2. Place: UFO sightings as a percentage of the total population of United States is the same all over the United States/among all the states.
 - 3. Interaction: UFO sightings as a percentage of the total population of the United States is not impacted by the interaction between time and place.

- Alternative:**
- 1. Time: UFO sightings as a percentage of the total population of the United States has changed over time.
 - 2. Place: UFO sightings as a percentage of the total population of United States differs among the 50 states.
 - 3. Interaction: UFO sightings as a percentage of the total population of the United States is different when considering the interaction between time and place.

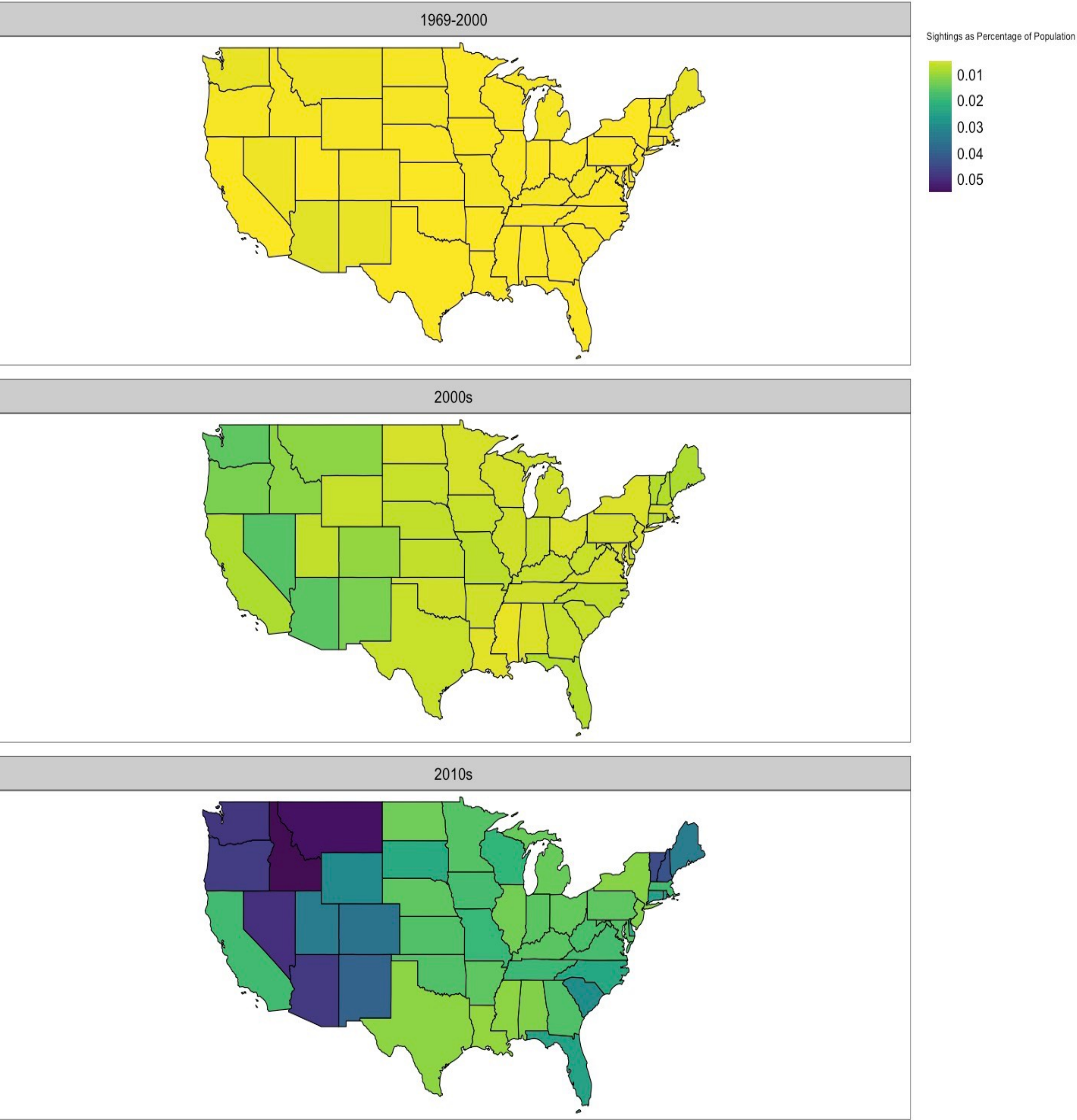
Statistical Test:
Linear Regression, ANOVA, and Chi-Square Goodness of Fit Test.

