

## APPENDIX F

# National Marine Fisheries Service (NMFS) Vessel Monitoring System (VMS) Data

Northern New York Bight VMS Traffic per Calendar Year  
November 2021

This report summarizes traffic by VMS-equipped vessels in and through the Northern New York Bight Study Area in recent years. The information requested by the First Coast Guard District Waterways Management Division was for counts of VMS vessel transits per year from calendar year 2010 through 2020. Information provided by the Northeast VMS Team, NMFS Office of Law Enforcement.

Data Description:

\*Note: Due to masking of cell values with less than 3 contributing permits, all vessel activity may NOT be shown in some cases.

- Sources:
  - Vessel Monitoring System (VMS) positions
    - Only includes positions with STATUS: TPREP, PWRDN, PWRUP, and QASPR
  - GARFO AMS database (defines trip duration and declaration)
- Temporal Resolution:
  - 2010-2020
- Spatial Resolution
  - VMS positions
  - All speeds
  - Inside and outside VMS demarcation line
  - Bounding box: -75.0585, -68.8809, 37.74533, 42.51533
  - Trip must have reported  $\geq 2$  positions inside the NNYB PARS
- Included Fishery Management Plans (as defined by first 3 VMS declaration characters)
  - DOF: Declared out of Fishery
  - HER: Herring
  - MNK: Monkfish
  - NMS: Northeast Multispecies
  - SCO: Surf Clam/Ocean Quahog
  - SES: Atlantic Sea Scallop

- SMB: Squid-Mackerel-Butterfish
- Analysis
  - VMS positions grouped by sail and land dates from AMS system
  - Grouped by year for each transit map
  - Outlier VMS positions that were > 2.5 hours since last poll were removed (~0.04% of positions)
  - Poll locations were binned into a raster grid with a cell size of 3 nautical miles, which approximates the spatial uncertainty of polls with an upper speed bound of 3 knots
  - Grid cells with < 3 permits contributing to the cell value were masked to preserve confidentiality
  - Counts of trips in each non-confidential cell value were then summed to generate the transit heat maps

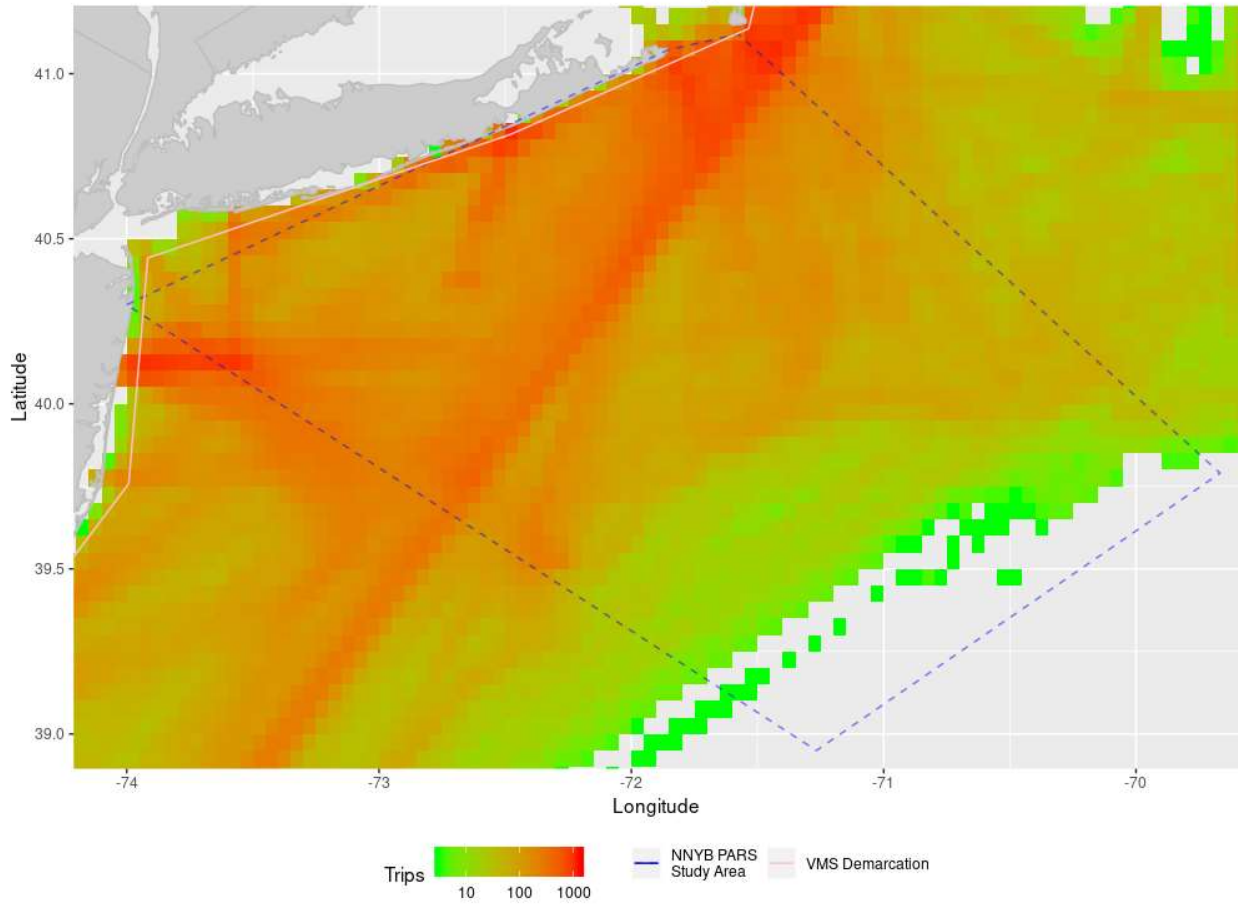
Results:

Table 1 below gives the counts of VMS vessel transits of the Northern New York Bight Study Area by calendar year from 2010-2020.

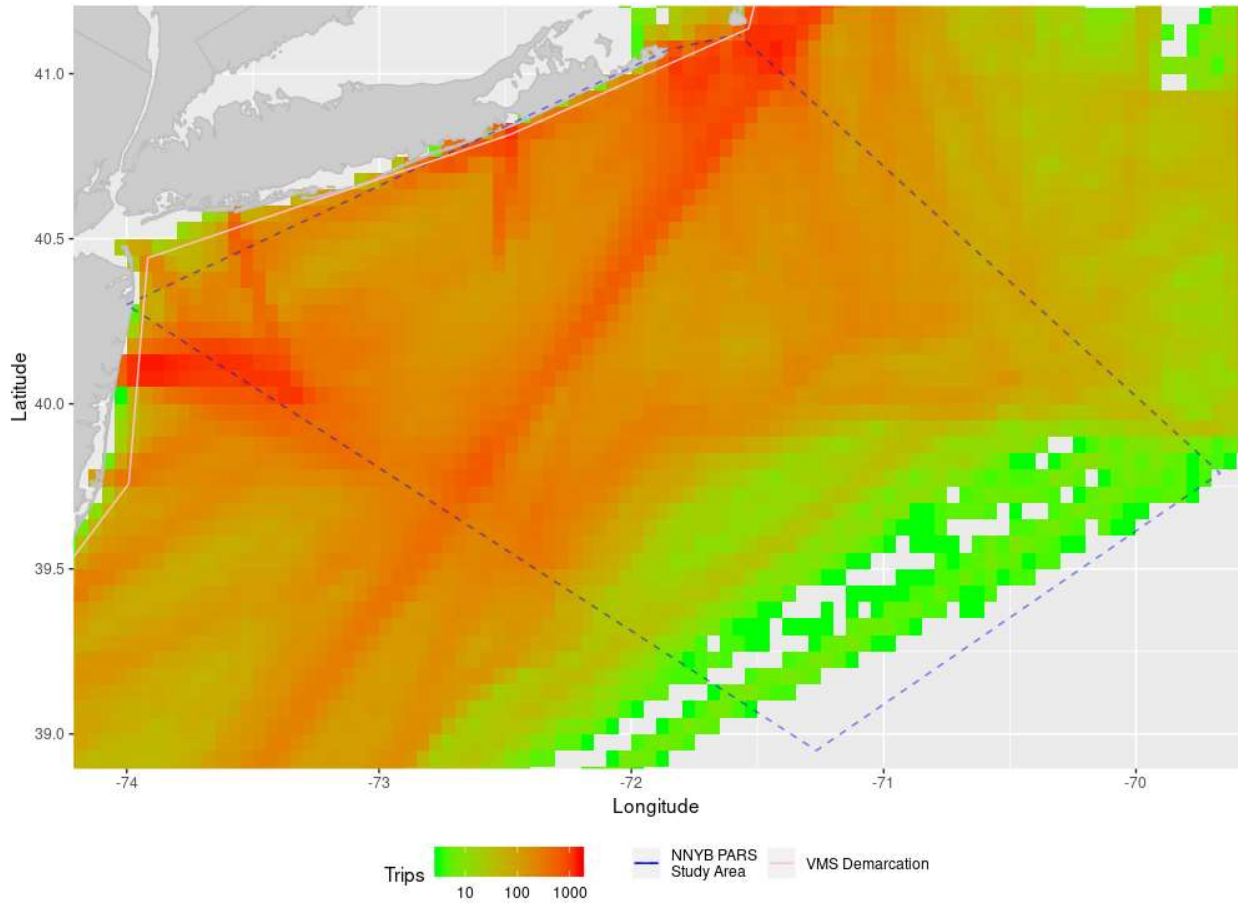
YEAR	TRANSITS	PERMITS
2010	8,365	613
2011	11,735	644
2012	10,795	614
2013	10,520	582
2014	9,972	614
2015	10,418	638
2016	12,082	648
2017	11,076	627
2018	9,791	595
2019	8,812	577
2020	8,916	592

**Table 1.** Counts of Transits and Permits by Year

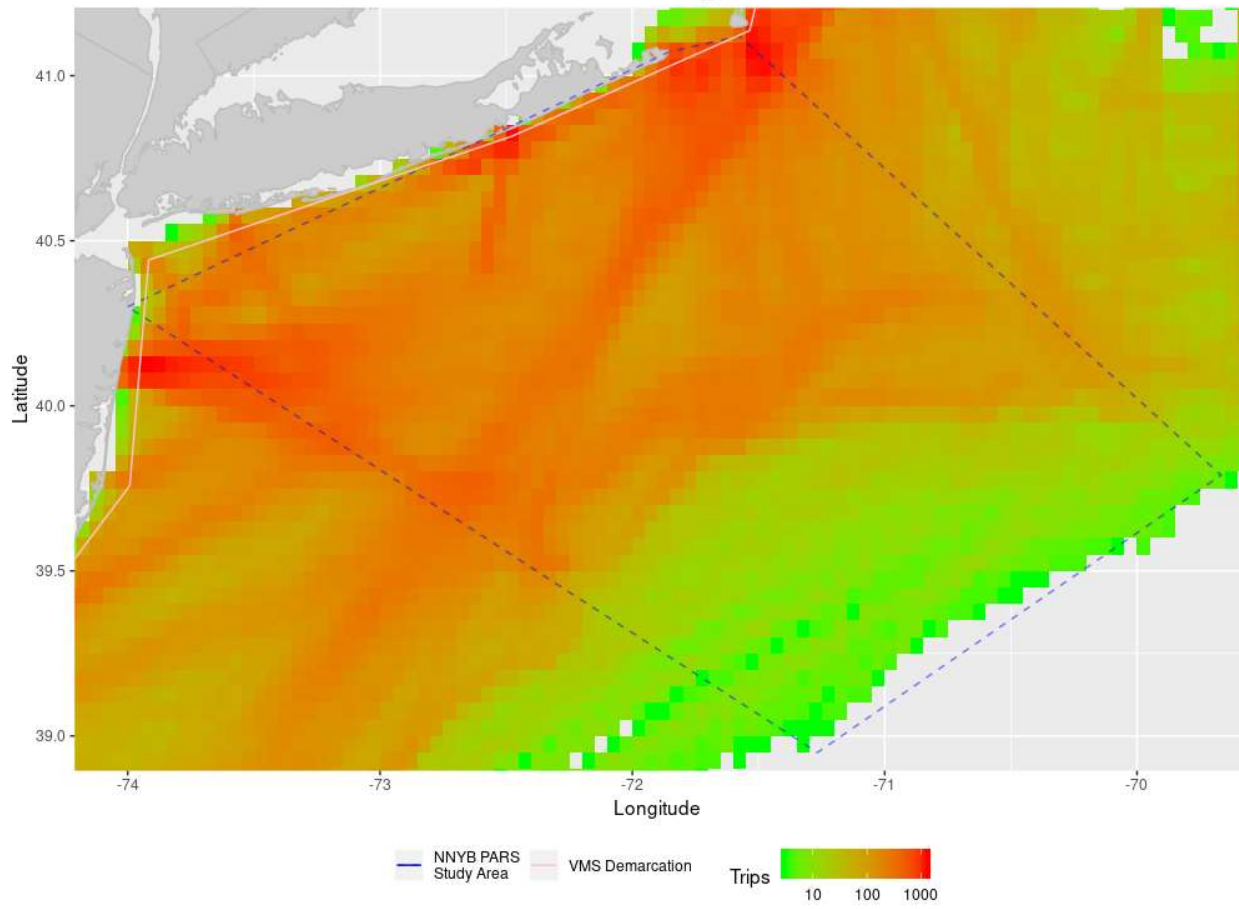
2010 Estimated VMS Transits in NNYB Port Access Route Study Area



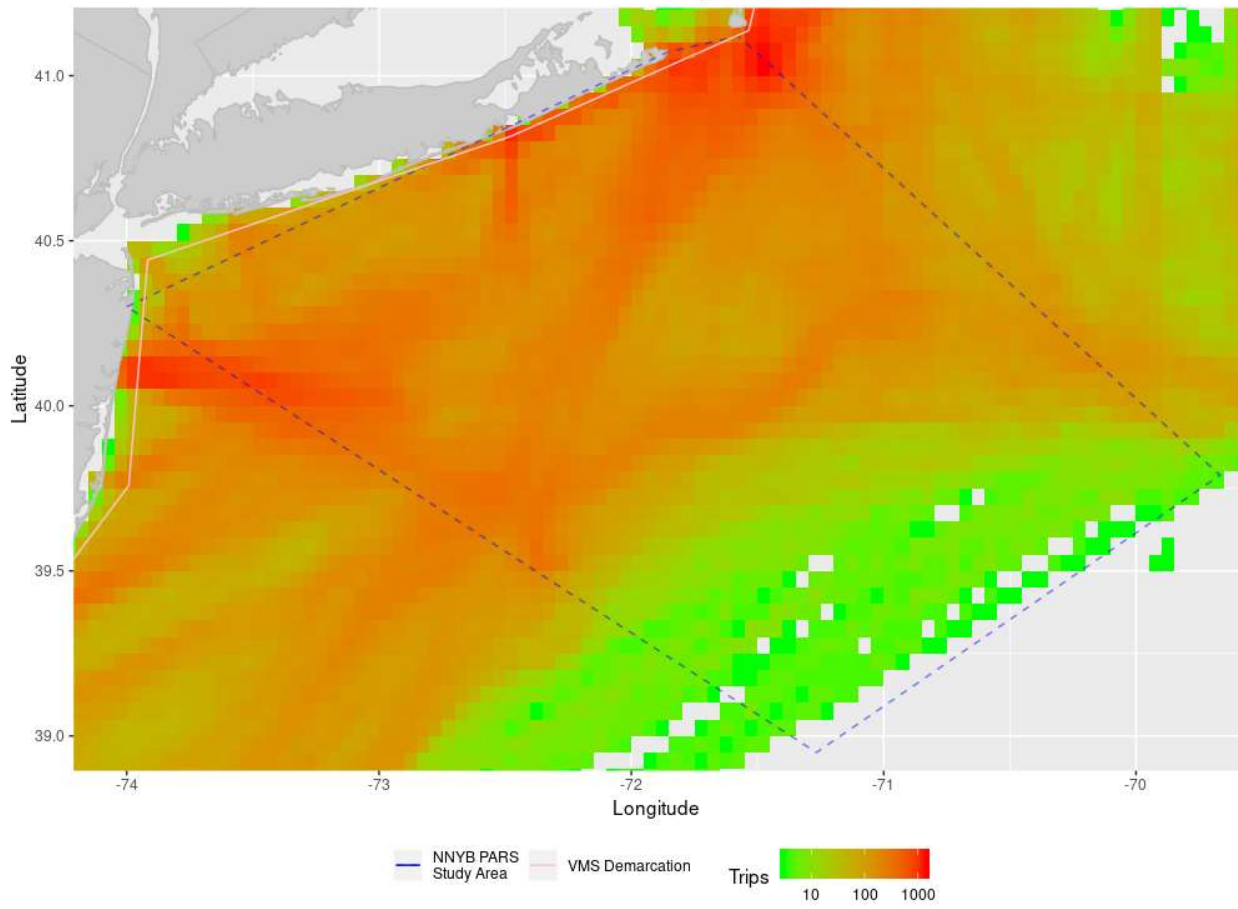
2011 Estimated VMS Transits in NNYB Port Access Route Study Area



