Impact of Wildfire Smoke on National Park Tourism in California

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Key Questions

- Does wildfire smoke influence visitor counts in California's national parks?
- Which parks show resilience or vulnerability to smoke events?
- Can we predict future trends in visitor counts under increasing smoke conditions?

Data Overview

Wildfire Data: Combined Wildland Fire Datasets, US Geological Survey (1964–2020)

Tourism Data: National Park Service Visitor Use Statistics (Focused on 10 national parks within 650 miles from Palmdale, CA)

Methodology

Data Collection

- Wildfire Data
- National Park Visitor Statistics

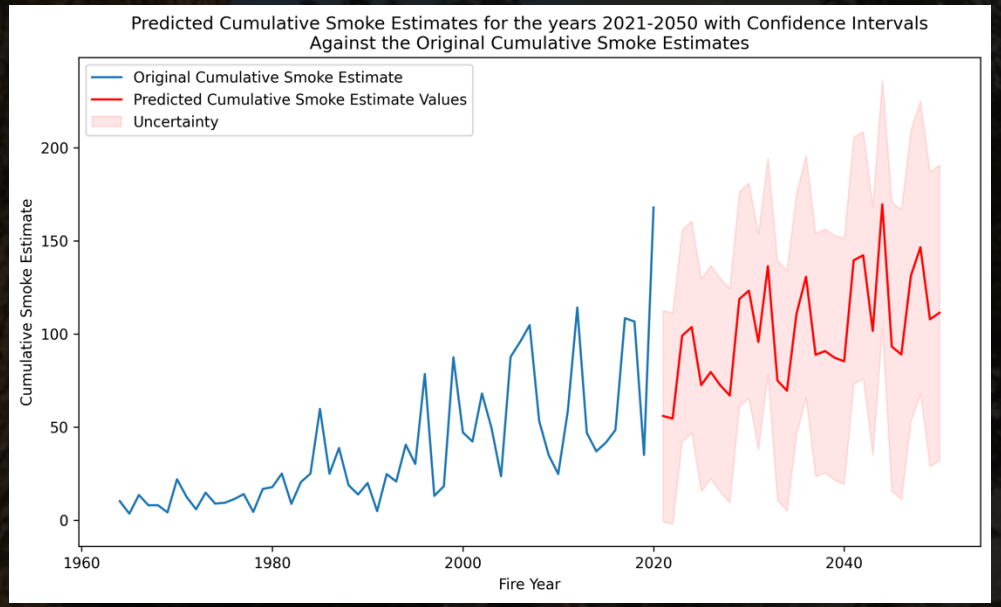
Data Analysis

- Smoke Estimation
- Visitor trend analysis

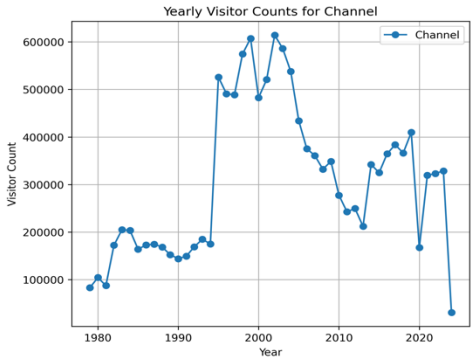
Predictive Modeling

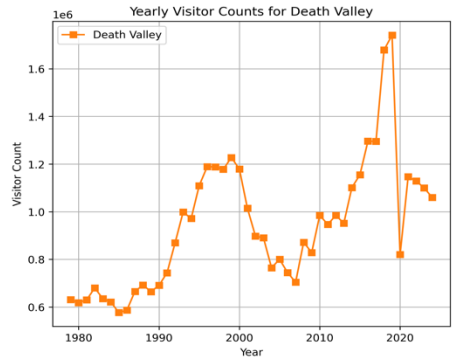
- Forecasting smoke estimate
- Visitor count prediction