Other Background Info

- Mail and telephone for report were the only methods used until 1994.
- Internet report were added after 1994.

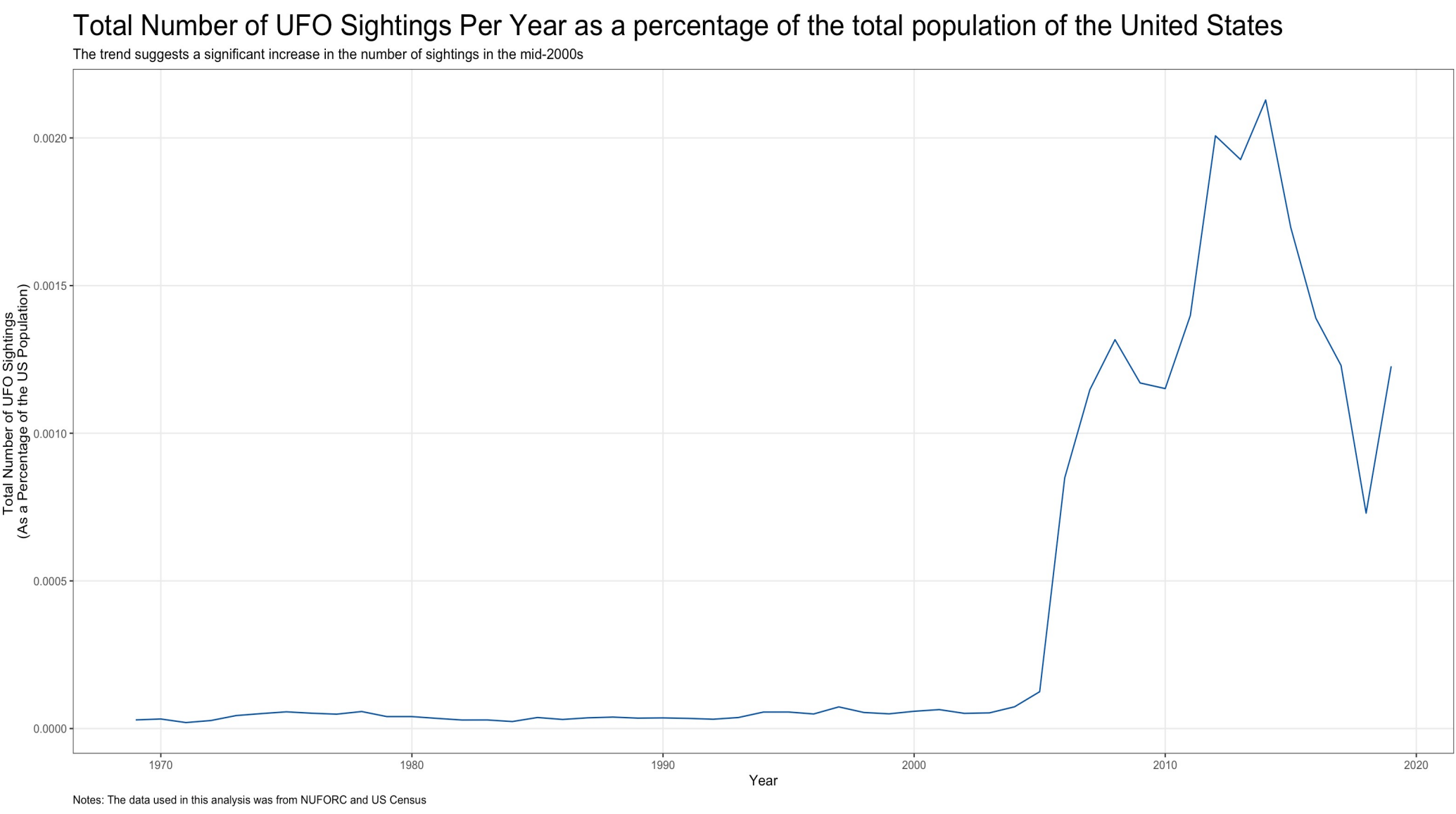
UFO sightings as a percentage of the total population of the mainland United States has increased over time with certain regions having higher sighting rates.

