

# Did more visitors start sleeping in National Parks after the 2020 pandemic?



## Background

The National Park Service (NPS) keeps a monthly record of overnight visits in each park, divided into 3 types:



**Backcountry Camping:** sleeping in remote areas of wilderness, away from established campgrounds and often requires backpacking



**Tent Camping:** sleeping in a formally established campground which usually allow vehicle access, provide modern amenities, and require a fee



**RV Camping:** sleeping in a recreation vehicle (a motorhome or travel trailer), parking overnight at campgrounds equipped with RV hookups

## Methods

Between the two 4-year periods (2016-2020 and 2020-2024), Welch's t-test was used to compare:

Changes in overnight visitation over time were investigated by analyzing the fraction of backcountry, tent, and RV campers out of total overnight visits before versus after the 2020 pandemic.

Visitation data was aggregated annually to address difference in visitation seasonality between parks.

1. Total overnight visits (TOV) over time

Park	t-value	p-value
BIBE	6.42	0.0007
GLAC	1.48	0.23
GRSM	-1.38	0.24
JOTR	1.55	0.21
ROMO	4.32	0.02
SHEN	1.39	0.24

Table 1: T-Test of Total Overnight Visits before and after 2020

2. Fraction of overnight visits out of total visits over time

Park	t-value	p-value
BIBE	6.05	0.004
GLAC	1.28	0.28
GRSM	0.04	0.97
JOTR	3.04	0.03
ROMO	3.72	0.02
SHEN	2.69	0.05

Table 2: T-Test of Fraction of Overnight Visits out of total visits before and after 2020

3. Relative amounts of overnight visit types over time

Camping Type	Value	BIBE	GLAC	GRSM	JOTR	ROMO	SHEN
Backcountry	t-value	-2.451	-1.0897	2.0987	3.1183	-1.9952	-4.8958
	p-value	0.079	0.3548	0.1214	0.03133	0.1394	0.009236
Tent	t-value	1.605	1.673	-0.77243	0.47908	1.0241	-1.7771
	p-value	0.2043	0.1675	0.4819	0.6624	0.379	0.1354
RV	t-value	-2.1192	0.46132	-4.2046	-3.1388	0.049022	-4.4798
	p-value	0.09163	0.6739	0.01553	0.02655	0.9629	0.005571

Table 3: T-Test of relative amounts of overnight visitation types before and after 2020

## It depends on the park.

### Glacier NP (GLAC)

- No significant change in TOV, % overnight visits, or between types

### Joshua Tree NP (JOTR)

- No significant change in TOV
- Significant decrease in % overnight visits out of total visits since 2020
- Relative decrease in backcountry camper and increase in RV campers

### Rocky Mountain NP (ROMO)

- Significant decrease in TOV
- Significant decrease in % of overnight visits out of total visits
- No change in relative amounts of overnight visitation types