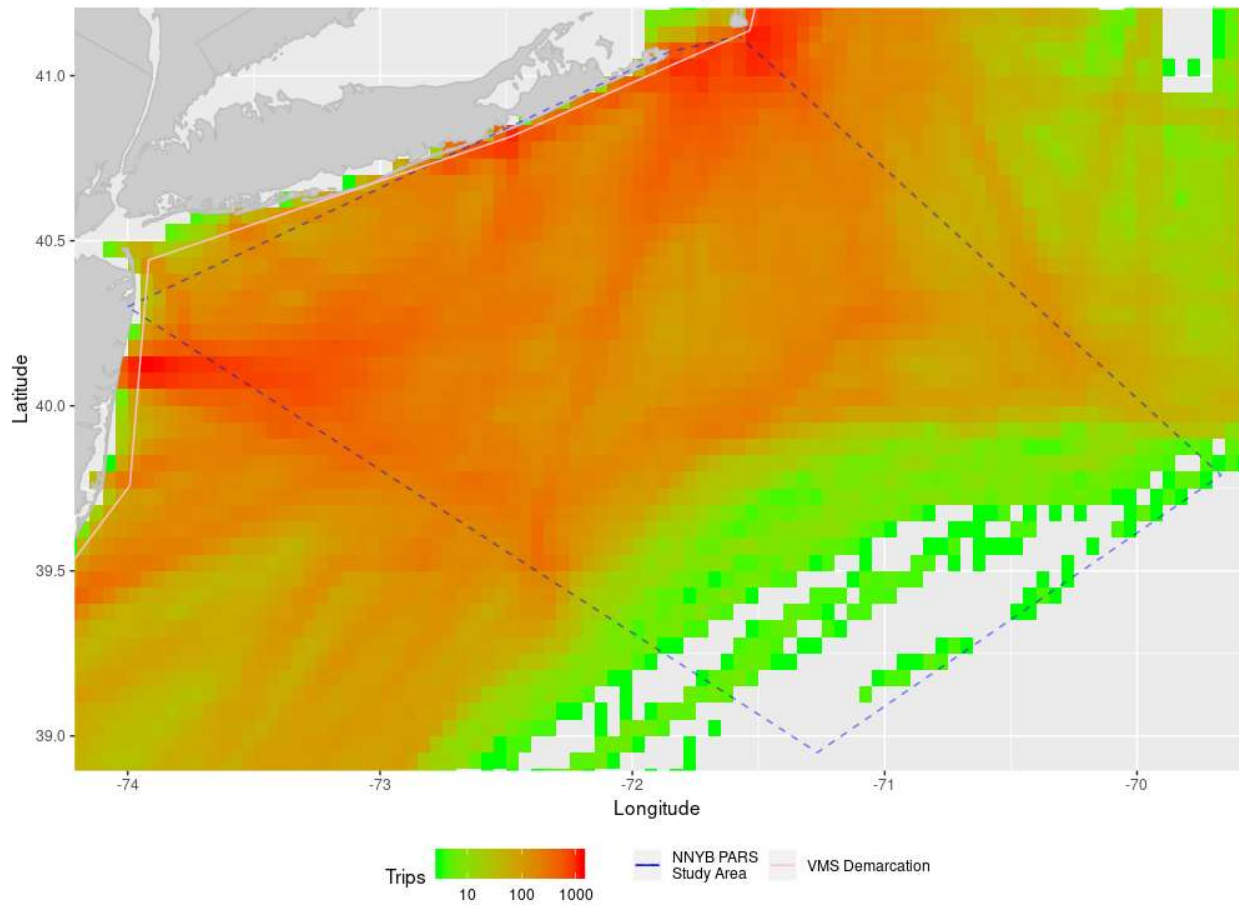
2012 Estimated VMS Transits in NNYB Port Access Route Study Area



2013 Estimated VMS Transits in NNYB Port Access Route Study Area

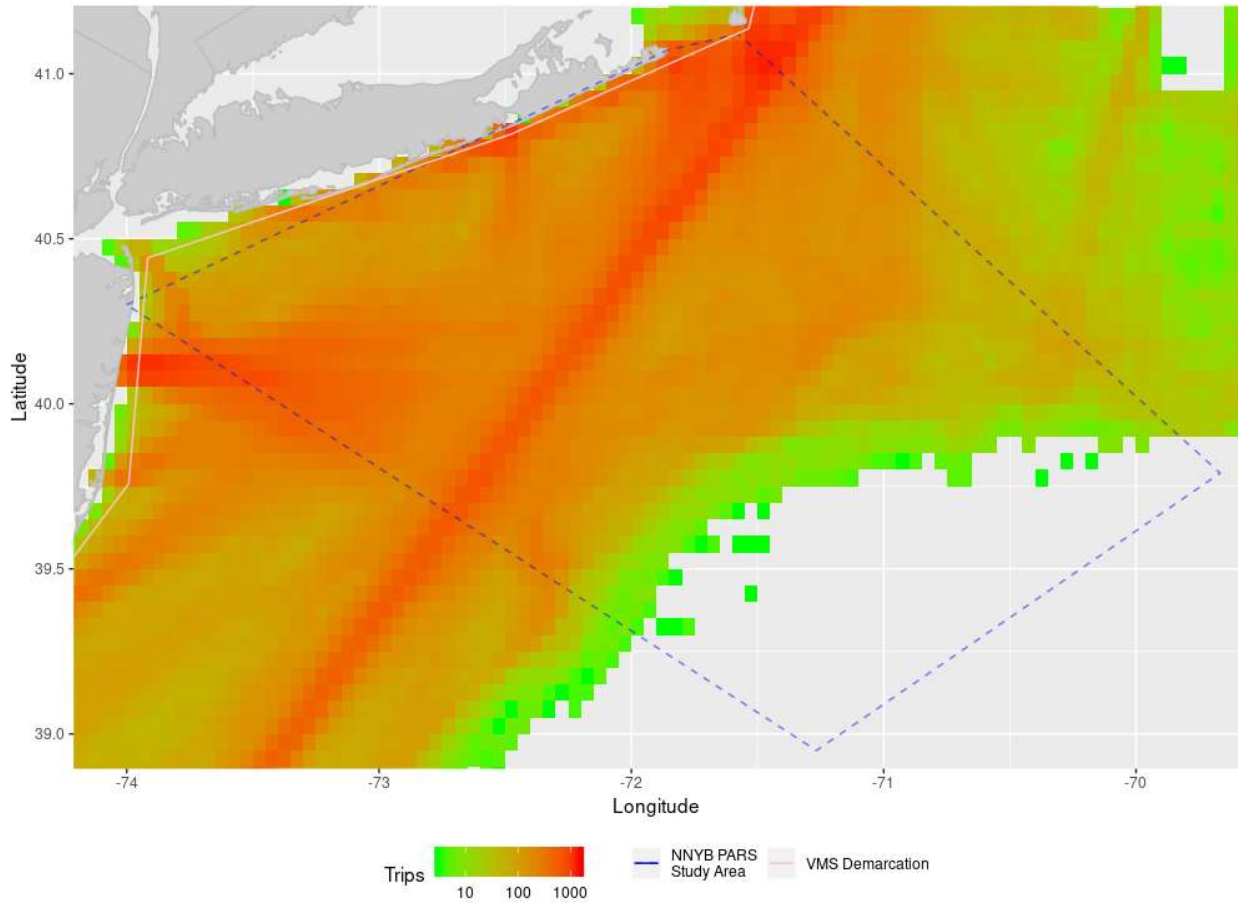


2014 Estimated VMS Transits in NNYB Port Access Route Study Area

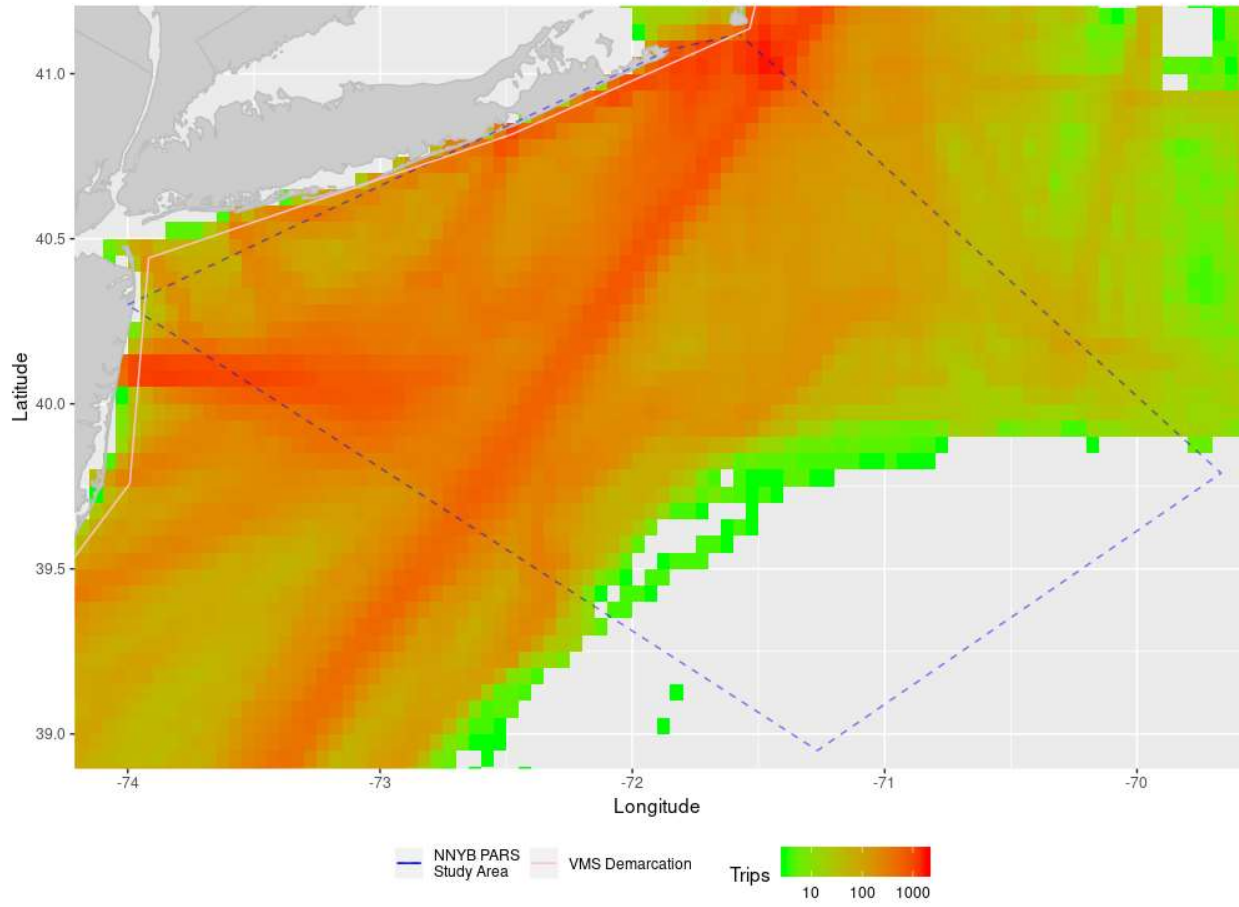




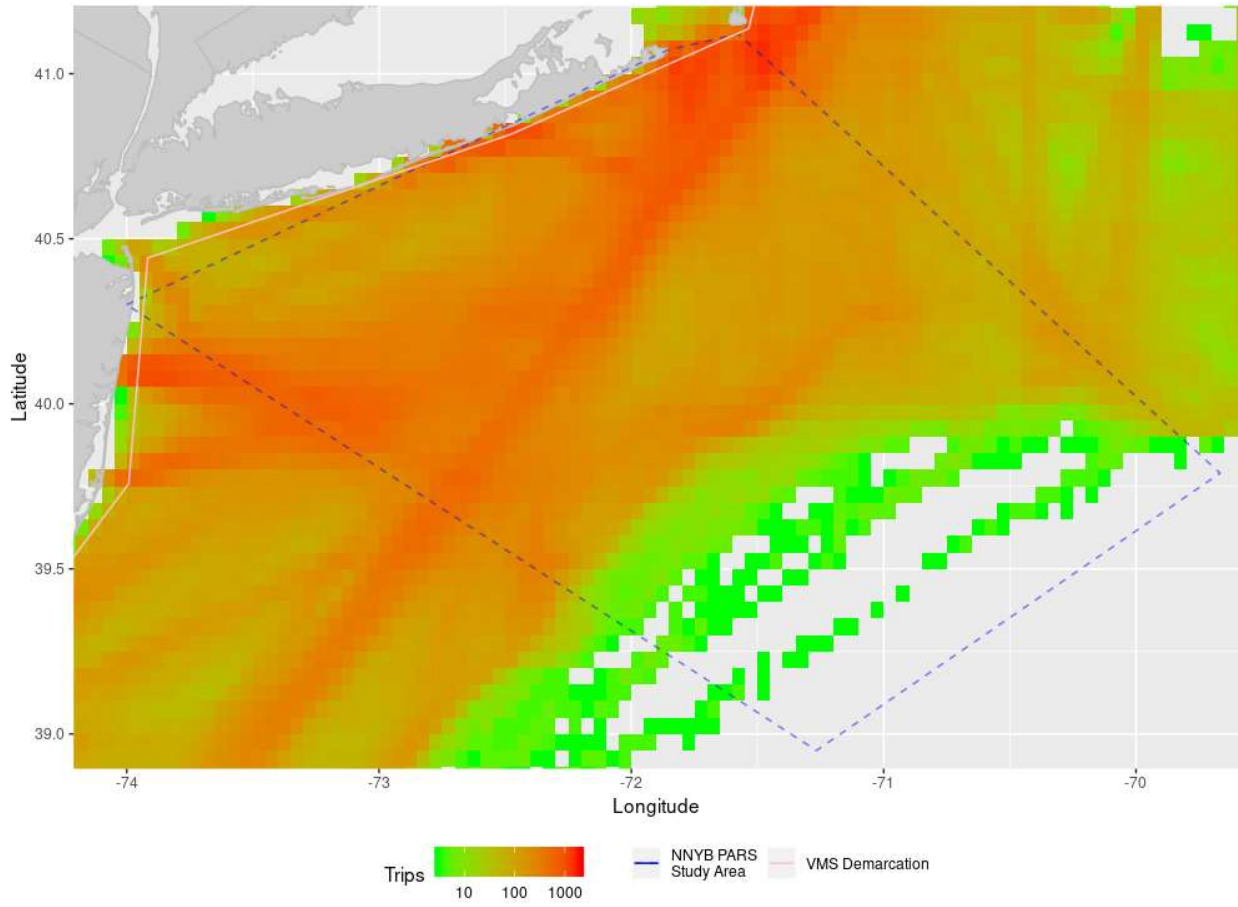
2015 Estimated VMS Transits in NNYB Port Access Route Study Area



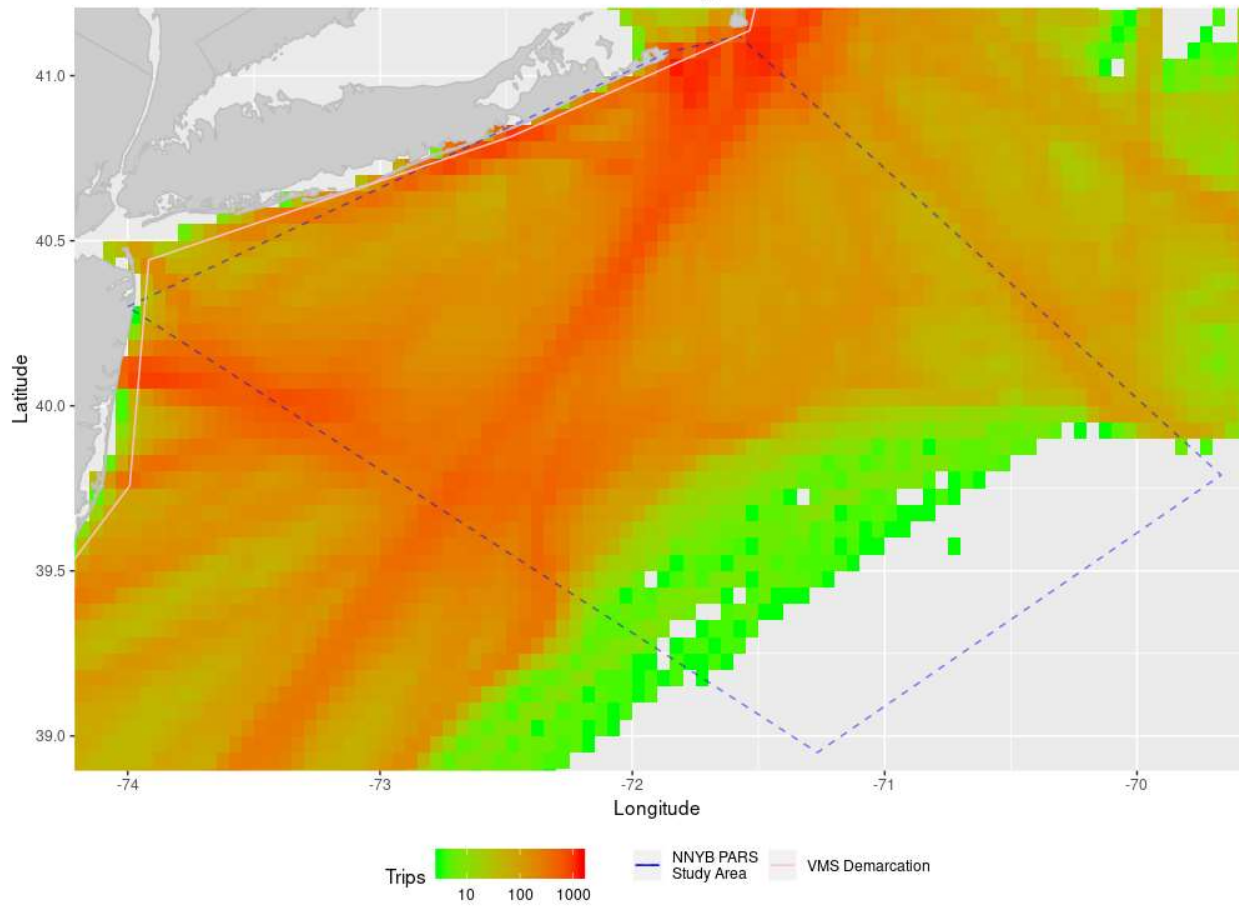
2016 Estimated VMS Transits in NNYB Port Access Route Study Area