UFO Sightings as Percentage of the Total US Population

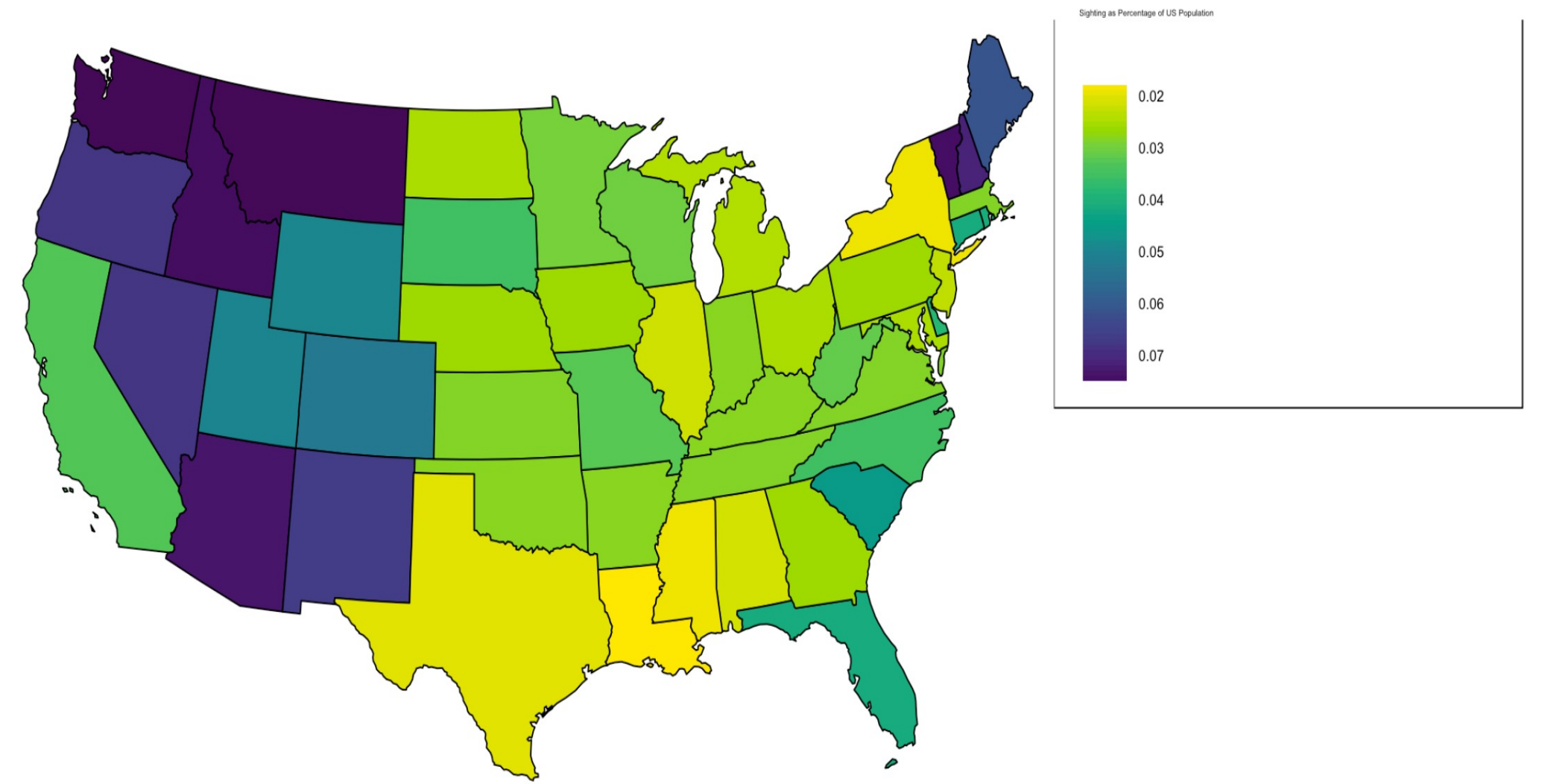


The graphs report the UFO sightings in each state over the time interval of 1969-2000, 2000s, and 2010s.