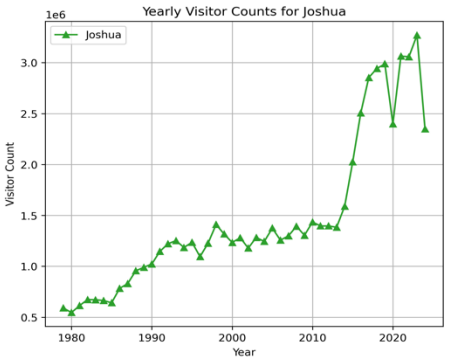
Smoke and Visitor Trends

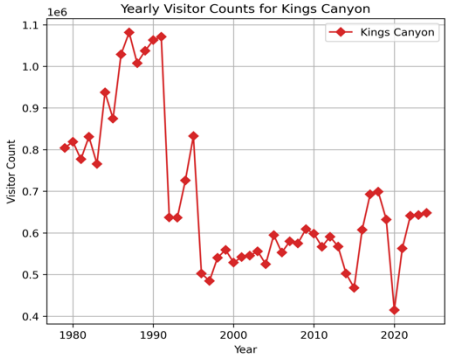


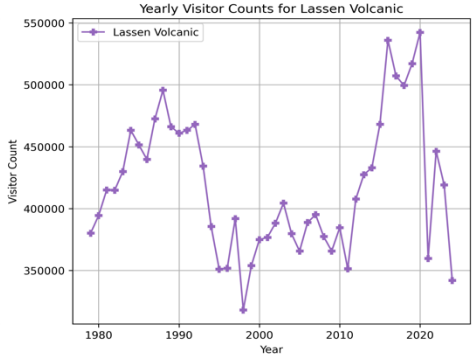
- Visitor counts remained robust during high-smoke periods for some parks.
- Parks like Kings Canyon, Redwood, Channel showed notable dips during intense wildfire years

