High Tide Flooding Data Quality Analysis - pacific_islands

Analysis generated on: 2025-02-10 13:56:47

Overview

Analysis of high tide flooding data from 1920 to 2024.

Key Statistics

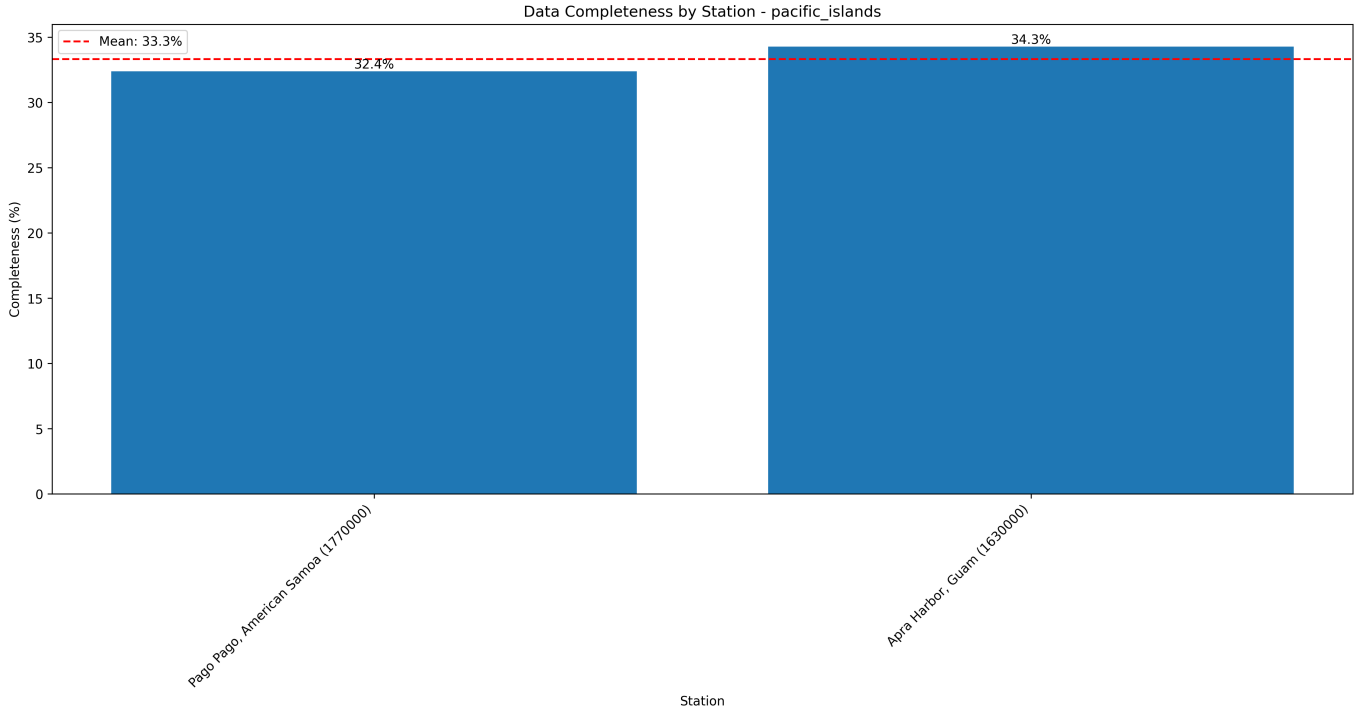
- Total records analyzed: 210
- Average flood days per year (excluding missing data): 3.07
- Overall data completeness: 33.3%

Monitoring Stations

Station ID	Name	Location	Sub-Region	Data Completeness
1630000	Apra Harbor, Guam	13.44°N, 144.66°W	Guam	34.3%
1631428	Pago Bay, Guam	13.43°N, 144.80°W	Guam	0.0%
1632200	Saipan, Northern Mariana Islands	15.22°N, 145.74°W	Northern Mariana Islands	0.0%
1770000	Pago Pago, American Samoa	-14.28°N, 170.69°W	American Samoa	32.4%

