High Tide Flooding Data Quality Analysis - virgin_islands

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Overview

Analysis of high tide flooding data from 1920 to 2024.

Key Statistics

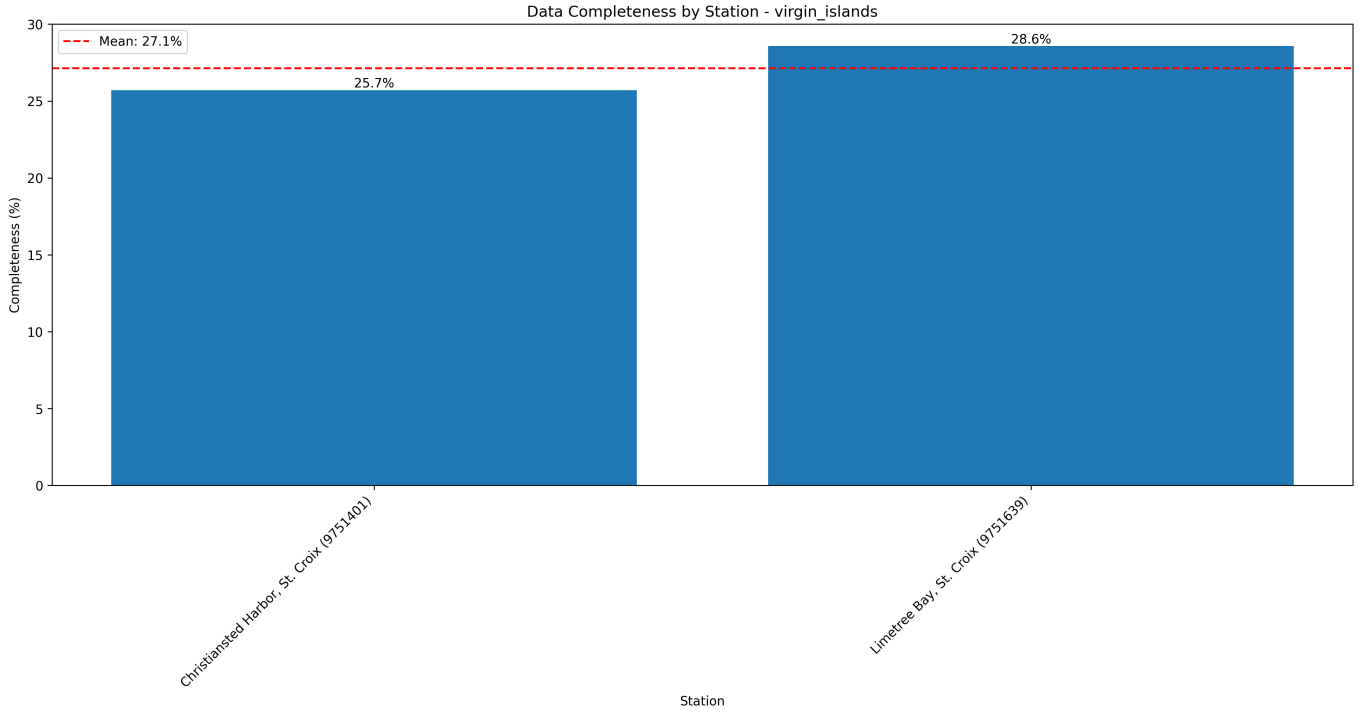
- Total records analyzed: 210
- Average flood days per year (excluding missing data): 0.05
- Overall data completeness: 27.1%

Monitoring Stations

Station ID	Name	Location	Sub-Region	Data Completeness
9751309	Water Bay, St. Thomas	18.32°N, 64.86°W	St. Thomas	0.0%
9751364	Charlotte Amalie, St. Thomas	18.34°N, 64.92°W	St. Thomas	0.0%
9751381	Lameshur Bay, St. John	18.32°N, 64.72°W	St. John	0.0%
9751401	Christiansted Harbor, St. Croix	17.75°N, 64.70°W	St. Croix	25.7%
9751639	Limetree Bay, St. Croix	17.69°N, 64.75°W	St. Croix	28.6%