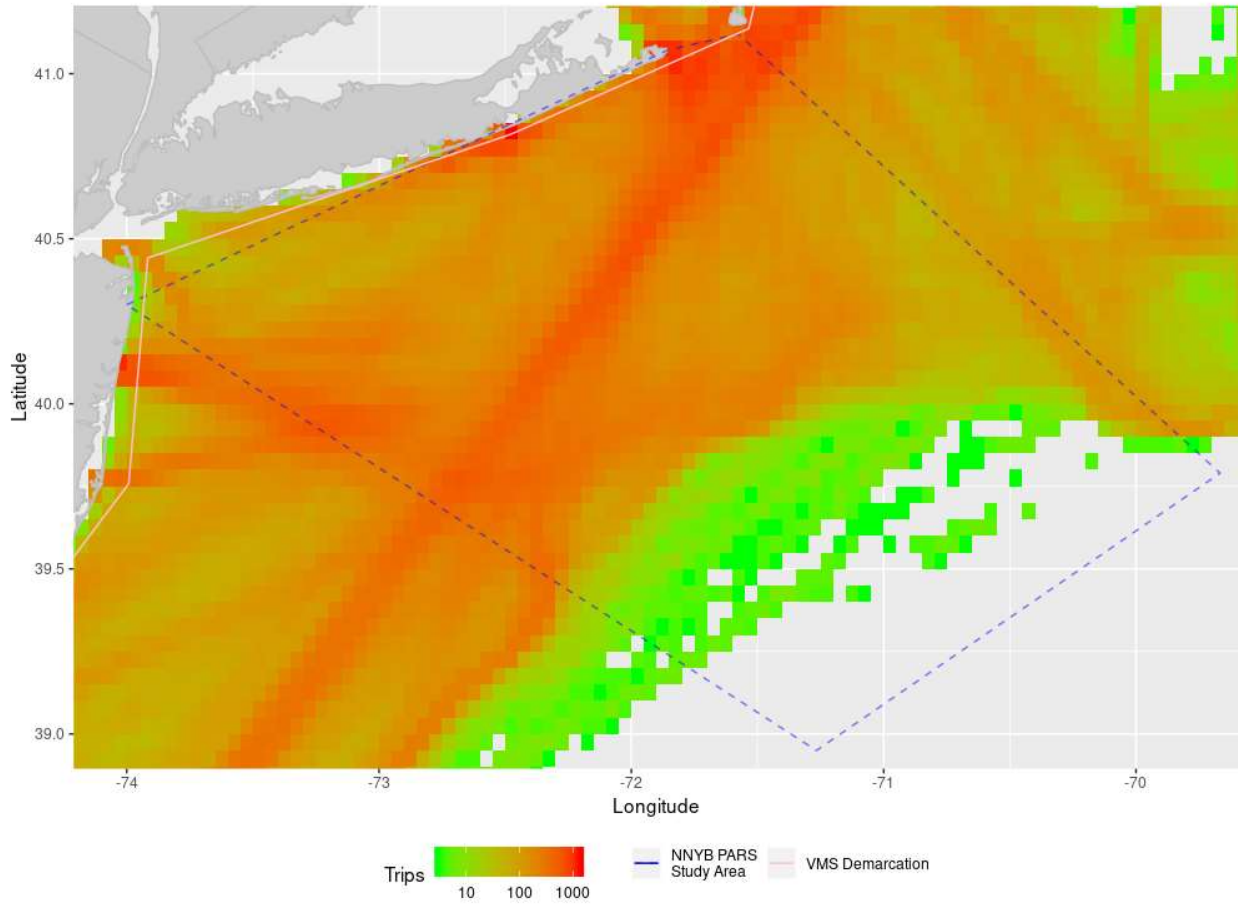
2017 Estimated VMS Transits in NNYB Port Access Route Study Area



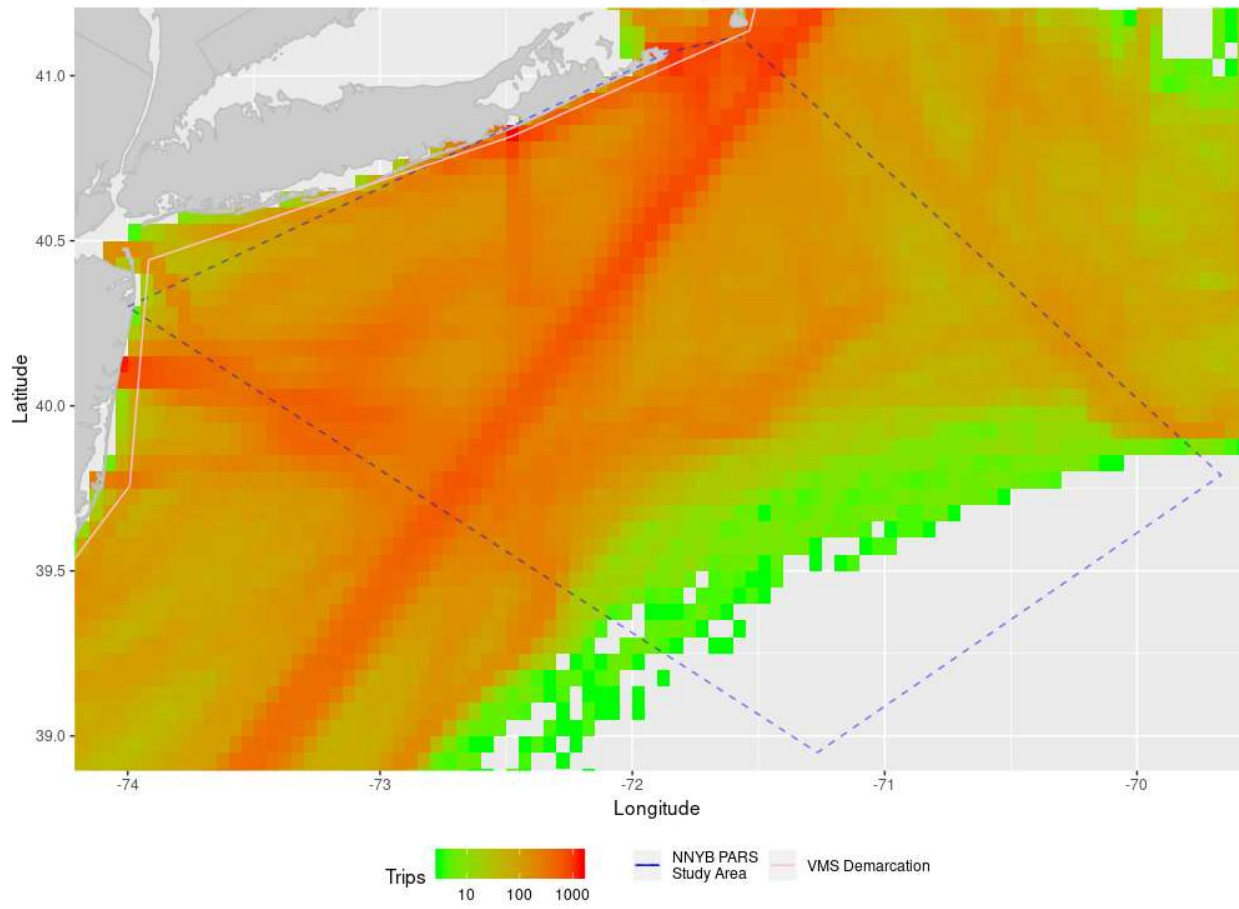
2018 Estimated VMS Transits in NNYB Port Access Route Study Area



2019 Estimated VMS Transits in NNYB Port Access Route Study Area



2020 Estimated VMS Transits in NNYB Port Access Route Study Area



## APPENDIX G

# NNYBPARS Vessel Activity in Wind Energy Areas

# Northern New York Bight (NNYB) Wind Areas' Vessel Activity

Vessel activity is examined in the lease areas shown in Figure 1. Number of AIS vessel tracks intersecting each of the five areas is tallied, as well as the number of unique vessels that created these tracks.

Additionally, histograms are presented based on the lengths of the vessels associated with these track lines. This means that the same vessel may be counted more than one time if this vessel created more than one track in area of interest. Not all vessels have length values, as this is a user-entered field and sometimes left blank. All lengths were recorded in meters and converted to feet in this document.

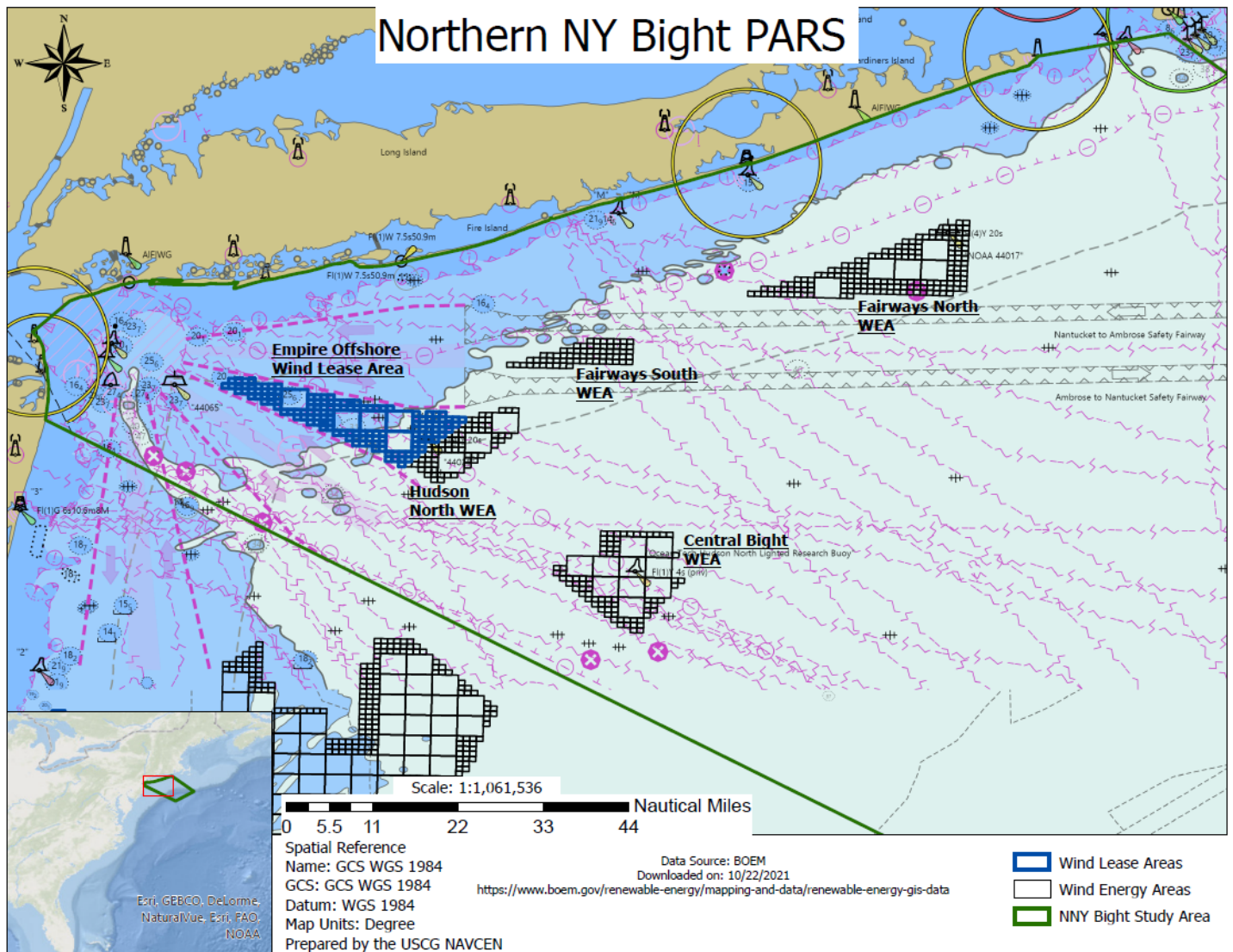
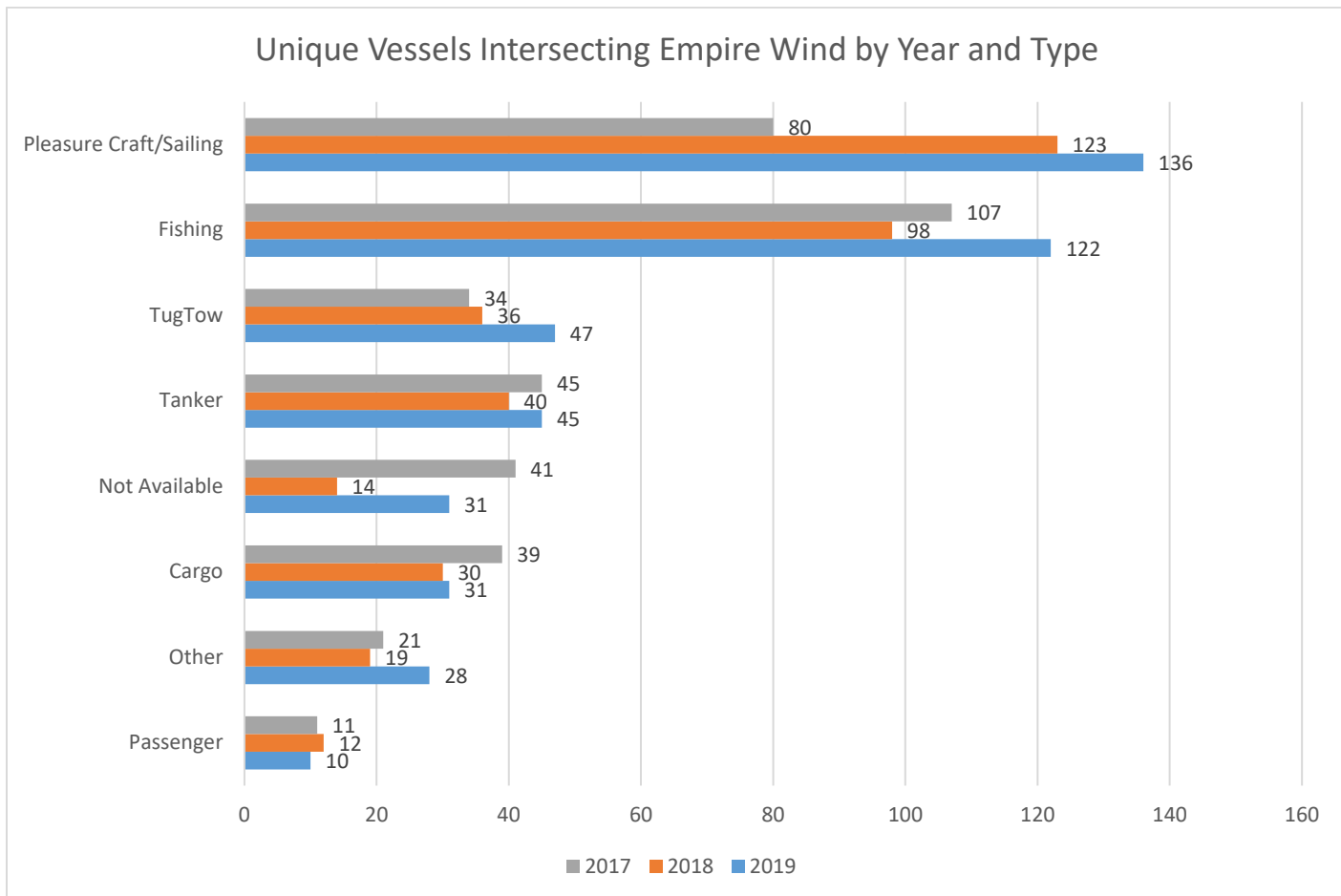
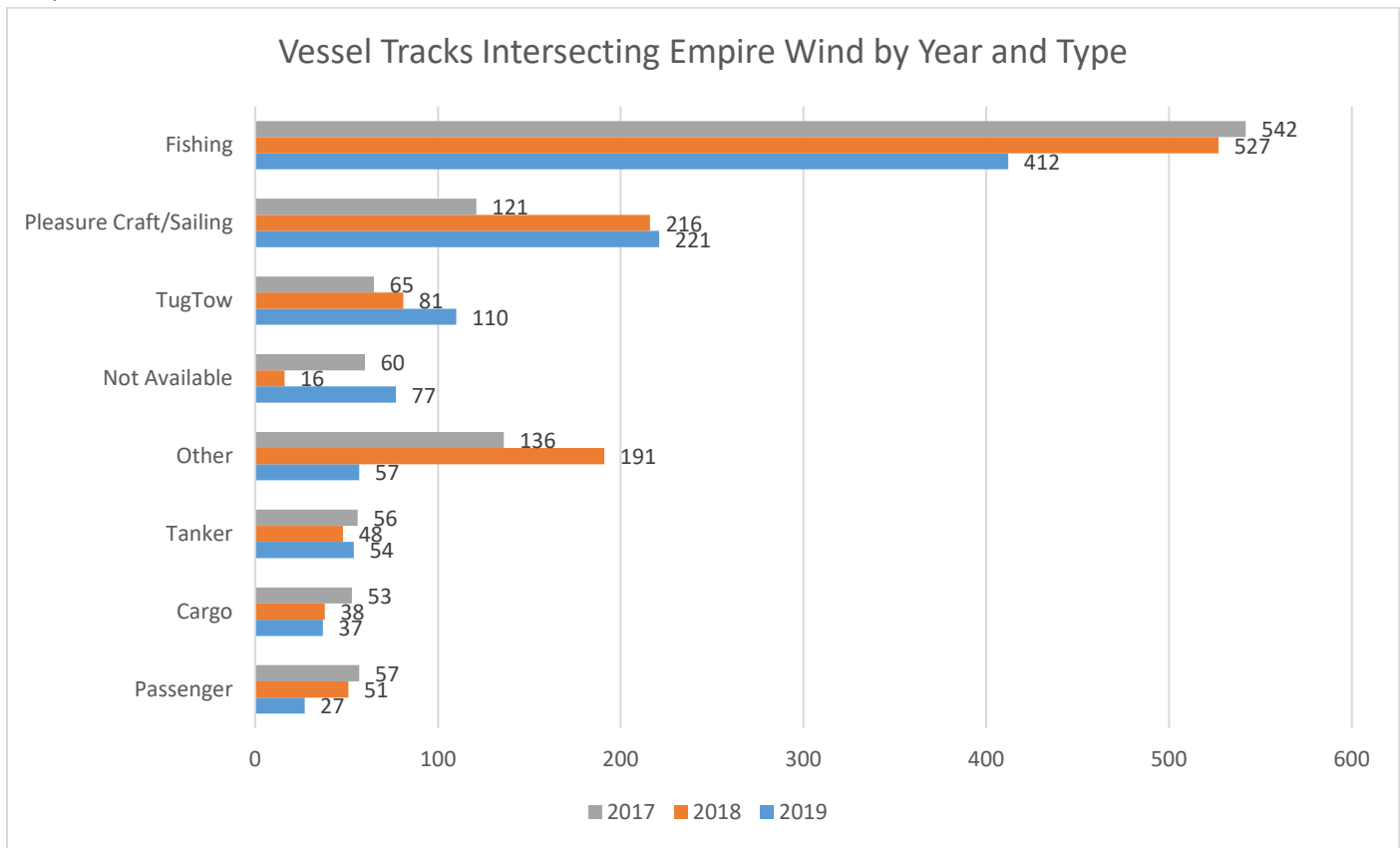