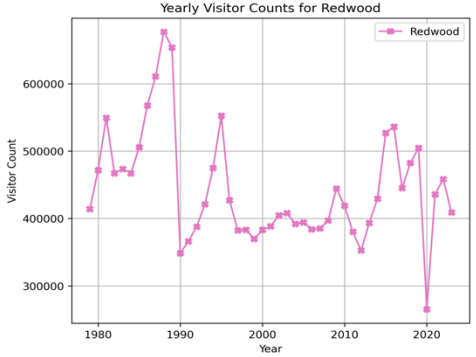


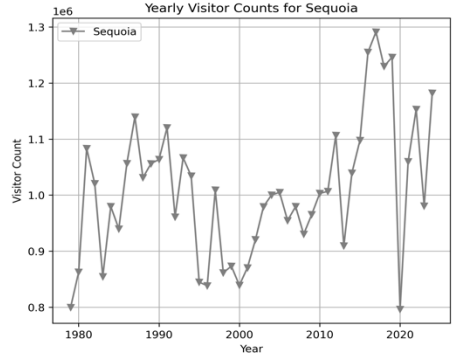


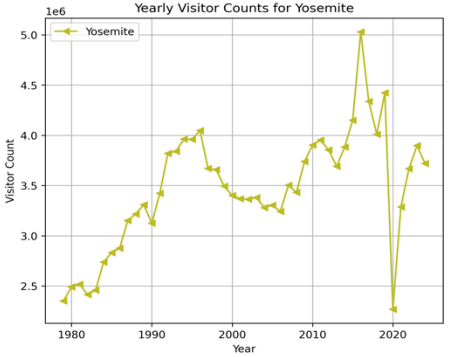


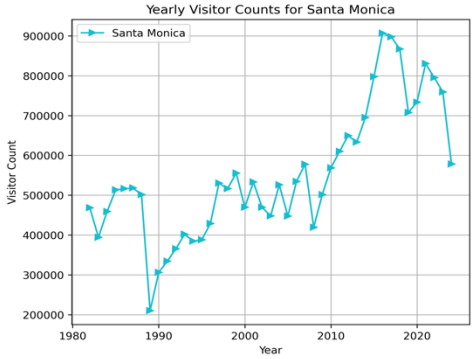




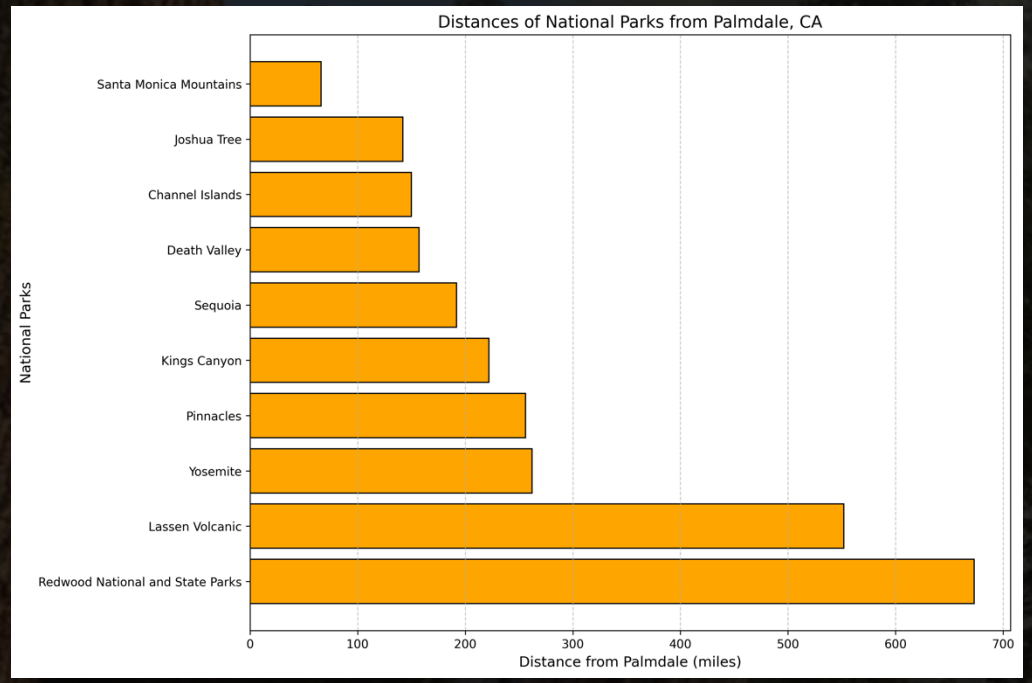


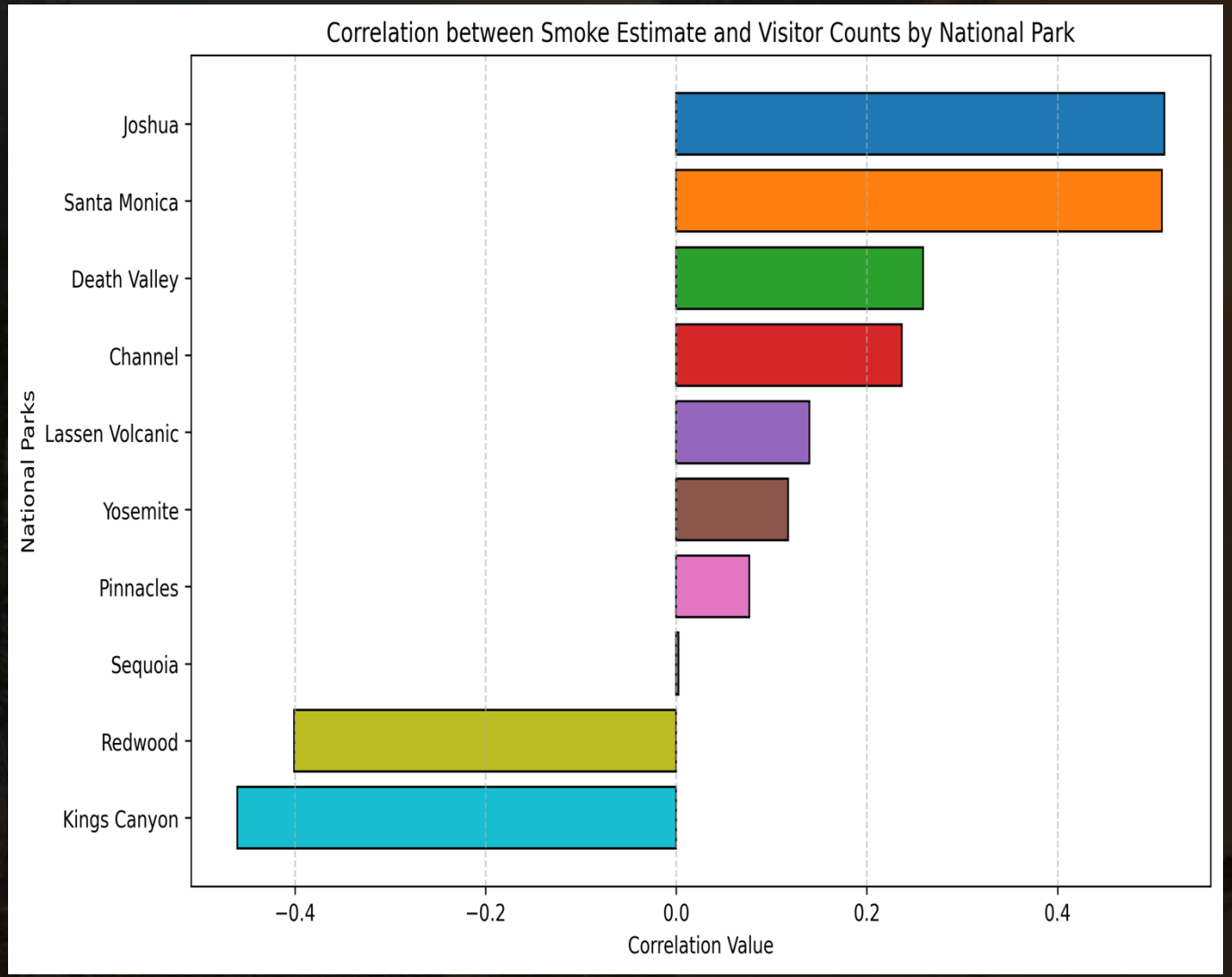