Data Quality Analysis

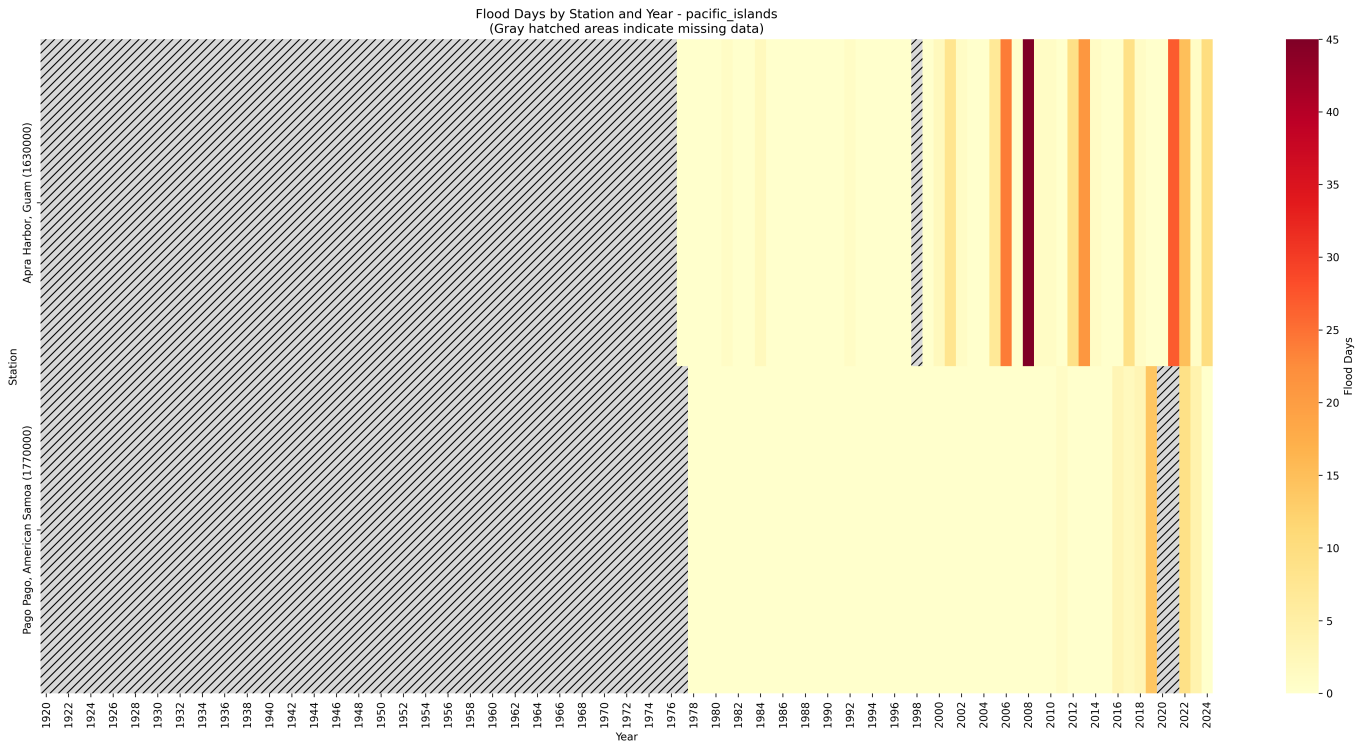
Data Completeness by Station



This visualization shows the percentage of days with valid data for each station:

- Stations are ordered by completeness percentage
- The red line indicates the regional mean completeness
- Regional mean completeness: 33.3%