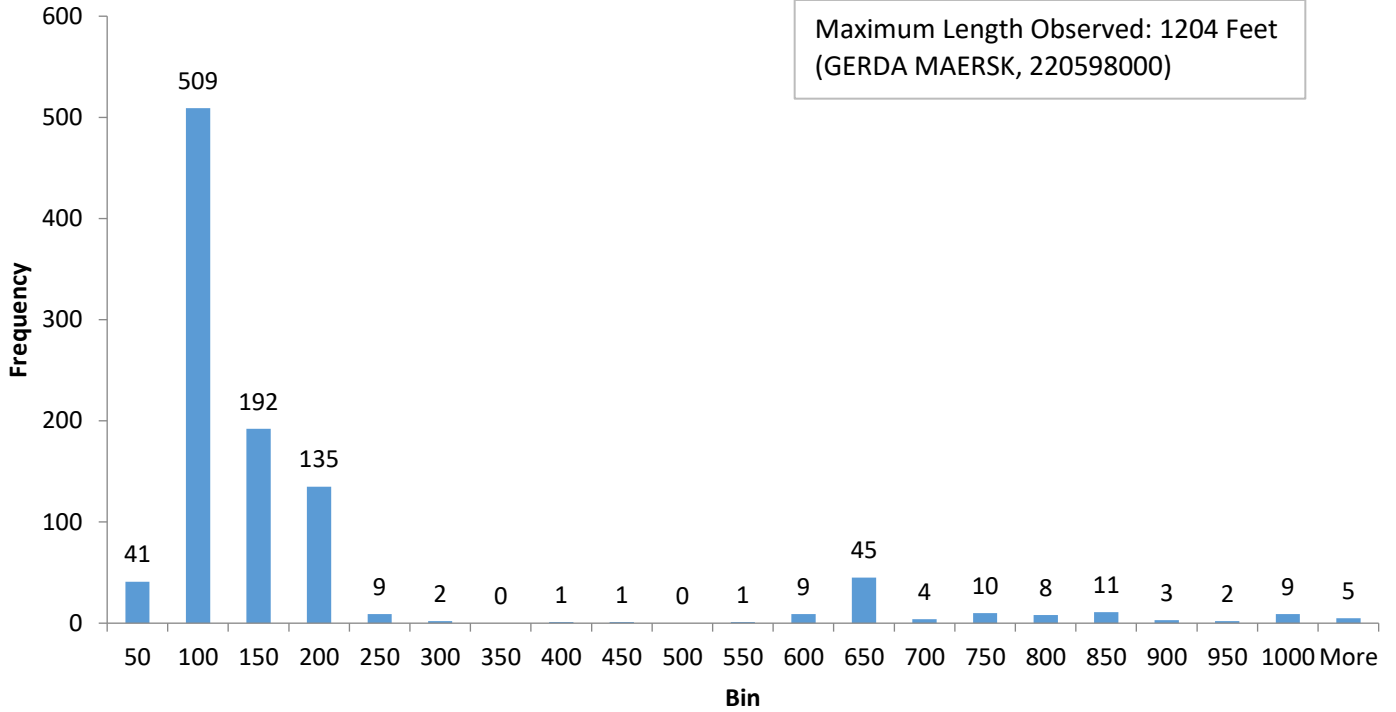
Figure 1: NNYB Wind Areas



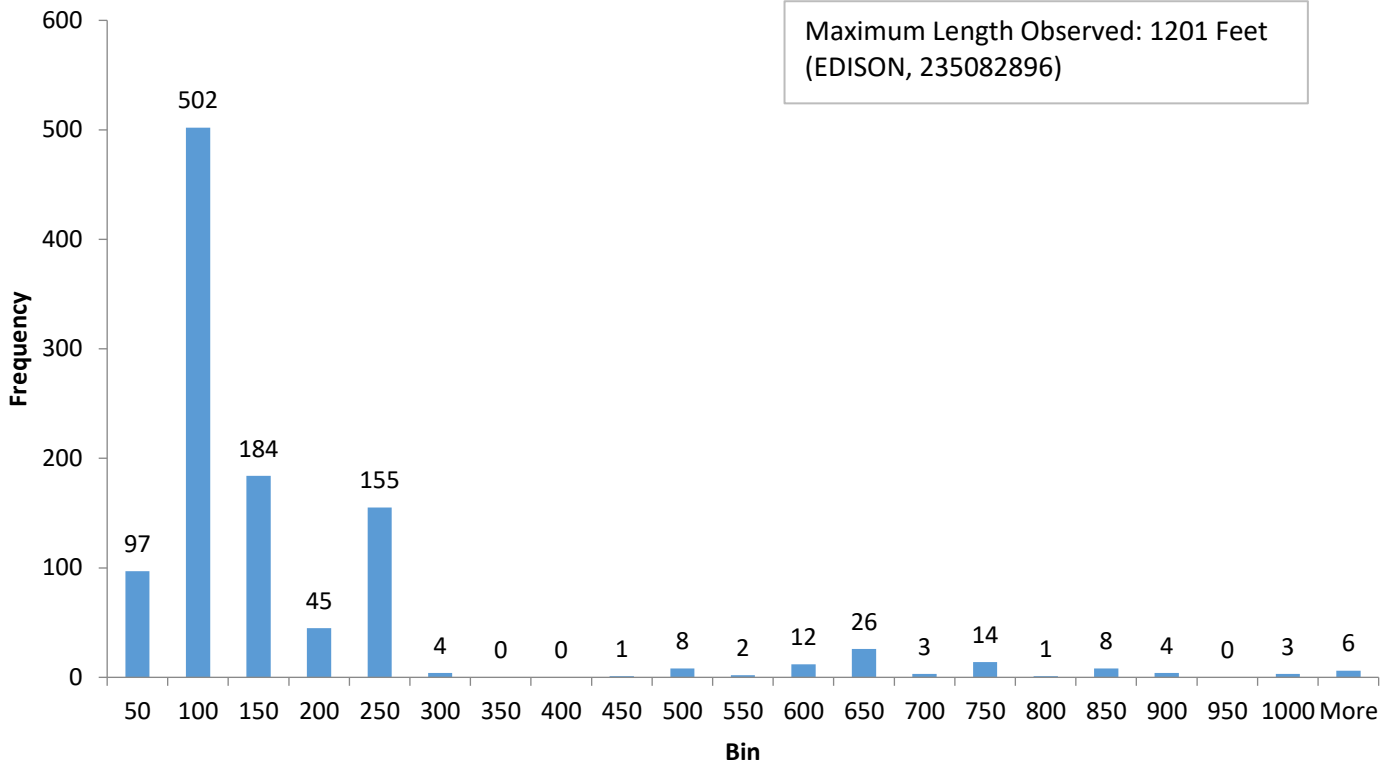
## Empire Offshore Wind Lease Area



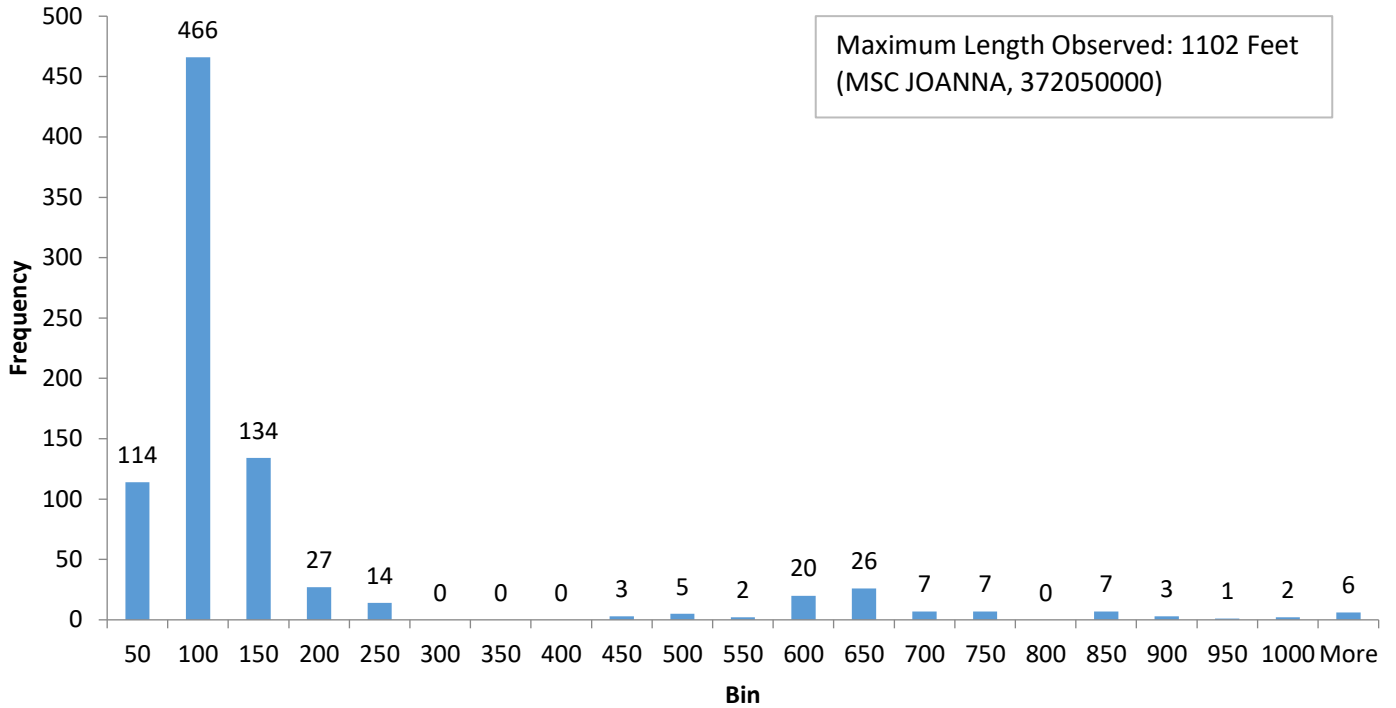
## Vessel Lengths by Tracks in Empire Wind, 2017