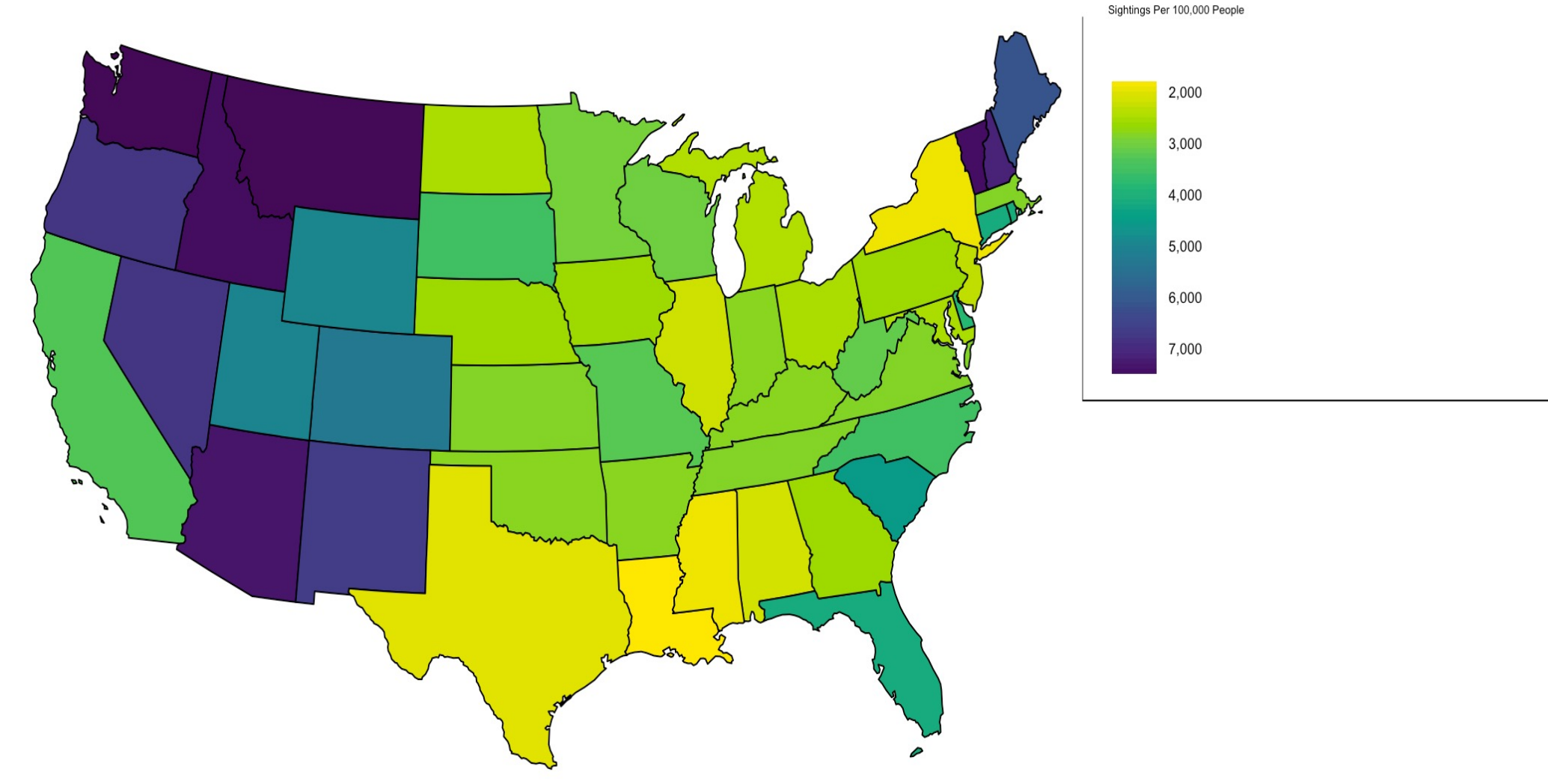
Visualizations for the Hypotheses



UFO Sightings as Percentage of the Total US Population (%)



Number UFO Sightings Per 100,000 People By State



Results

Since the p-values for each hypothesis are all less than 0.05, we have enough evidence to reject the null hypotheses. Our evidence suggests that UFO sightings as a percentage of the total population of the United States mainland has increased over time. Its also suggests that certain geographic regions are more likely to sight UFOs. These trends are also impacted by the interaction between the year and place of the sighting.