

282 Lightning Occurrence in the Six Most-visited U.S. National Parks

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MOTIVATION

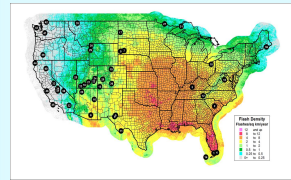
- 330,000,000 visitors to National Park facilities in 2017
- Natural features are the core destinations at National Parks:
 - Mountains, canyons, waterfalls, geothermal basins, lakes, and rivers.
- Visits are most frequent during daylight and summer

GOAL

- Use National Lightning Detection Network (NLDN) data to identify when, where, and how often lightning occurs within National Parks
- Assist understanding of the lightning risk to visitors

RANKING OF NATIONAL PARKS BY FLASH DENSITY

NLDN cloud-to-ground flash density overlaid with the ranking by CG flash density of the 46 CONUS national parks larger than 100 km²

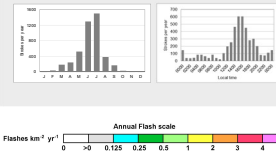
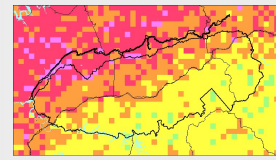


CONCLUSIONS

- ◇ Most National Parks are in Western states where lightning is less frequent
- ◇ Lightning in the six most-visited parks is mainly in the afternoon, from June to August
- ◇ Each park has its own local distribution of lightning relative to topography
- ◇ Deaths and injuries are in prominent exposed locations with large concentrations of people, and not always where lightning is most frequent

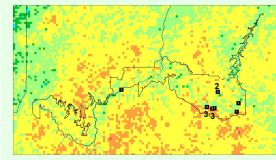
GREAT SMOKY MOUNTAINS

11,368,893 visitors in 2017



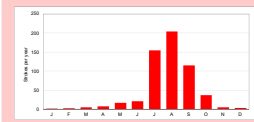
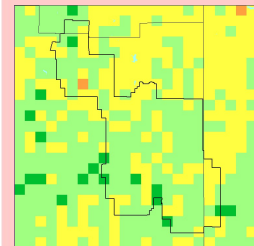
GRAND CANYON

6,254,238 visitors in 2017



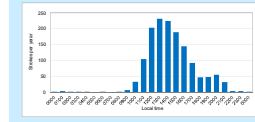
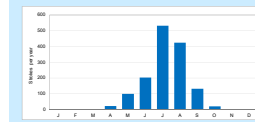
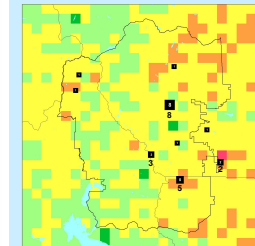
ZION

4,504,812 visitors in 2017



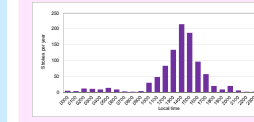
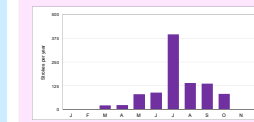
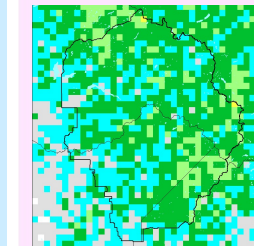
ROCKY MOUNTAIN

4,437,215 visitors in 2017



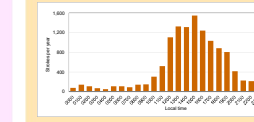
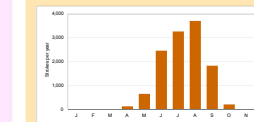
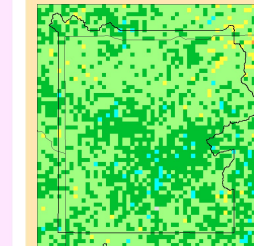
YOSEMITE

4,366,890 visitors in 2017



YELLOWSTONE

4,116,524 visitors in 2017



KNOWN LIGHTNING CASUALTIES

- 51 casualty events, including:
 - 21 deaths
 - 107 injuries
- Many are in Rocky Mountain and Grand Canyon
- Most often at:
 - Viewpoints and overlooks
 - Open parking areas at high altitudes
 - Popular climbing peaks

