

High Tide Flooding Data Quality Analysis - north_atlantic

Analysis generated on: 2025-02-10 13:51:33

Overview

Analysis of high tide flooding data from 1920 to 2024.

Key Statistics

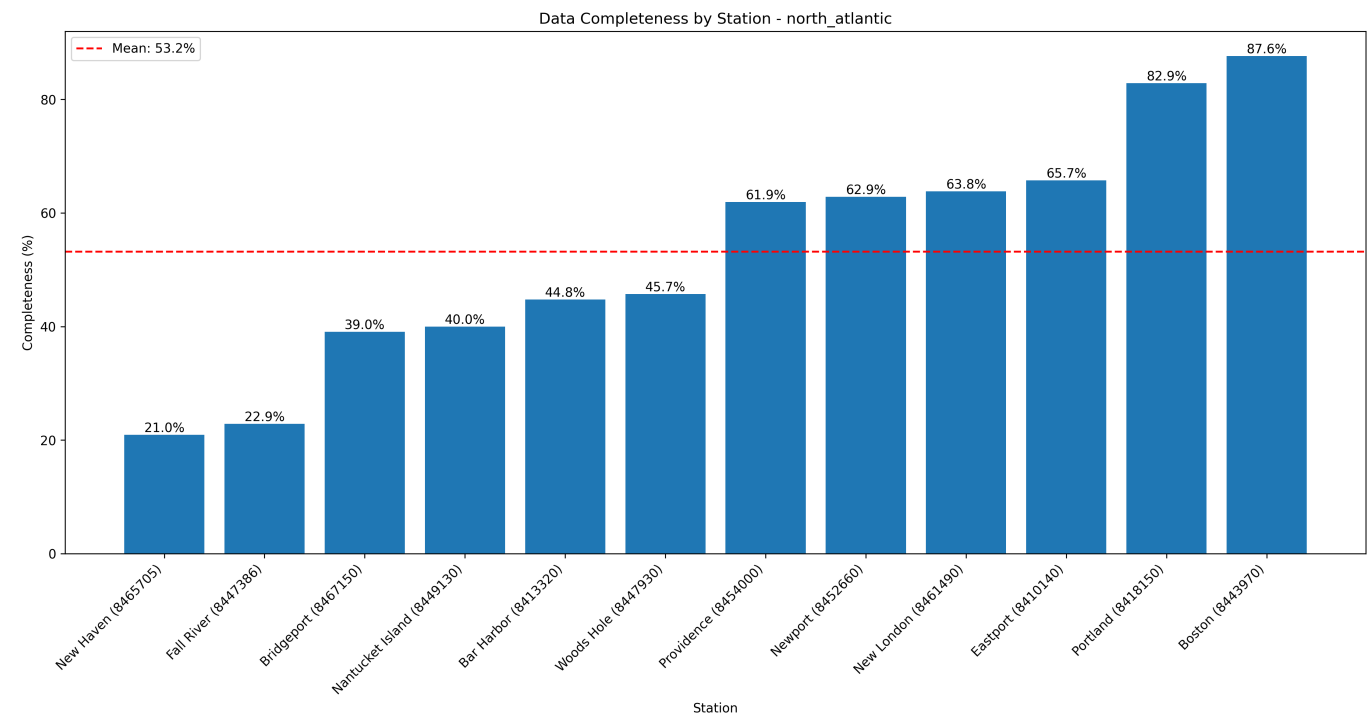
- Total records analyzed: 1260
- Average flood days per year (excluding missing data): 4.81
- Overall data completeness: 53.2%