### Big Bend NP (BIBE)

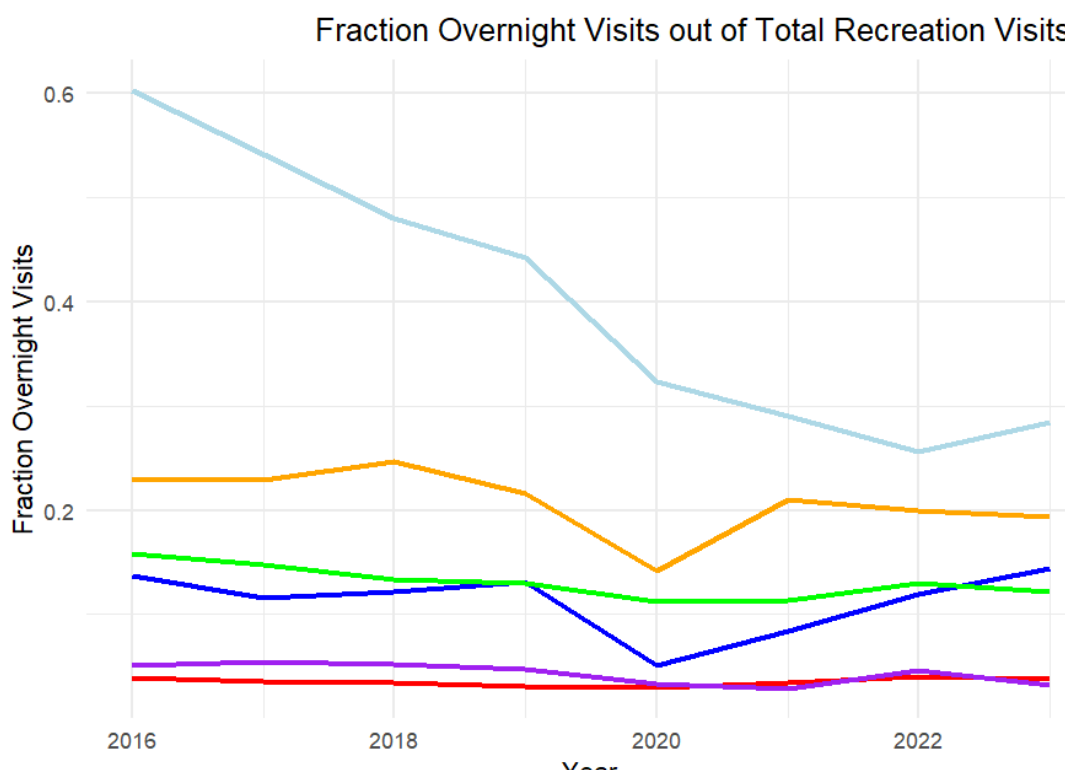
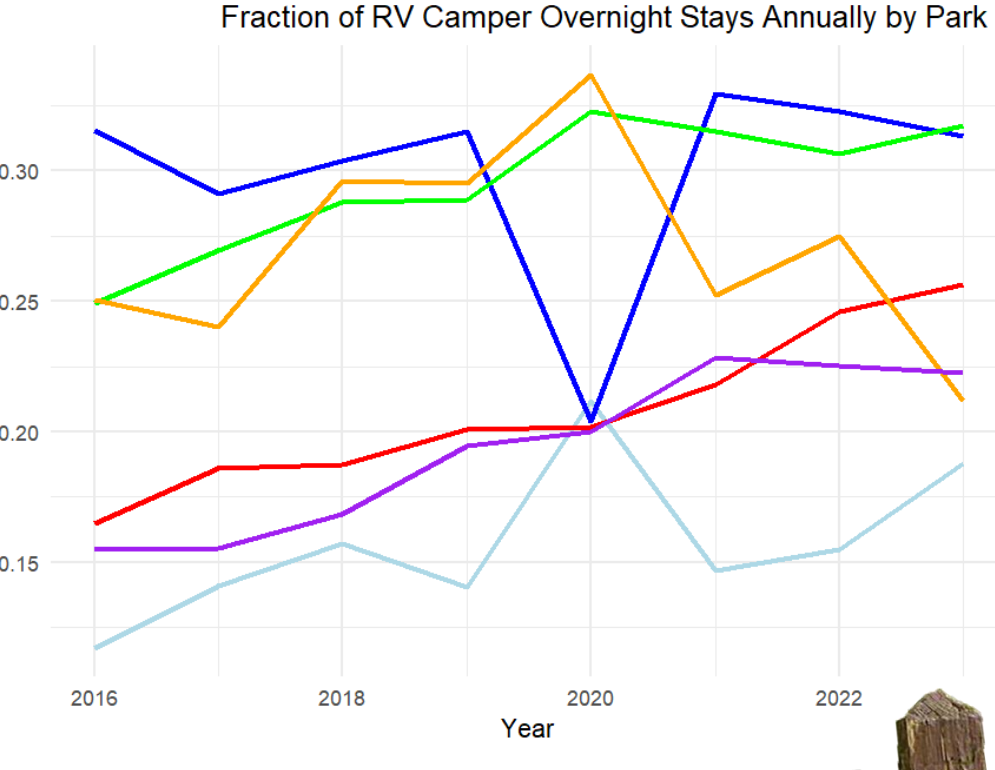
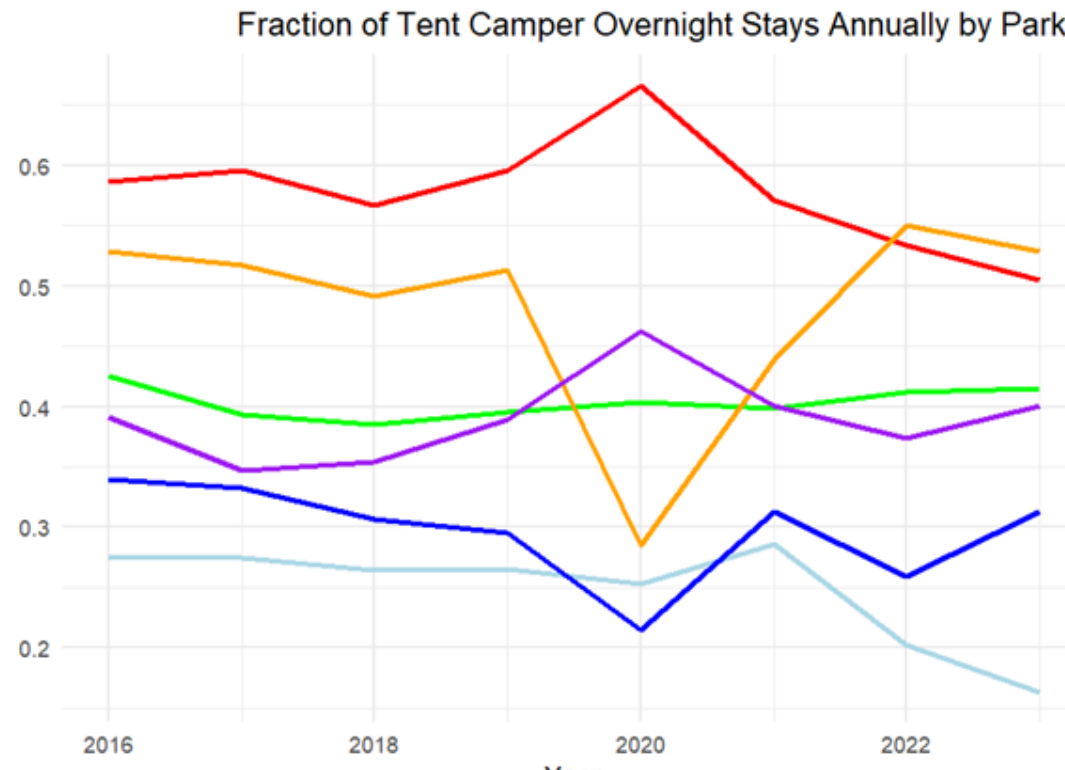
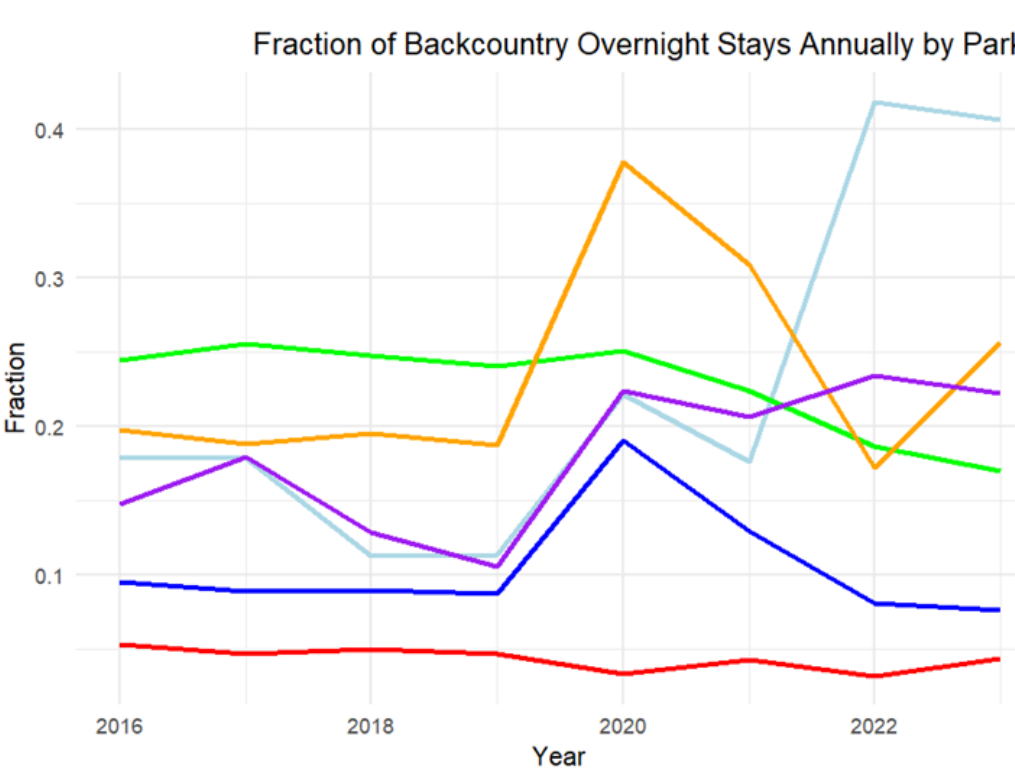
- Significant decrease in TOV
- Significant decrease % overnight visits out of total visits since 2020
- No change in relative amounts of overnight visitation types

### Shenandoah NP (SHEN)

- No significant change in TOV
- No significant change in % overnight visits out of total visits since 2020
- Significant increase in relative amounts of backcountry campers and RV campers

### Great Smoky Mountains NP (GRSM)

- No significant change in TOV
- No significant change in % of overnight visitation
- Significant increase in relative amount of RV campers



## Conclusions

- Less people been sleeping in BIBE and ROMO.
- The relative amounts of visits which involve sleeping in a park has become less common in JOTR, ROMO, and BIBE.
- RV camping is growing in dominance in JOTR, GRSM, and SHEN