Flood Days Distribution

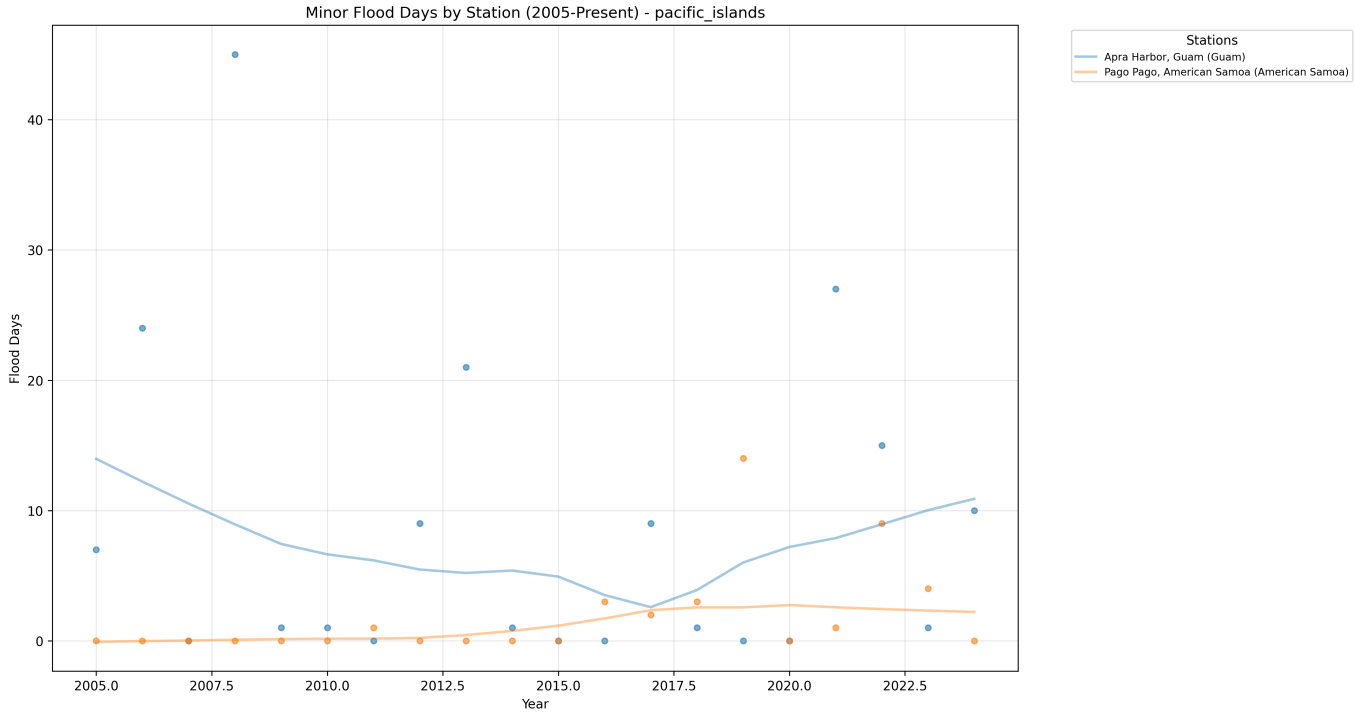


This heatmap shows the distribution of flood days across stations and years:

- Color intensity indicates number of flood days
- Gray hatched areas indicate missing data (>180 days missing in that year)

- White indicates zero flood days with complete data

Recent Flooding Trends (2005-Present)



This plot shows the trend in minor flood days for each station since 2005:

- Each line represents a different monitoring station
- Points indicate actual measurements
- Gaps in lines indicate missing data

Key Findings

Most Complete Records

- Apra Harbor, Guam (Guam, Station 1630000): 34.3% complete
- Pago Pago, American Samoa (American Samoa, Station 1770000): 32.4% complete

Highest Flooding Activity

- Apra Harbor, Guam (Guam, Station 1630000): 4.97 flood days per year
- Pago Pago, American Samoa (American Samoa, Station 1770000): 1.06 flood days per year