## Vessel Lengths by Tracks in Empire Wind, 2018

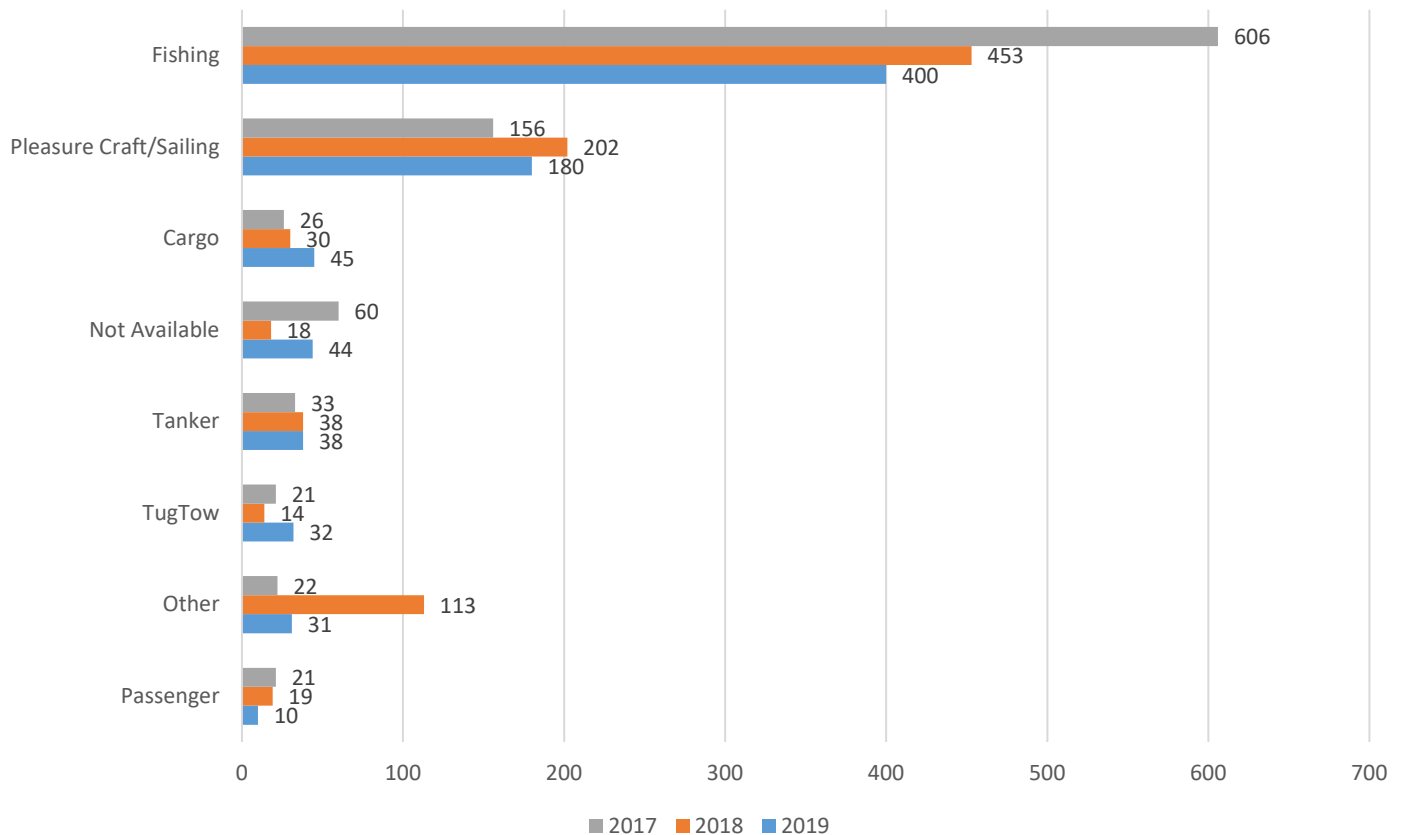


## Vessel Lengths by Tracks in Empire Wind, 2019

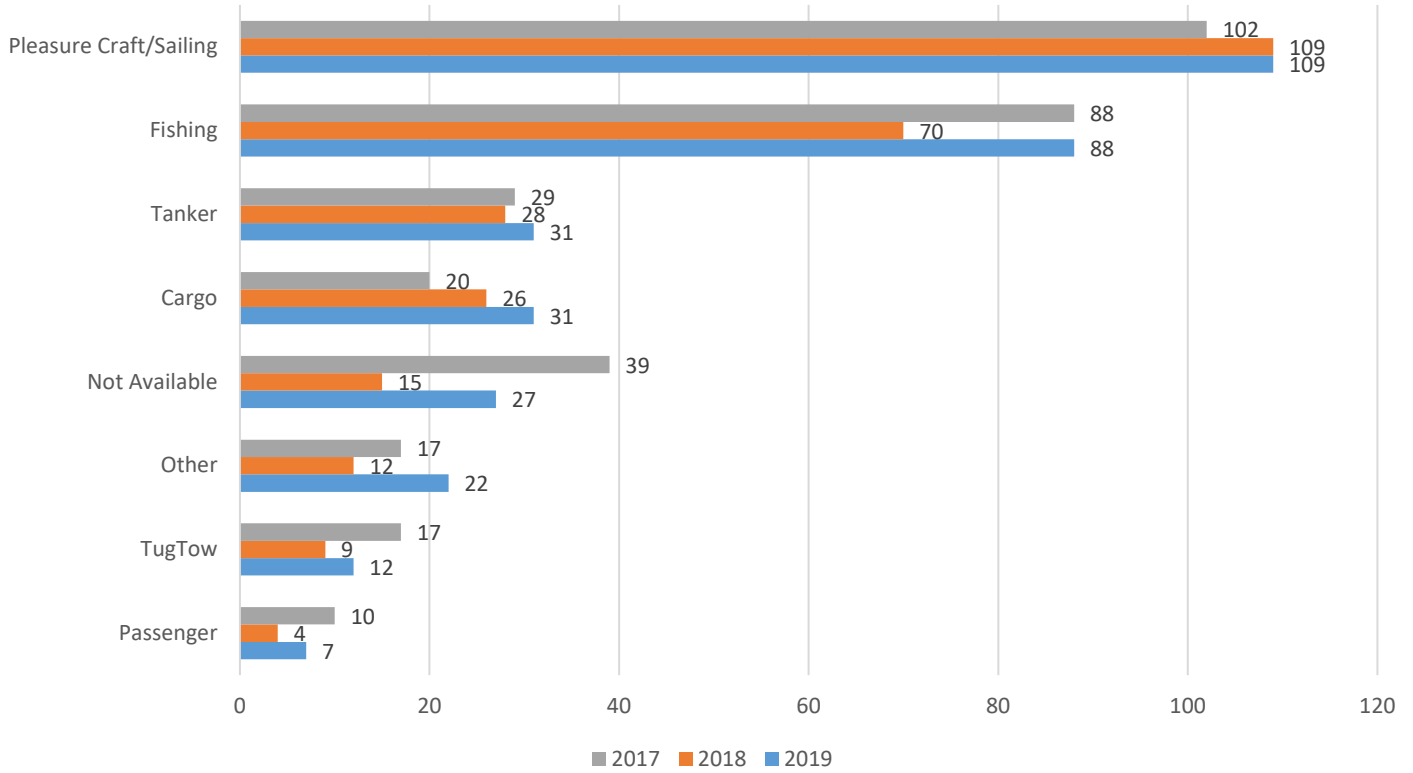


## Hudson North Wind Energy Area

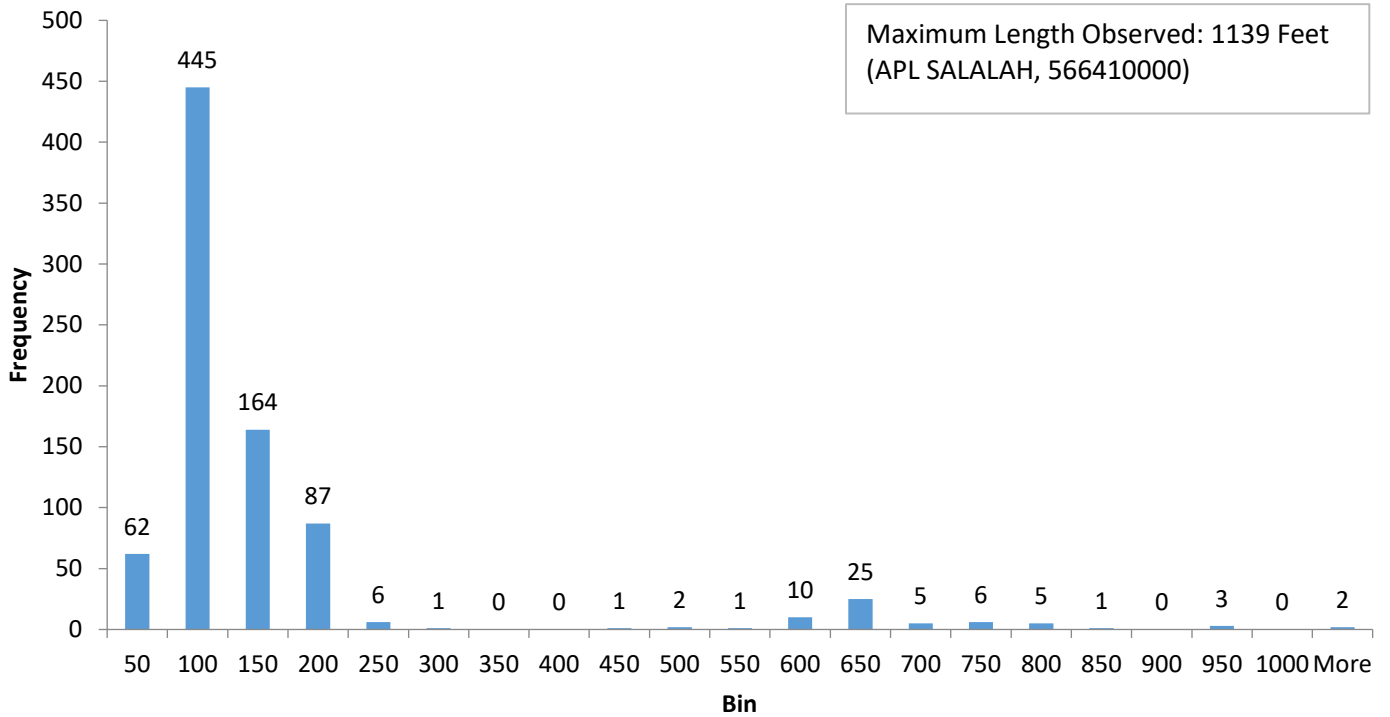
### Vessel Tracks Intersecting Hudson North by Year and Type



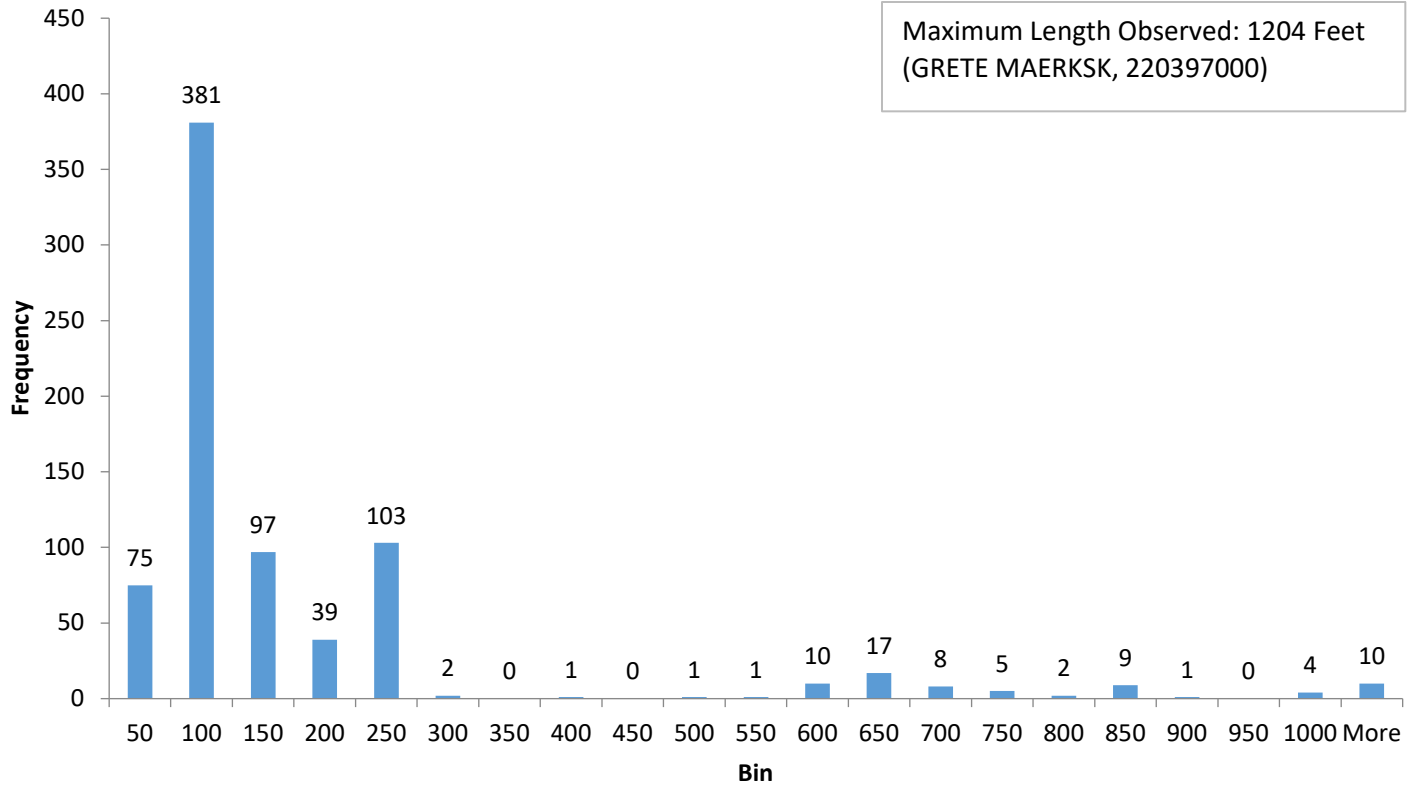
### Unique Vessels Intersecting Hudson North by Year and Type



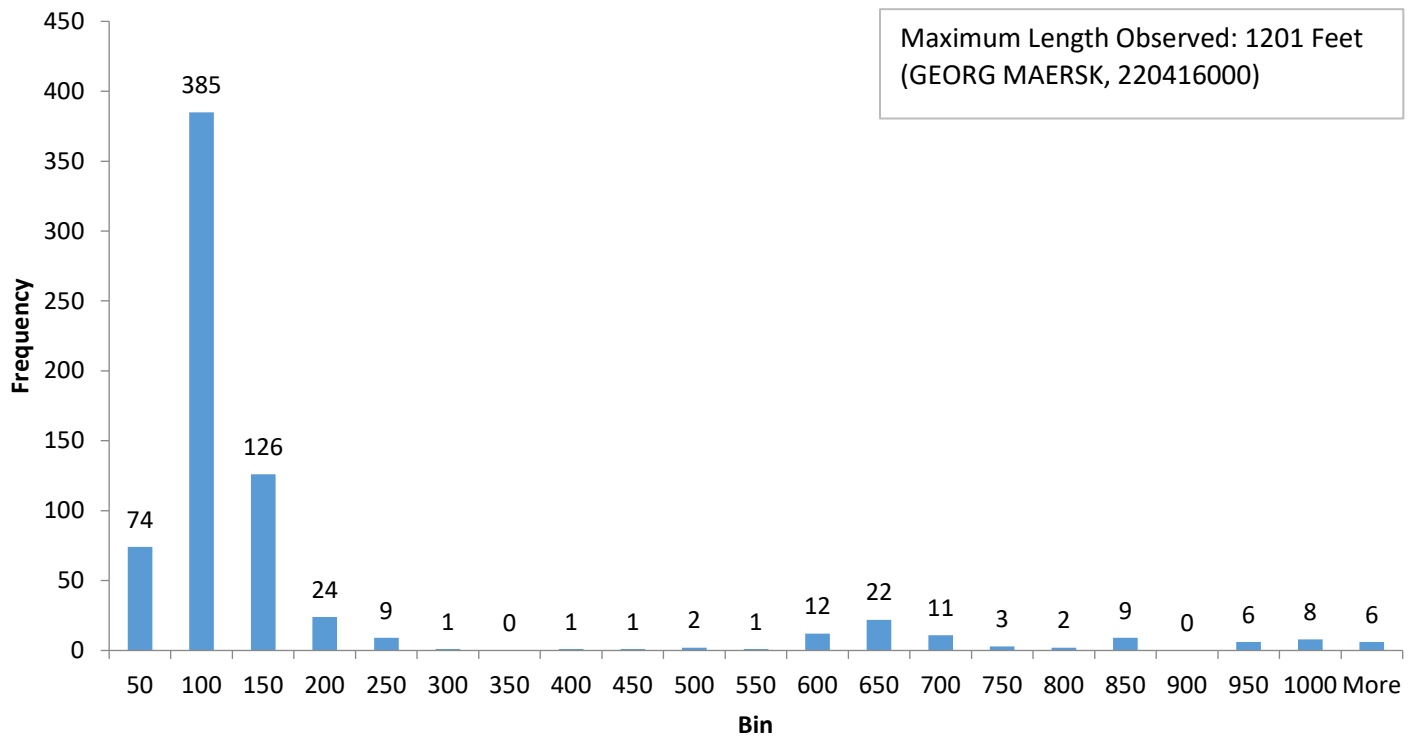
### Vessel Lengths by Tracks in Hudson Wind, 2017