Monitoring Stations

Station ID	Name	Location	Sub-Region	Data Completeness
8410140	Eastport	44.90°N, 66.98°W	Maine	65.7%
8411060	Cutler Farris Wharf	44.66°N, 67.21°W	Maine	0.0%
8413320	Bar Harbor	44.39°N, 68.20°W	Maine	44.8%
8418150	Portland	43.66°N, 70.24°W	Maine	82.9%
8419870	Seavey Island	43.08°N, 70.74°W	New Hampshire	0.0%
8443970	Boston	42.35°N, 71.05°W	Massachusetts	87.6%
8447386	Fall River	41.70°N, 71.16°W	Massachusetts	22.9%
8447435	Chatham	41.69°N, 69.95°W	Massachusetts	0.0%
8447930	Woods Hole	41.52°N, 70.67°W	Massachusetts	45.7%
8449130	Nantucket Island	41.28°N, 70.10°W	Massachusetts	40.0%
8452660	Newport	41.50°N, 71.33°W	Rhode Island	62.9%
8454000	Providence	41.81°N, 71.40°W	Rhode Island	61.9%
8461490	New London	41.37°N, 72.10°W	Connecticut	63.8%
8465705	New Haven	41.28°N, 72.91°W	Connecticut	21.0%
8467150	Bridgeport	41.18°N, 73.18°W	Connecticut	39.0%