Smoke Impact on Visitor Counts

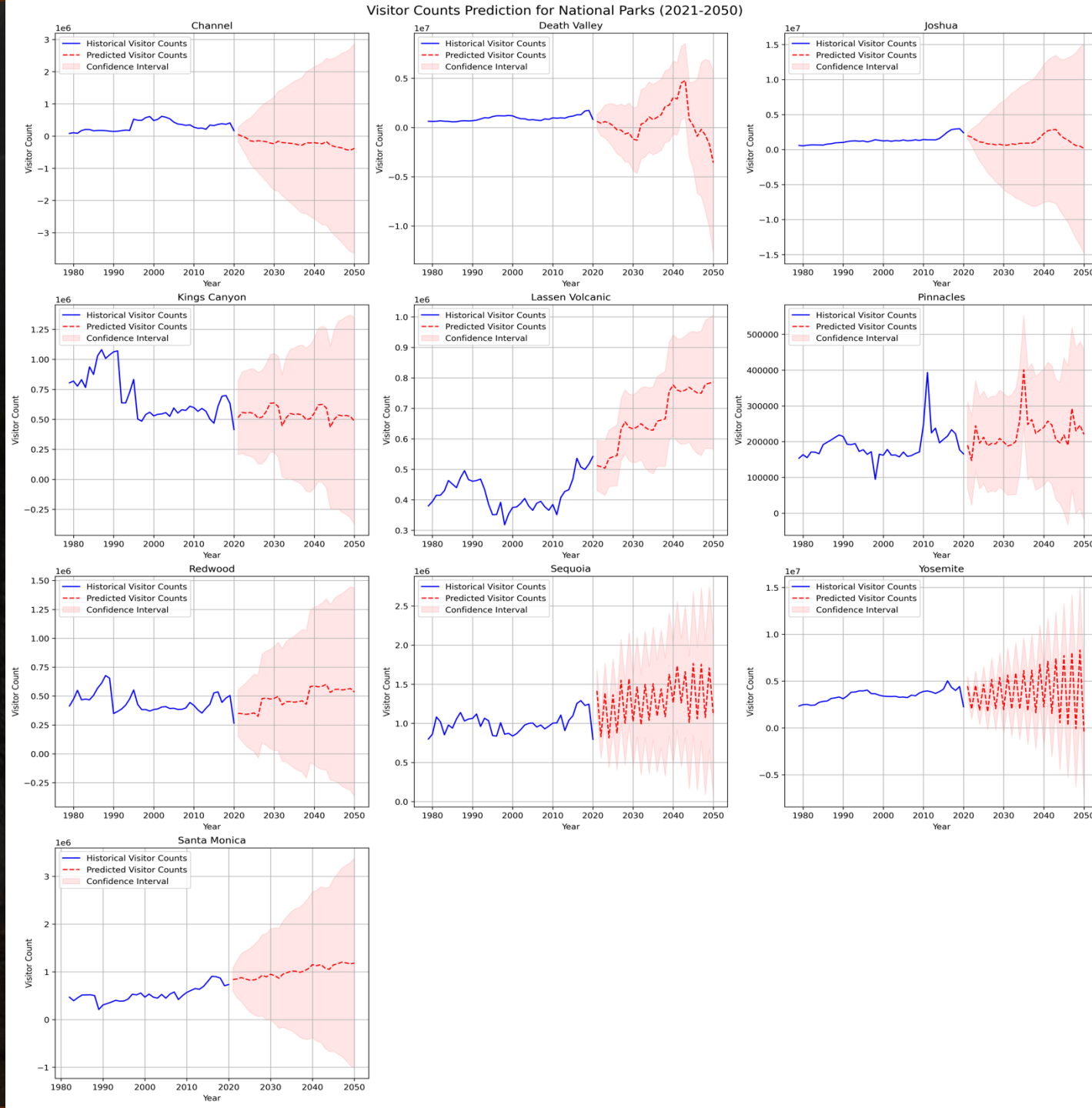




- Positive correlations for Joshua Tree and Santa Monica (Closest to Palmdale)
- Negative correlation for Kings Canyon and Redwood NP (Far away)