## Vessel Lengths by Tracks in Hudson Wind, 2018

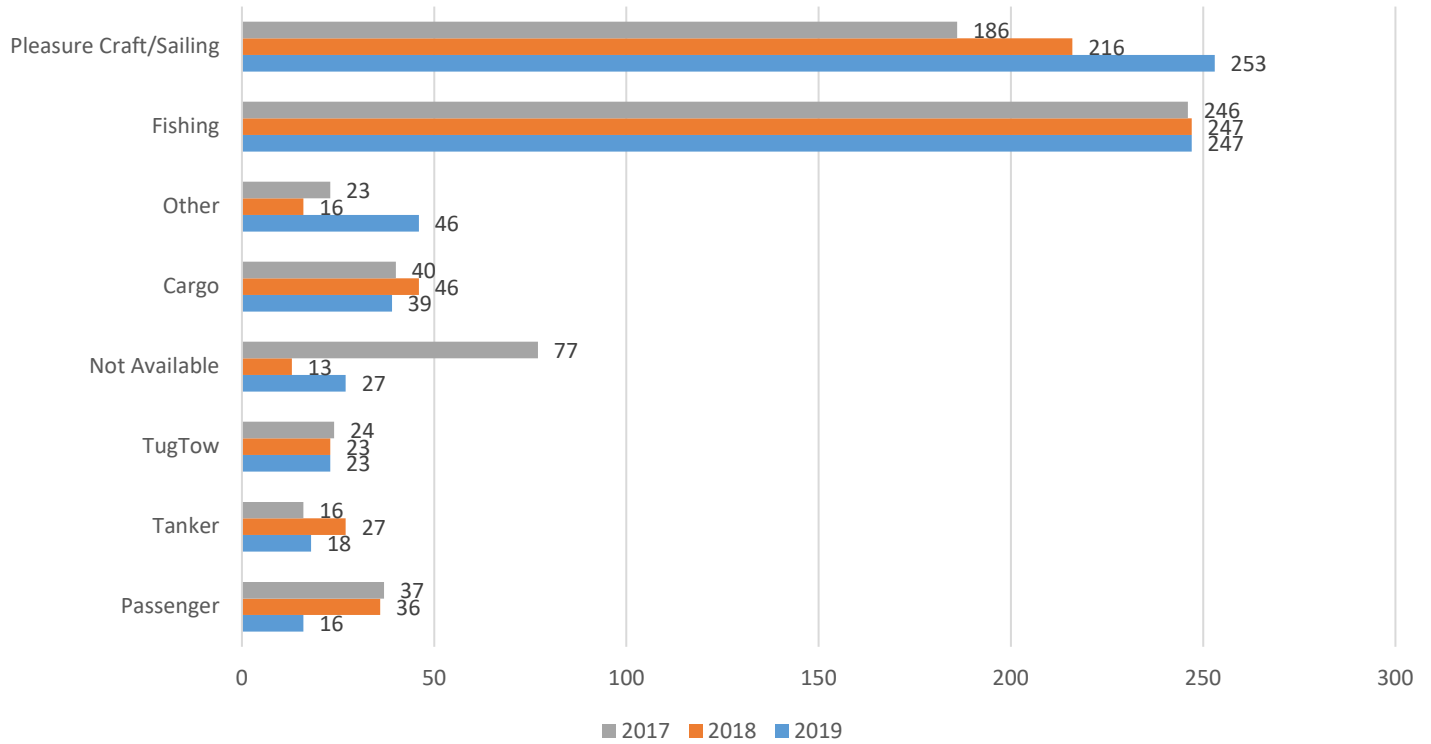


## Vessel Lengths by Tracks in Hudson Wind, 2019

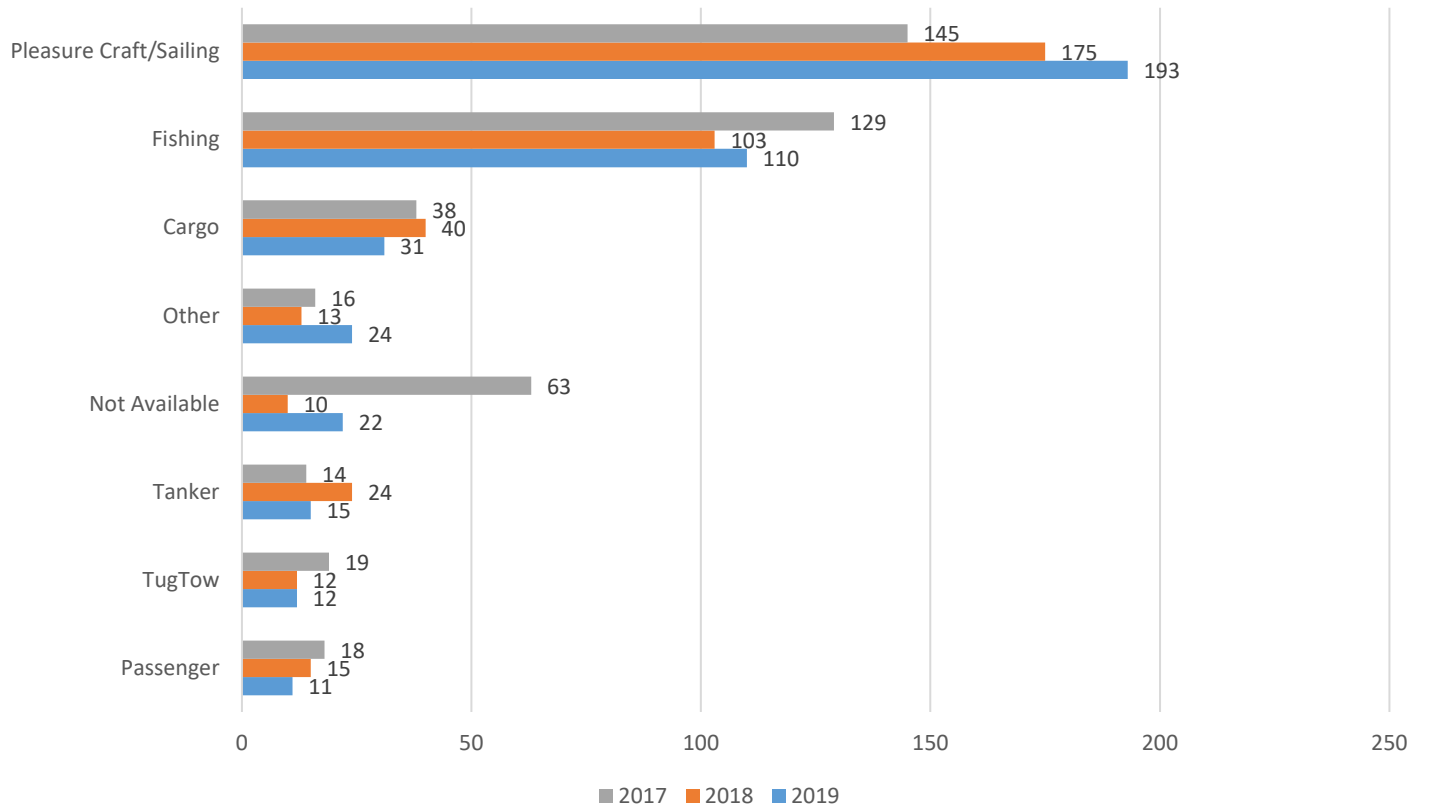


Fairways South Wind Energy Area

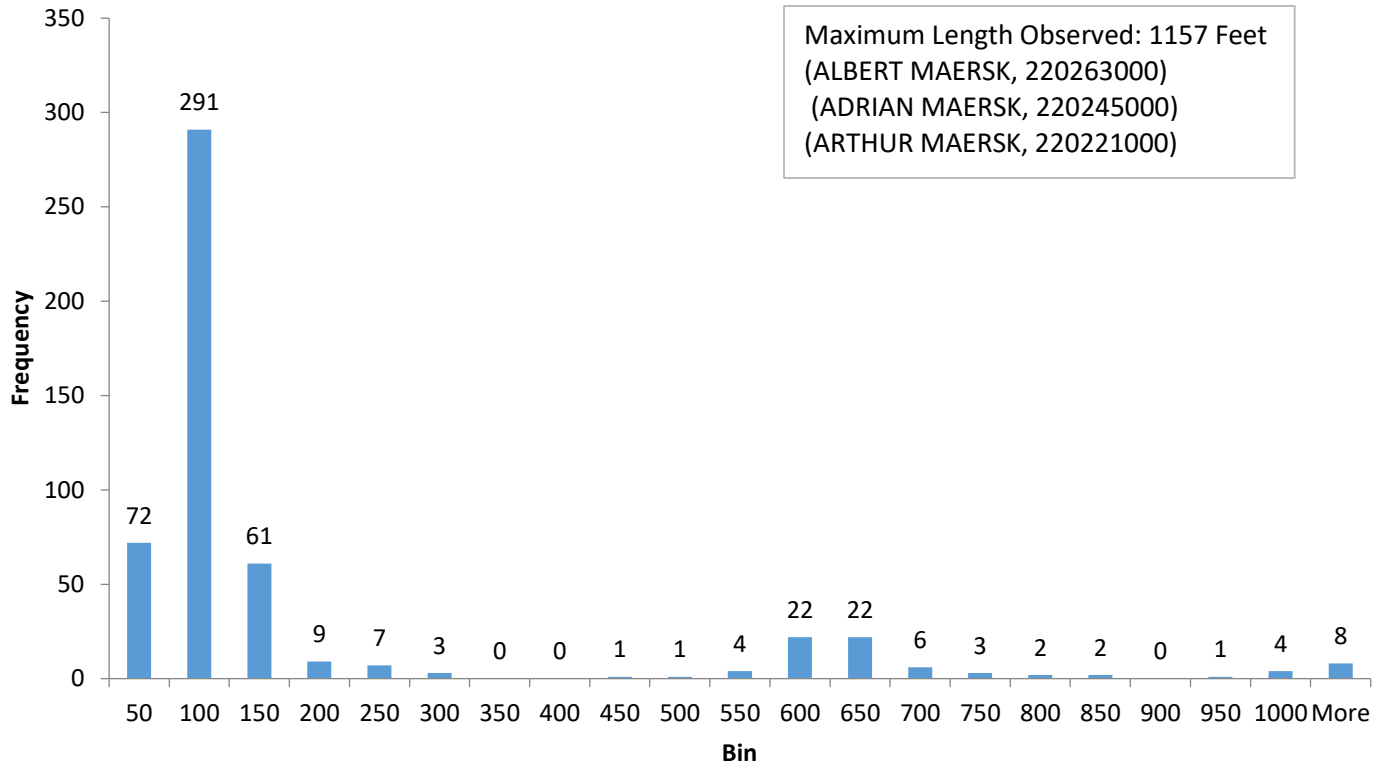
Vessel Tracks Intersecting Fairways South by Year and Type



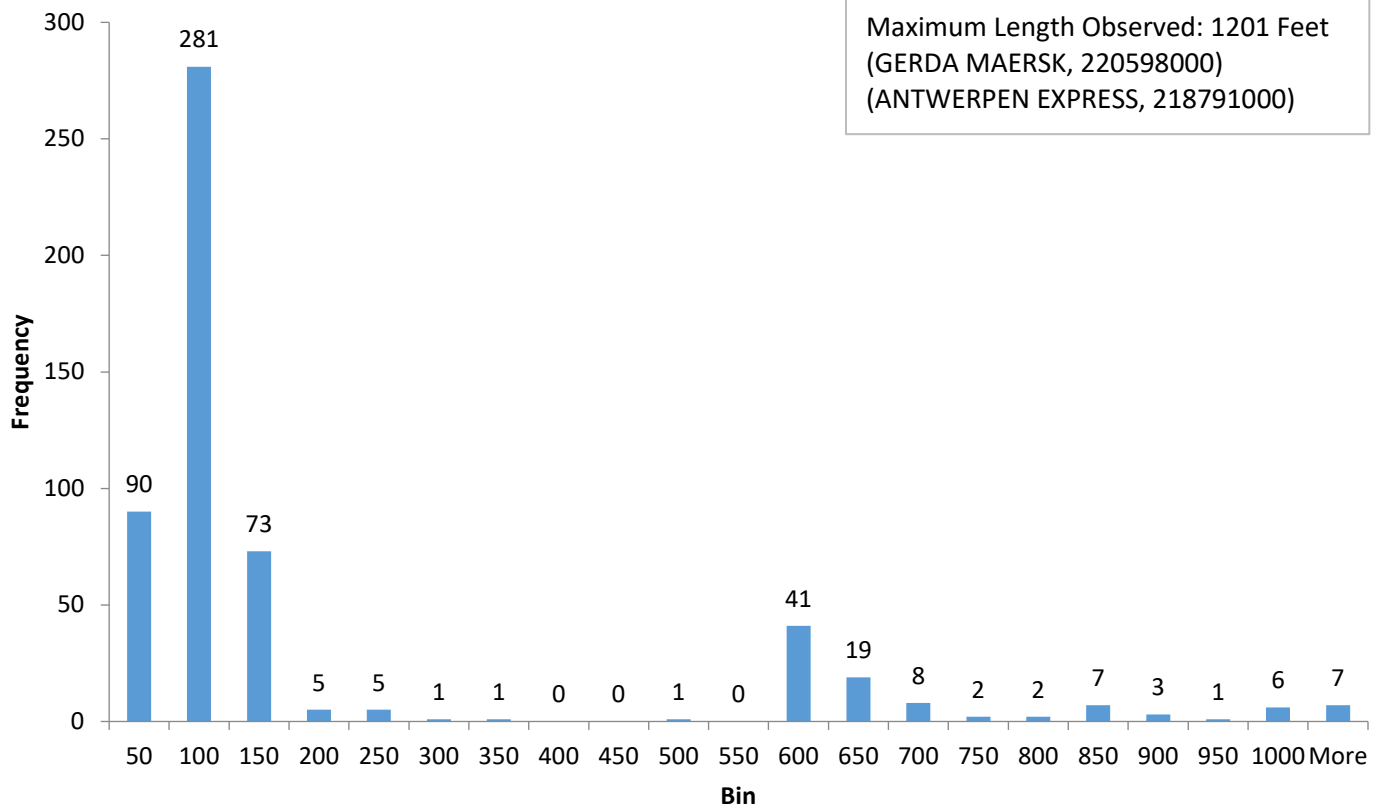
Unique Vessels Intersecting Fairways South by Year and Type



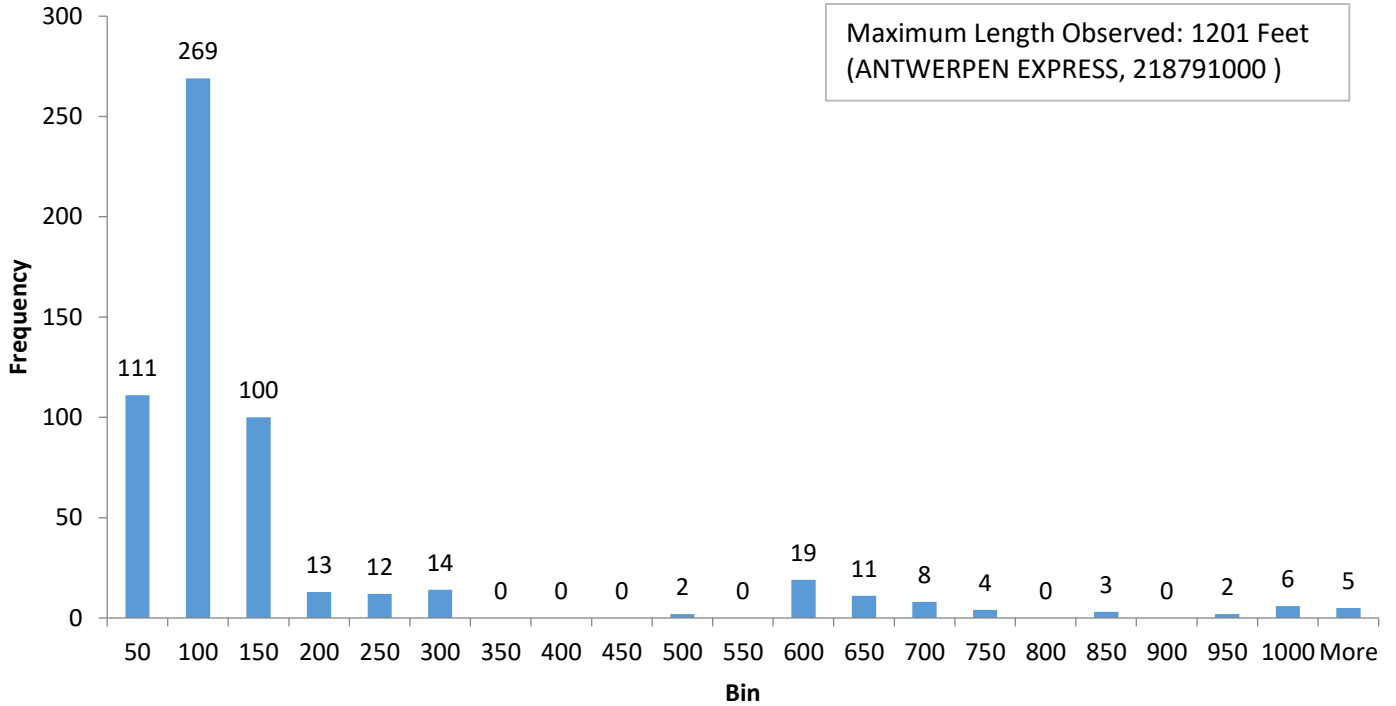
## Vessel Lengths by Tracks in Fairways South, 2017