Data Quality Analysis

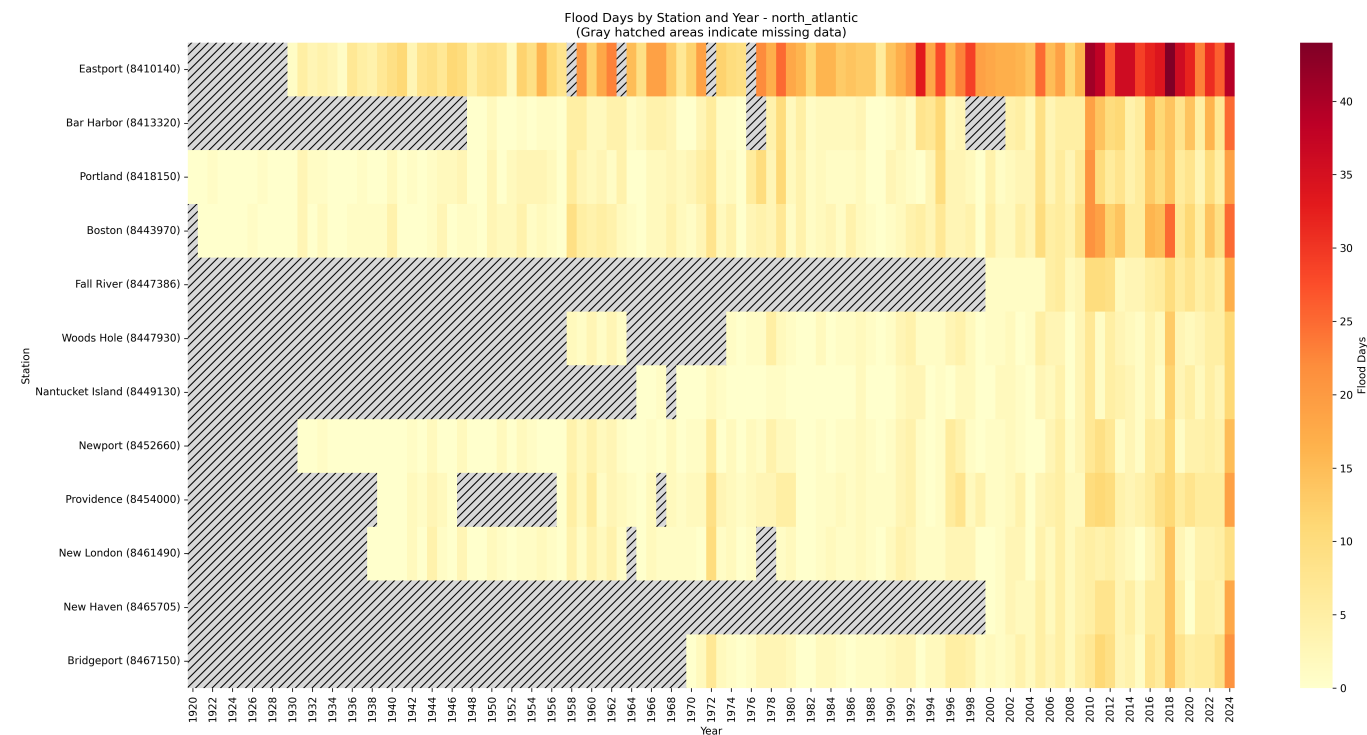
Data Completeness by Station



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: 53.2%

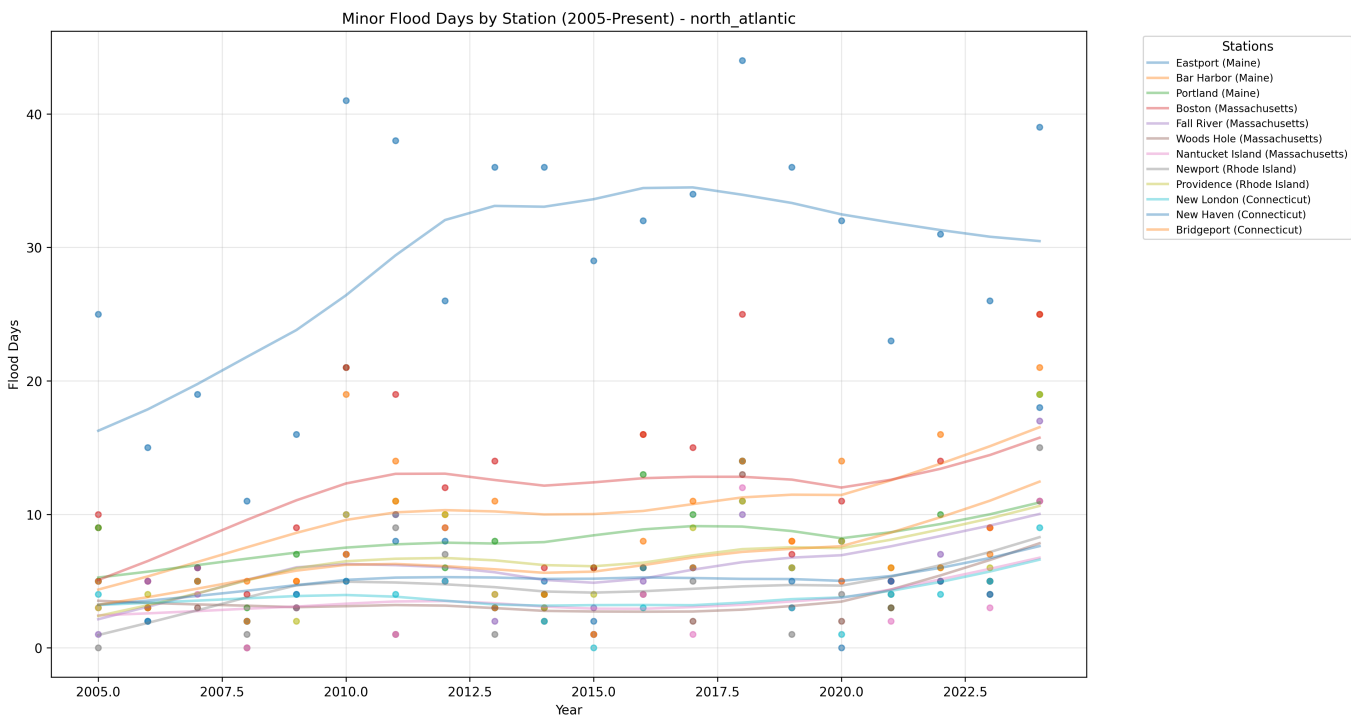
Flood Days Distribution



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

- Boston (Massachusetts, Station 8443970): 87.6% complete
- Portland (Maine, Station 8418150): 82.9% complete
- Eastport (Maine, Station 8410140): 65.7% complete

Highest Flooding Activity

- Eastport (Maine, Station 8410140): 17.17 flood days per year
- Bar Harbor (Maine, Station 8413320): 5.49 flood days per year
- Fall River (Massachusetts, Station 8447386): 5.25 flood days per year