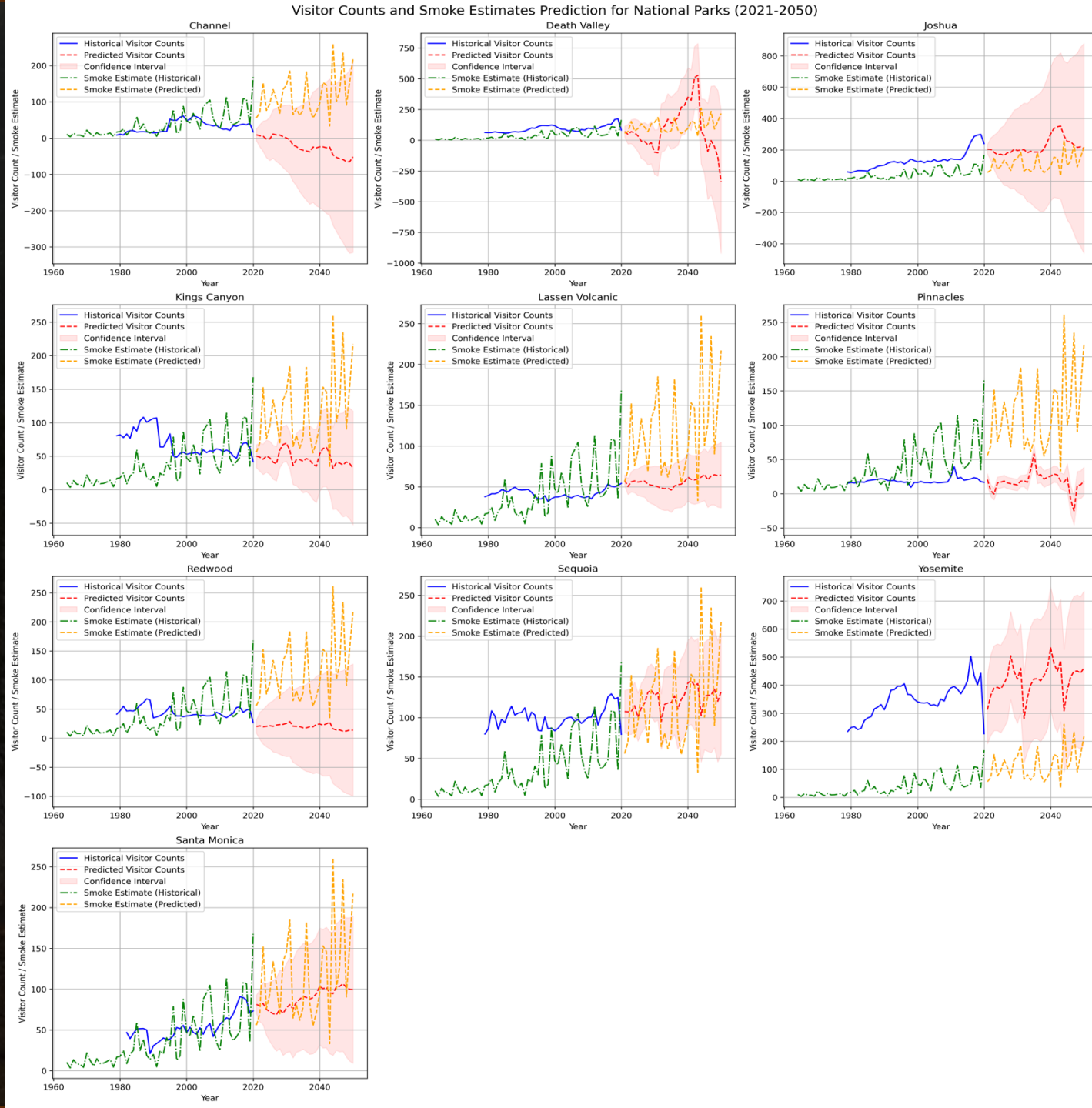
Visitor Predictions

- Highlighted resilience for Joshua Tree and Santa Monica
- Potential declines for Death Valley and Channel