## Vessel Lengths by Tracks in Fairways South, 2018

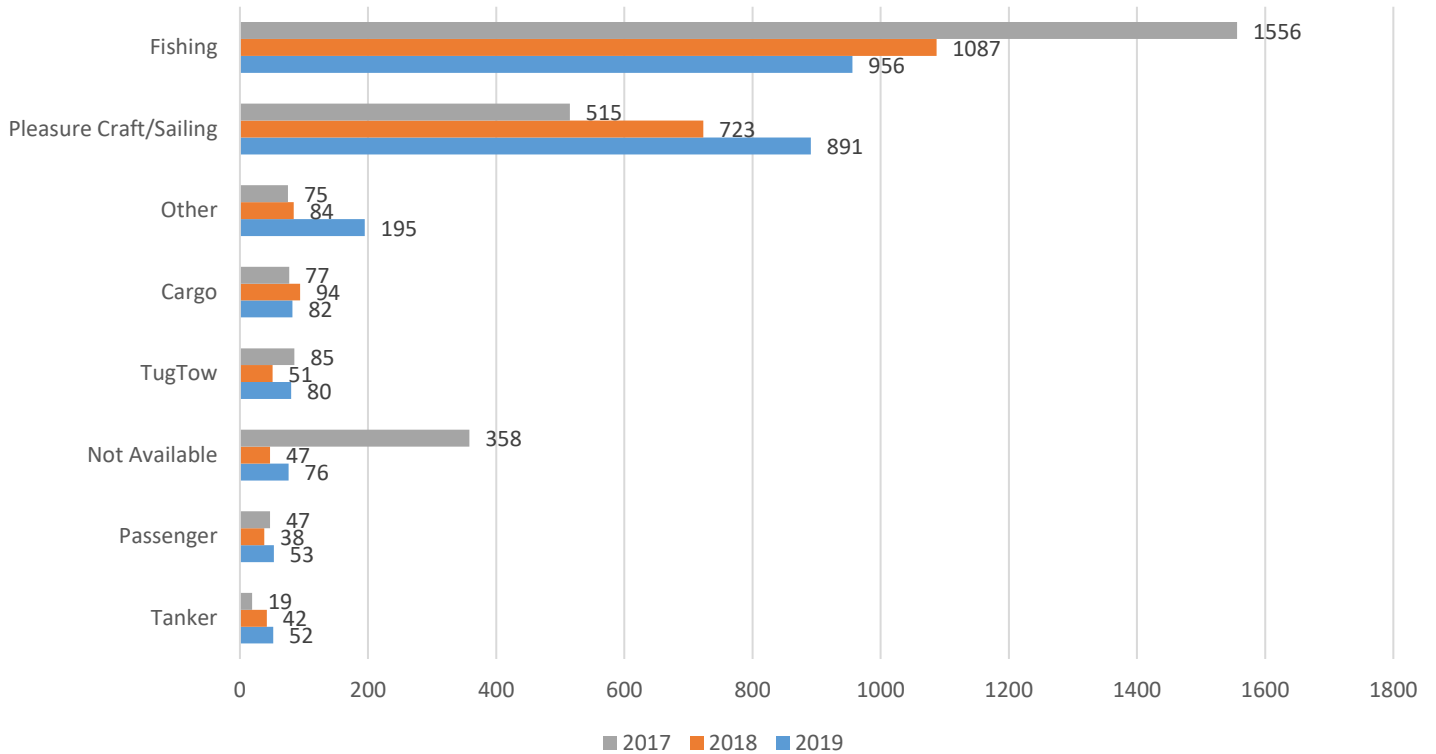


## Vessel Lengths by Tracks in Fairways South, 2019



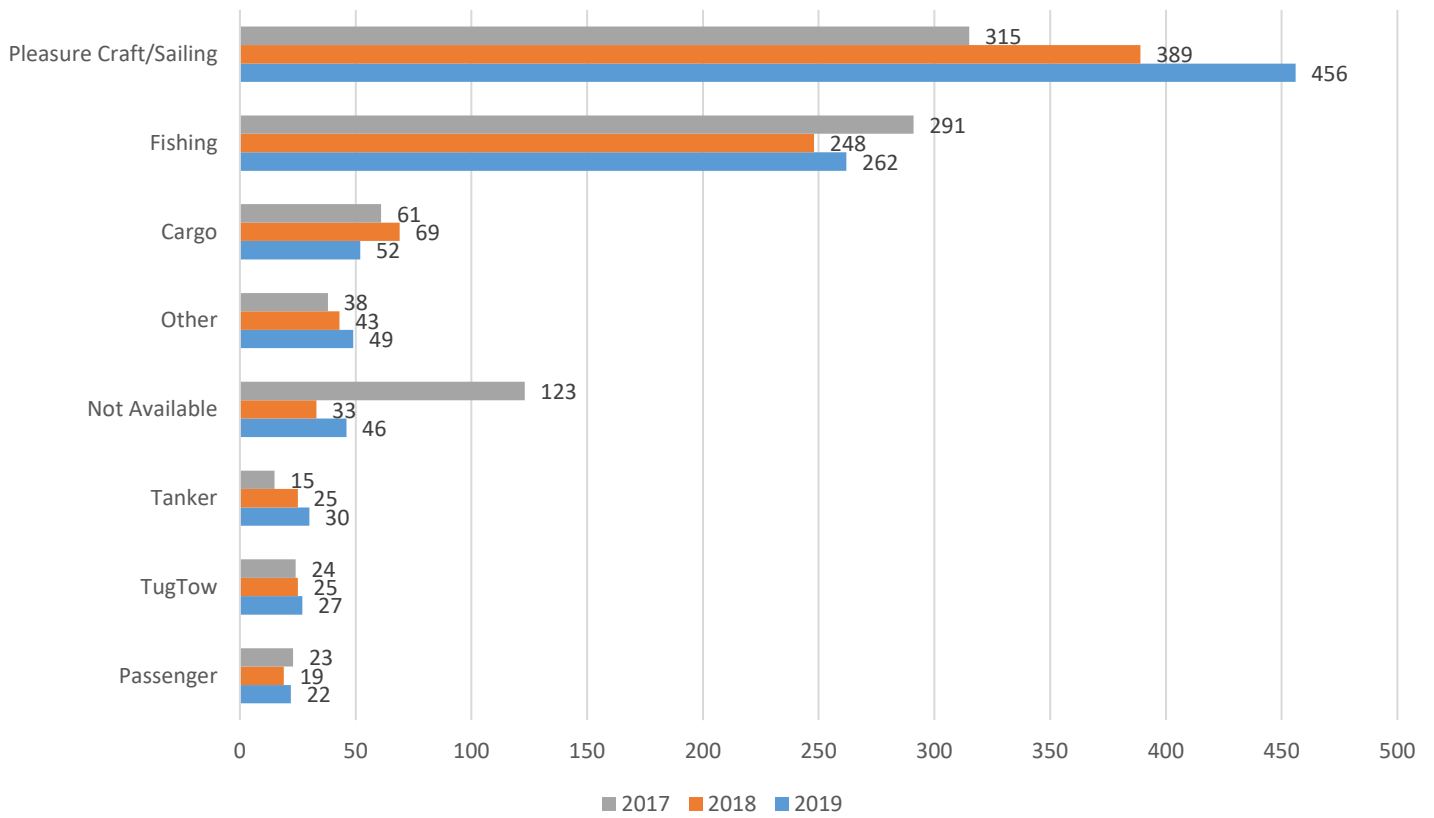
## Fairways North Wind Energy Area

### Vessel Tracks Intersecting Fairways North by Year and Type

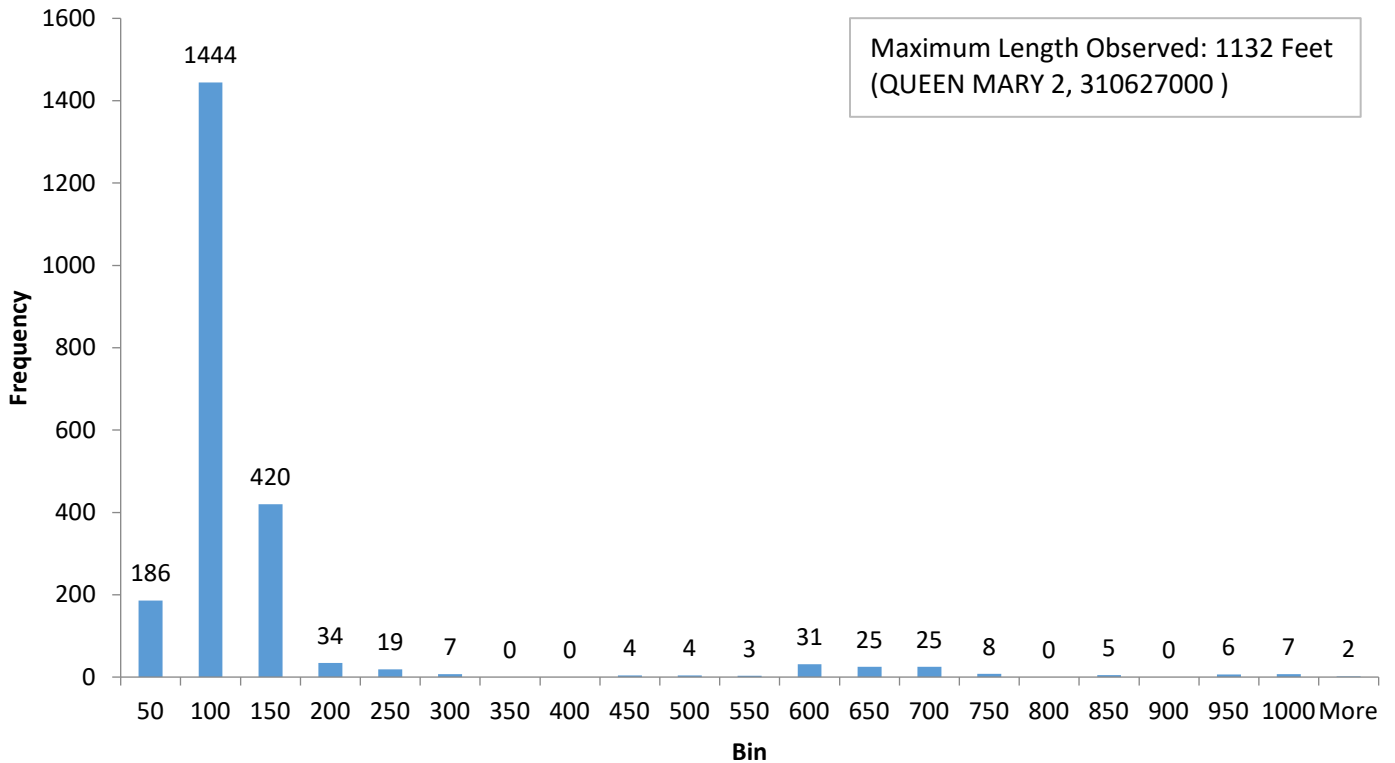




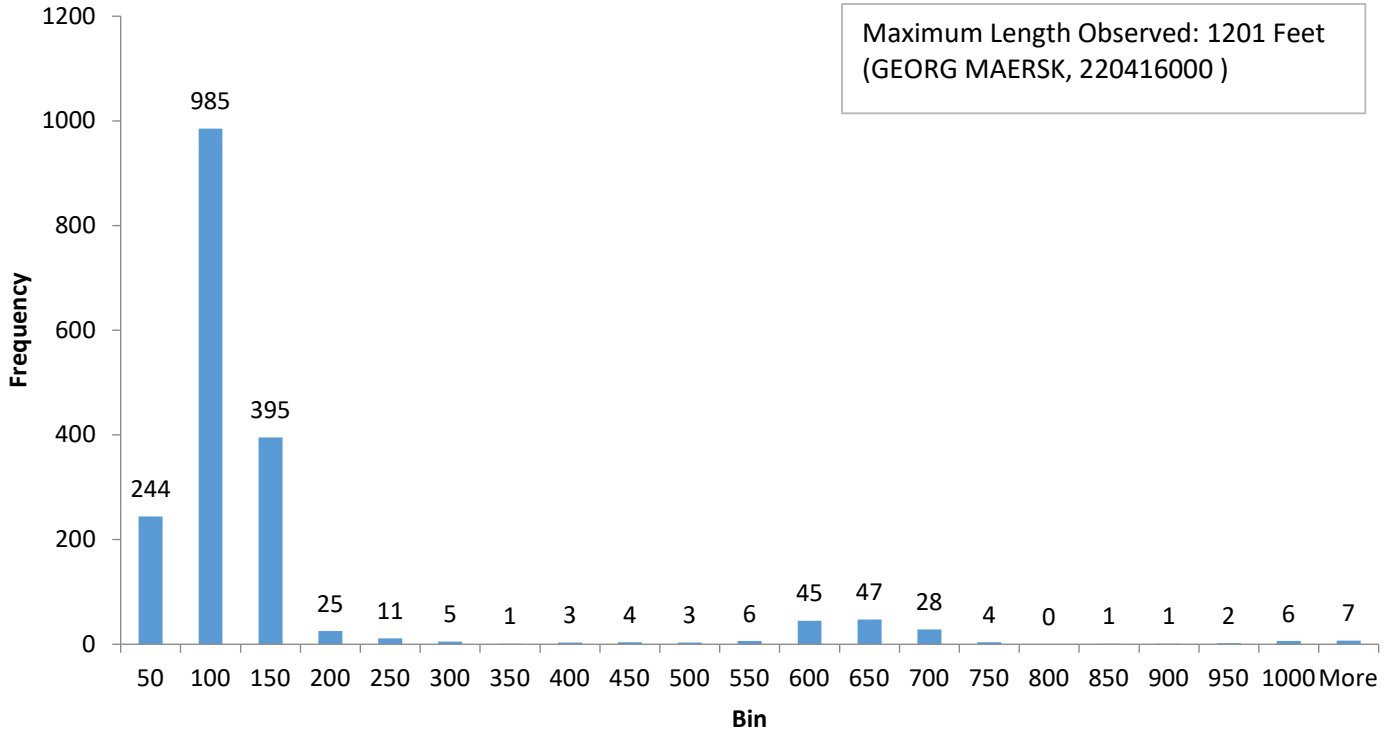
### Unique Vessels Intersecting Fairways North by Year and Type



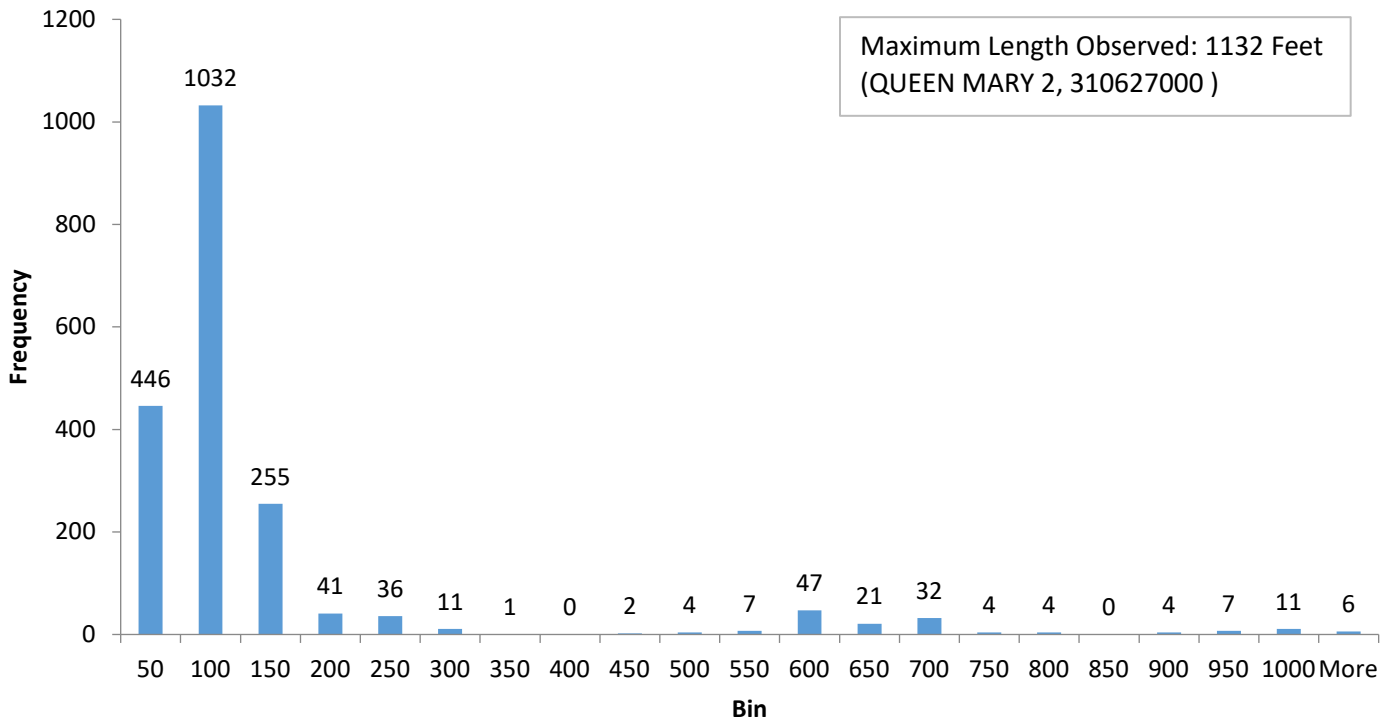
### Vessel Lengths by Tracks in Fairways North, 2017



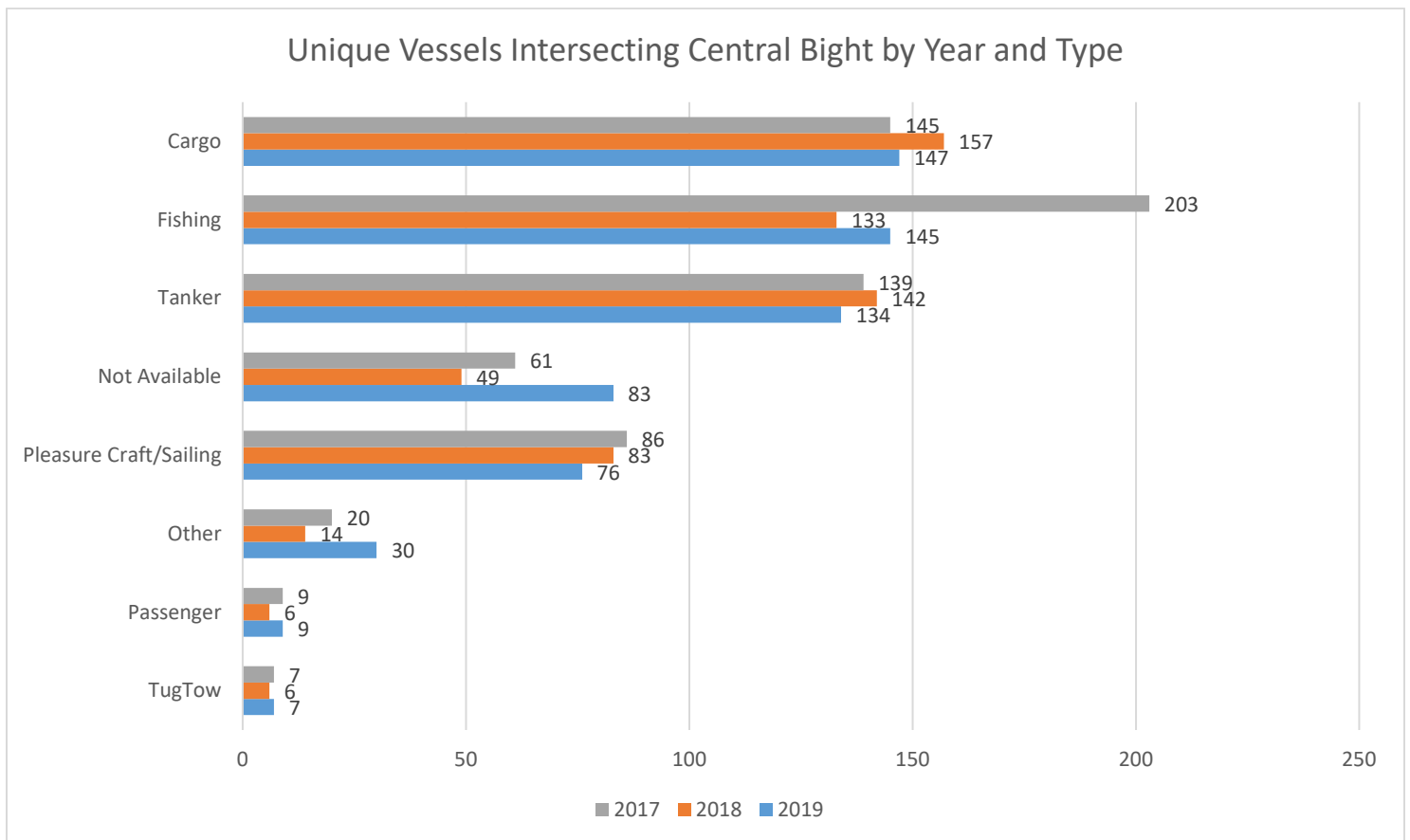
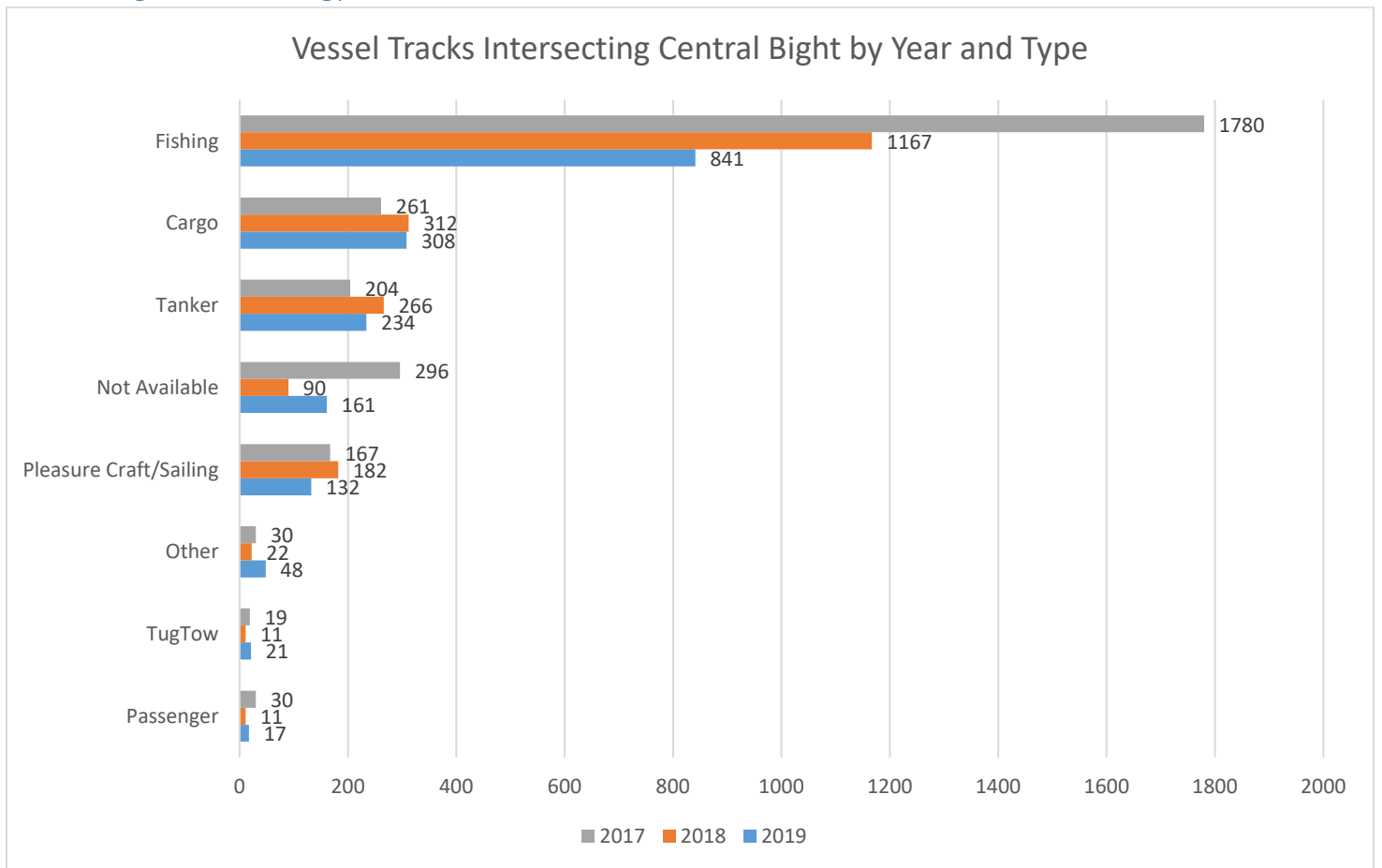
## Vessel Lengths by Tracks in Fairways North, 2018