Data Quality Analysis

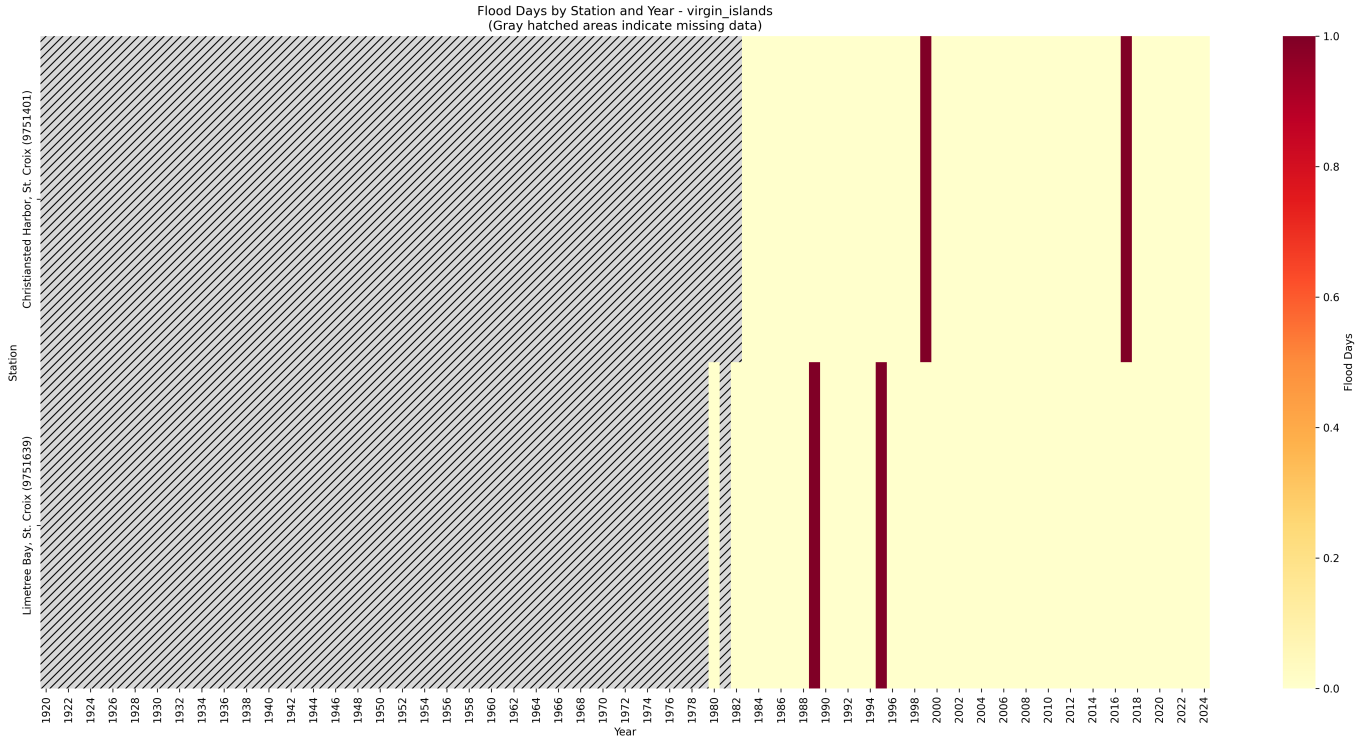
Data Completeness by Station



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: 27.1%

Flood Days Distribution

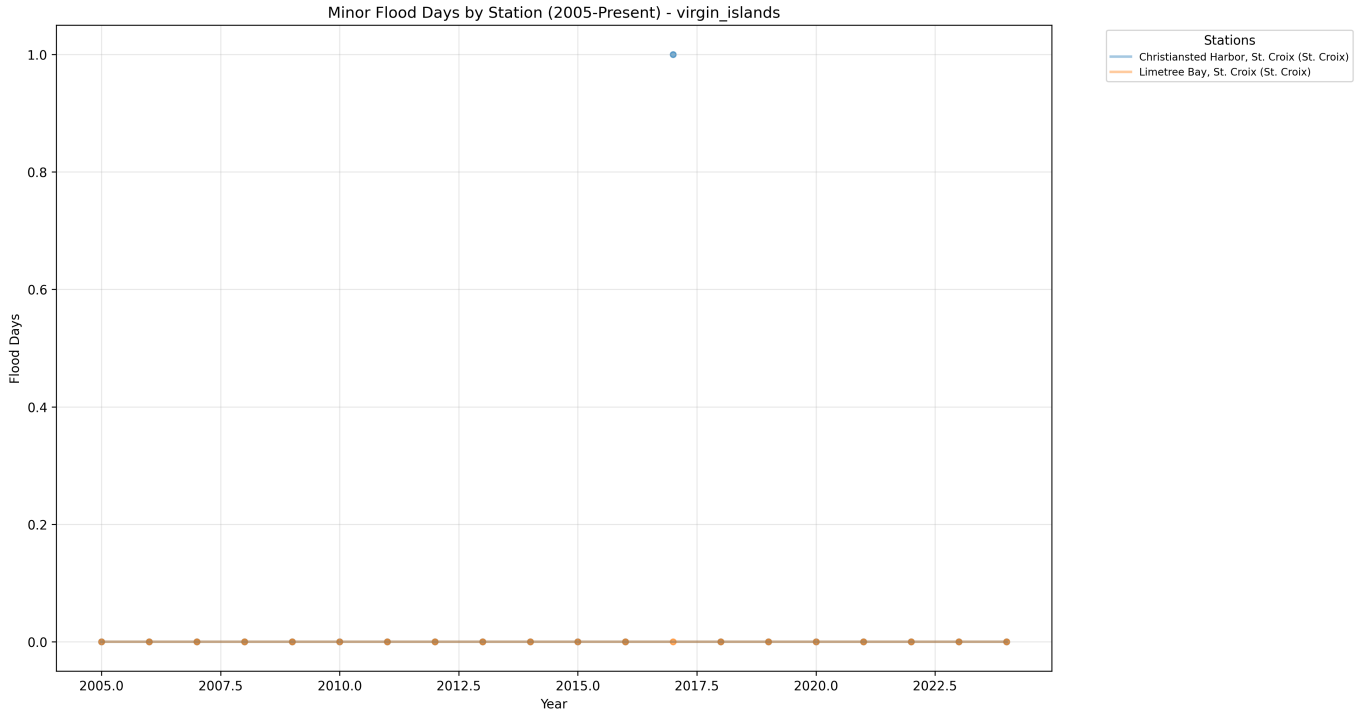


This heatmap shows the distribution of flood days across stations and years:

- 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

- Limetree Bay, St. Croix (St. Croix, Station 9751639): 28.6% complete
- Christiansted Harbor, St. Croix (St. Croix, Station 9751401): 25.7% complete

Highest Flooding Activity

- Limetree Bay, St. Croix (St. Croix, Station 9751639): 0.07 flood days per year
- Christiansted Harbor, St. Croix (St. Croix, Station 9751401): 0.04 flood days per year