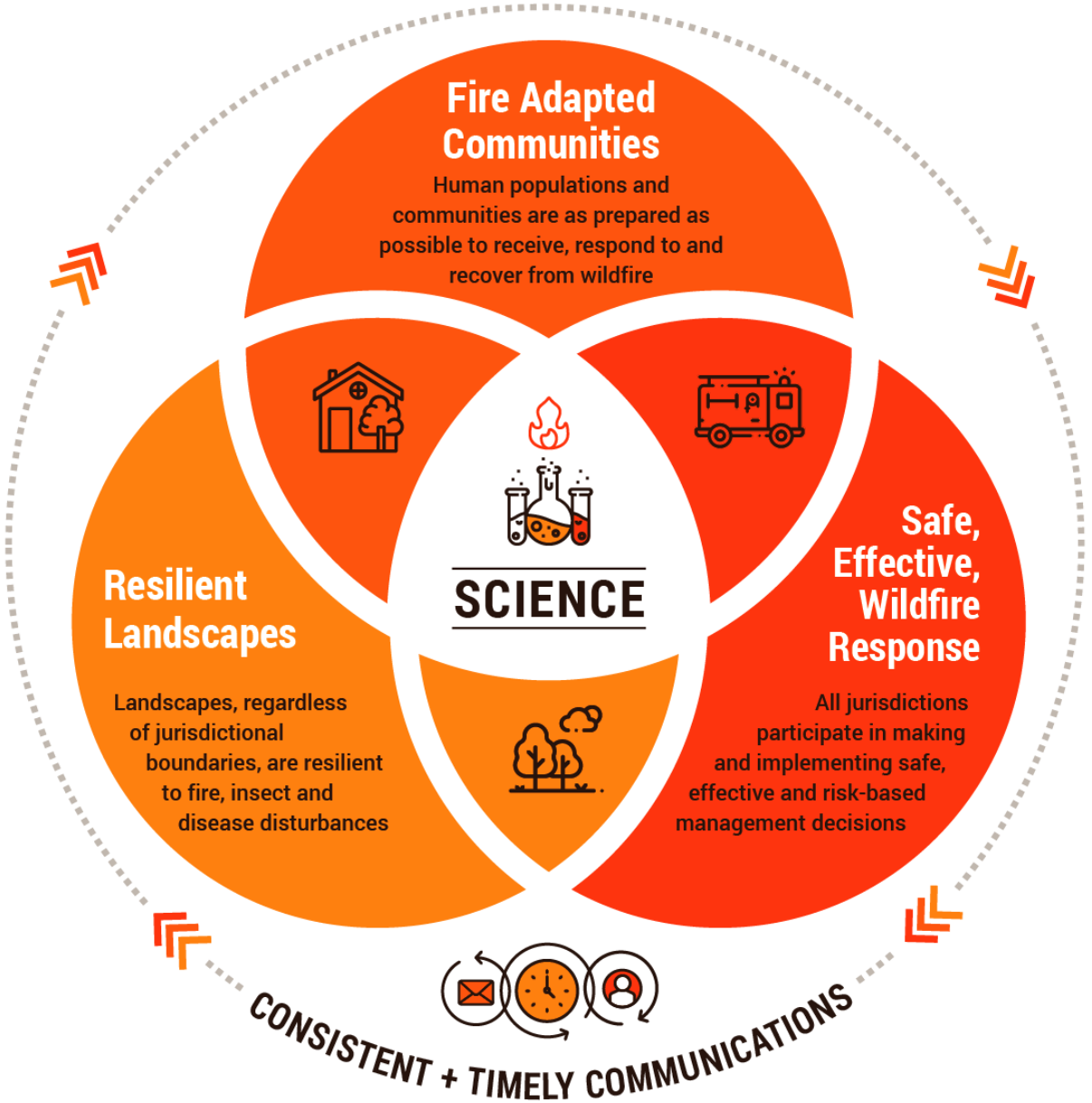
Future Smoke Scenarios

- Smoke estimates show an increasing trend through 2050
- Need for mitigation strategies to protect park visitation



Policy Implications

- Insights can help park managers prepare for smoke-related disruptions
- Strategies: Visitor engagement during high-smoke periods, air quality monitoring
- Economic planning for at-risk parks like Kings Canyon.



Key Takeaways

- Tourism is resilient in some parks but vulnerable in others

- Next Steps: Collaboration with policymakers and park management for data-driven solutions.