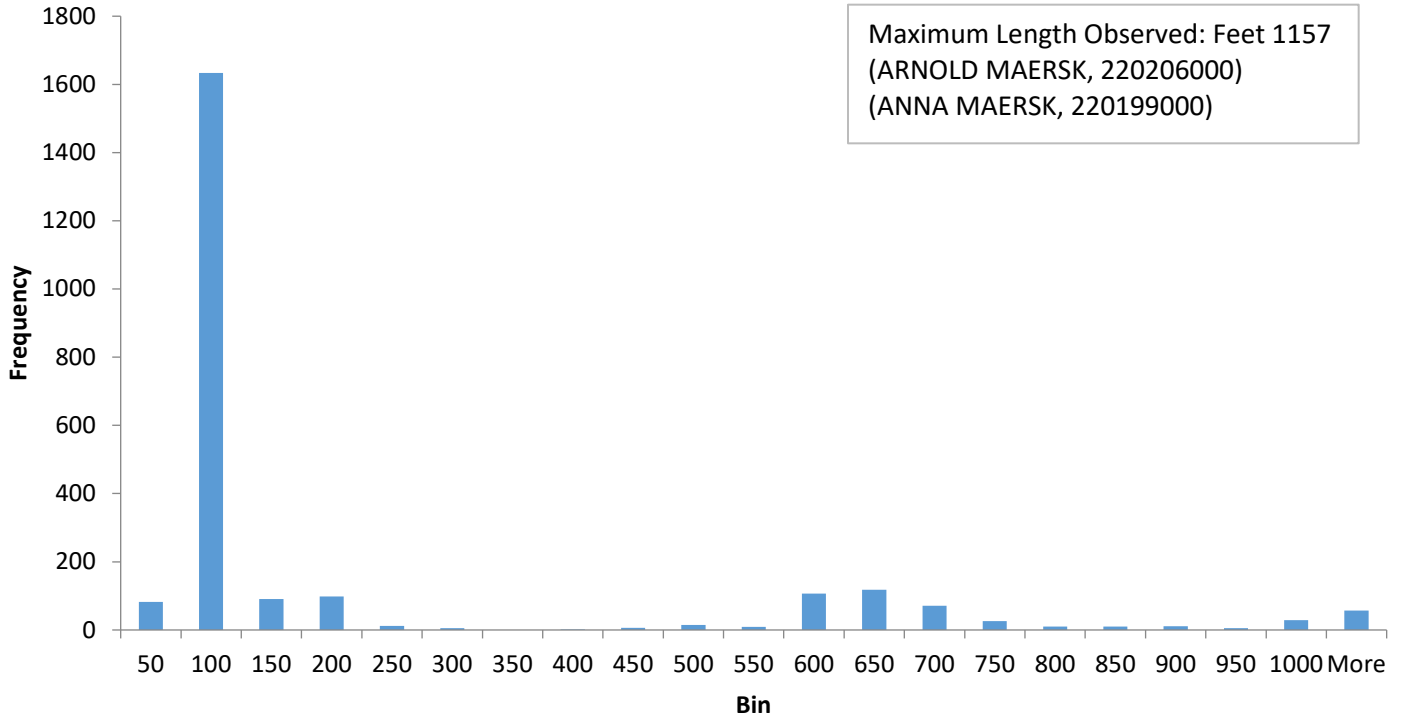
## Vessel Lengths by Tracks in Fairways North, 2019



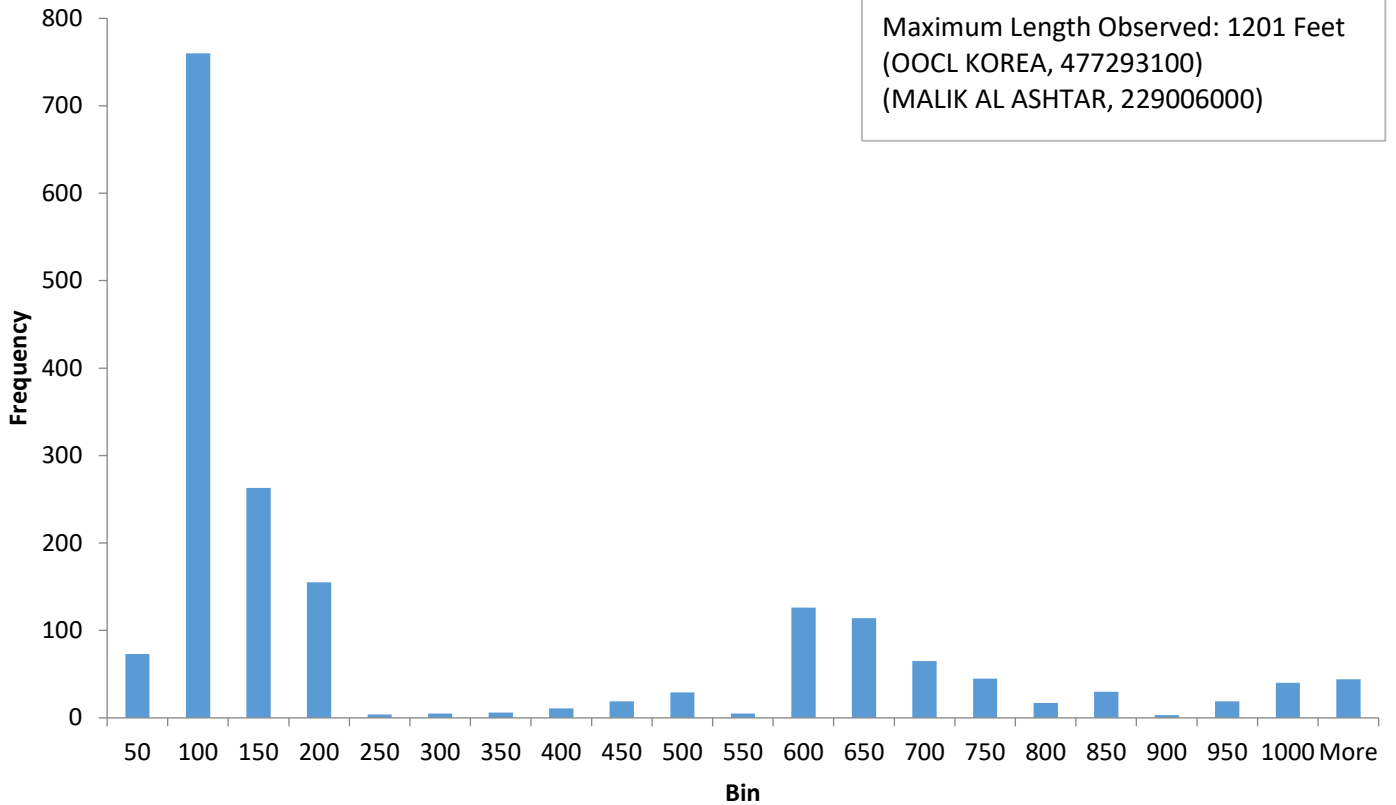
## Central Bight Wind Energy Area



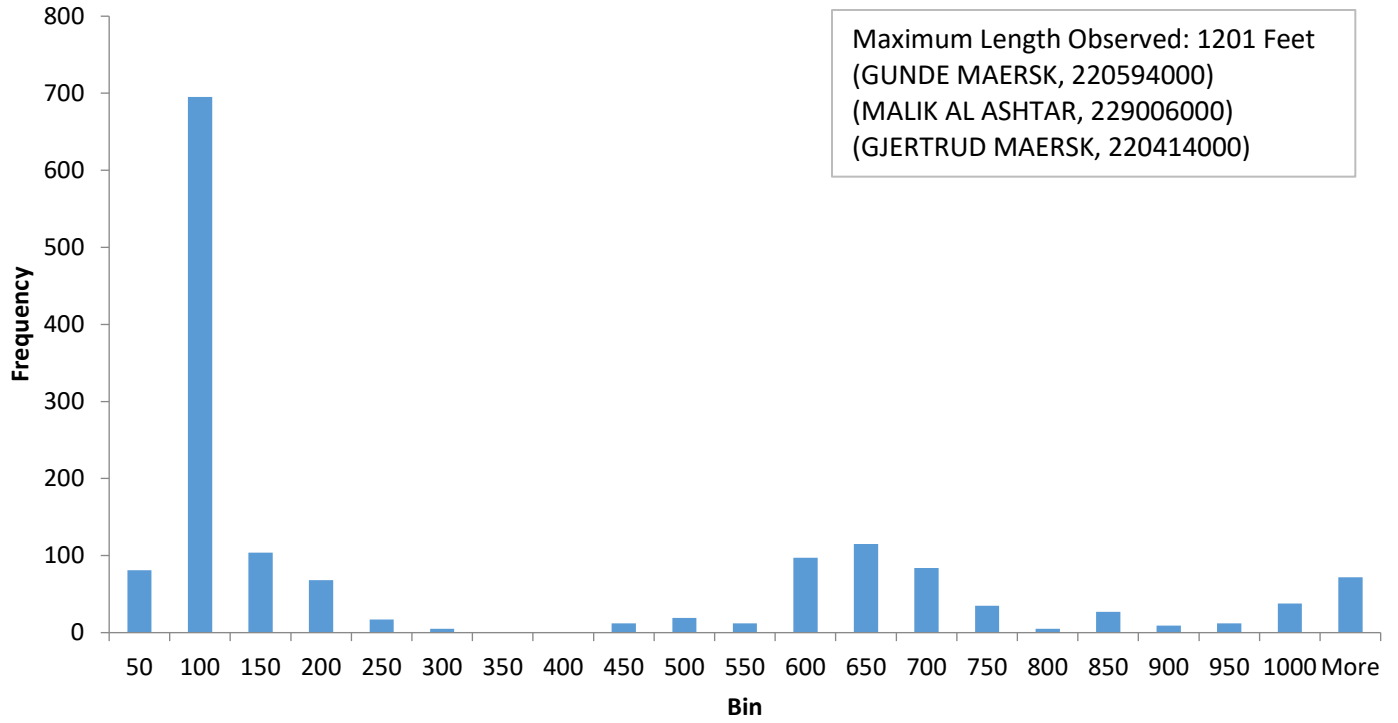
## Vessel Lengths by Tracks in Central Bight, 2017



## Vessel Lengths by Tracks in Central Bight, 2018



# Vessel Lengths by Tracks in Central Bight, 2019

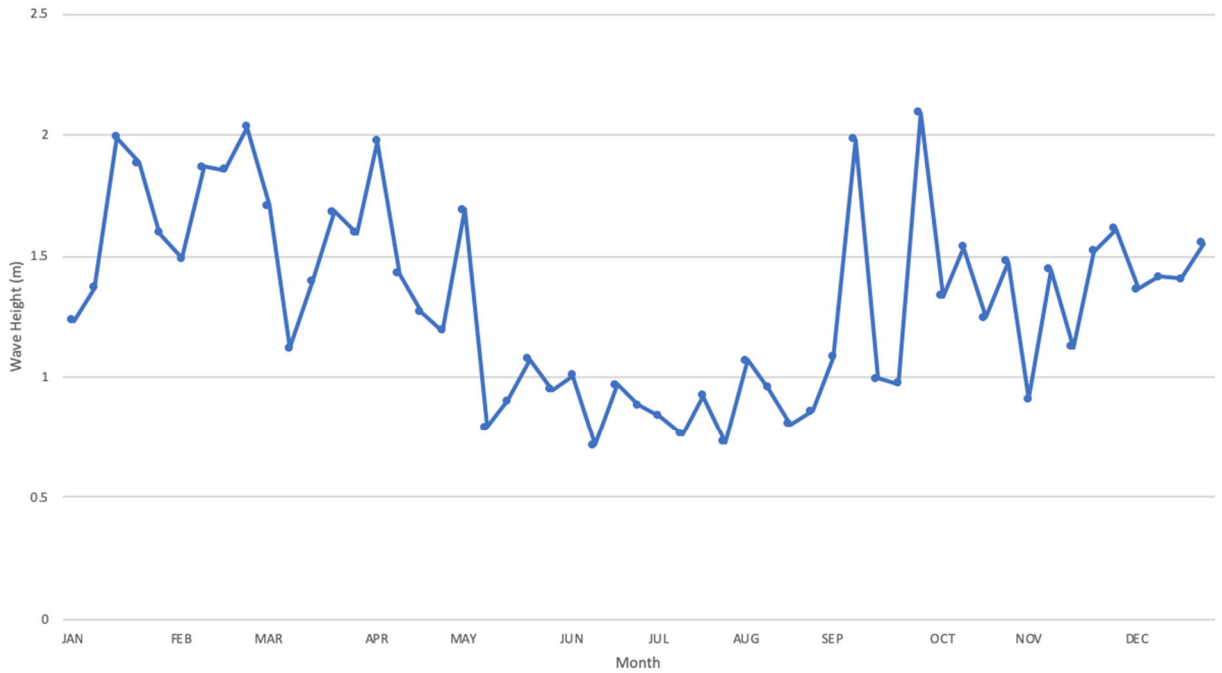


## APPENDIX H

# Weather Data

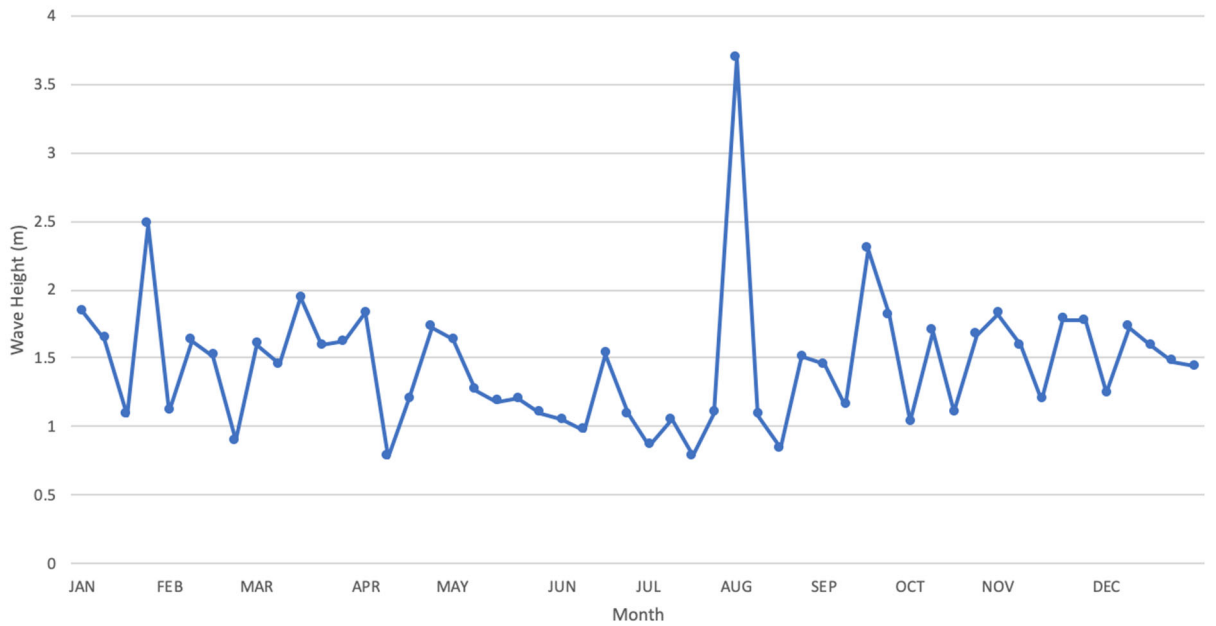
### Weekly Average Wave Height (m) - 2016

Station 44025 - Long Island, 30 NM South of Islip  
Source: National Data Buoy Center



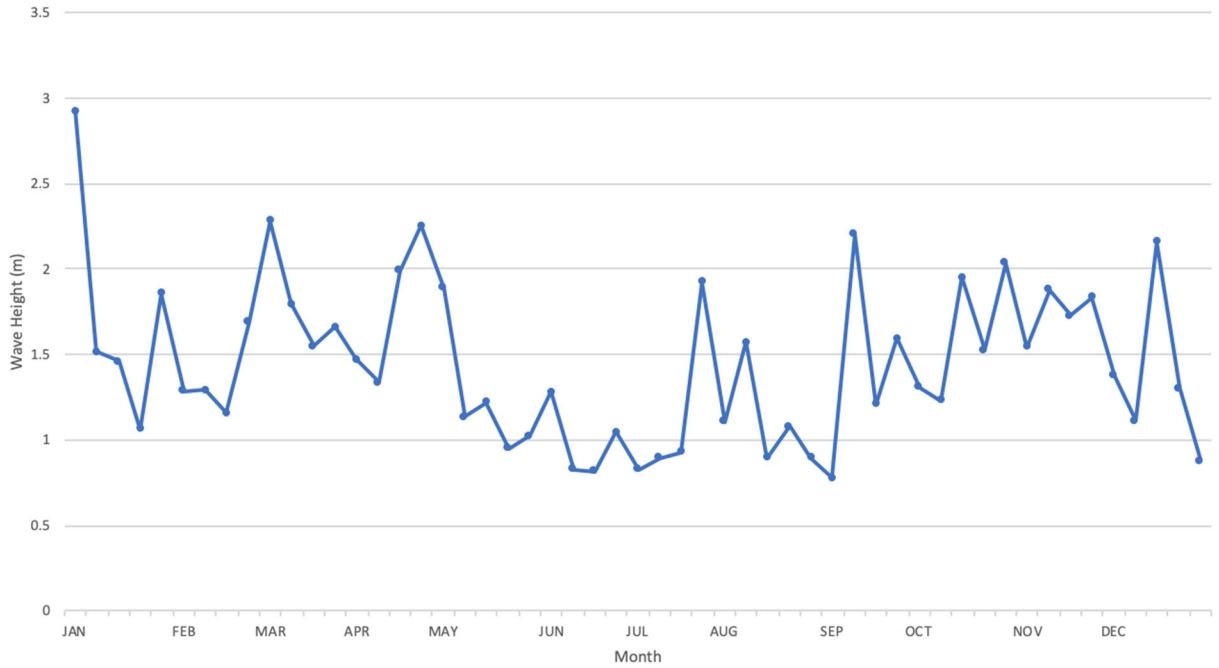
### Weekly Average Wave Height (m) - 2017

Station 44025 - Long Island, 30 NM South of Islip  
(Buoy Data Unavailable 7/30 - 8/10)  
Source: National Data Buoy Center



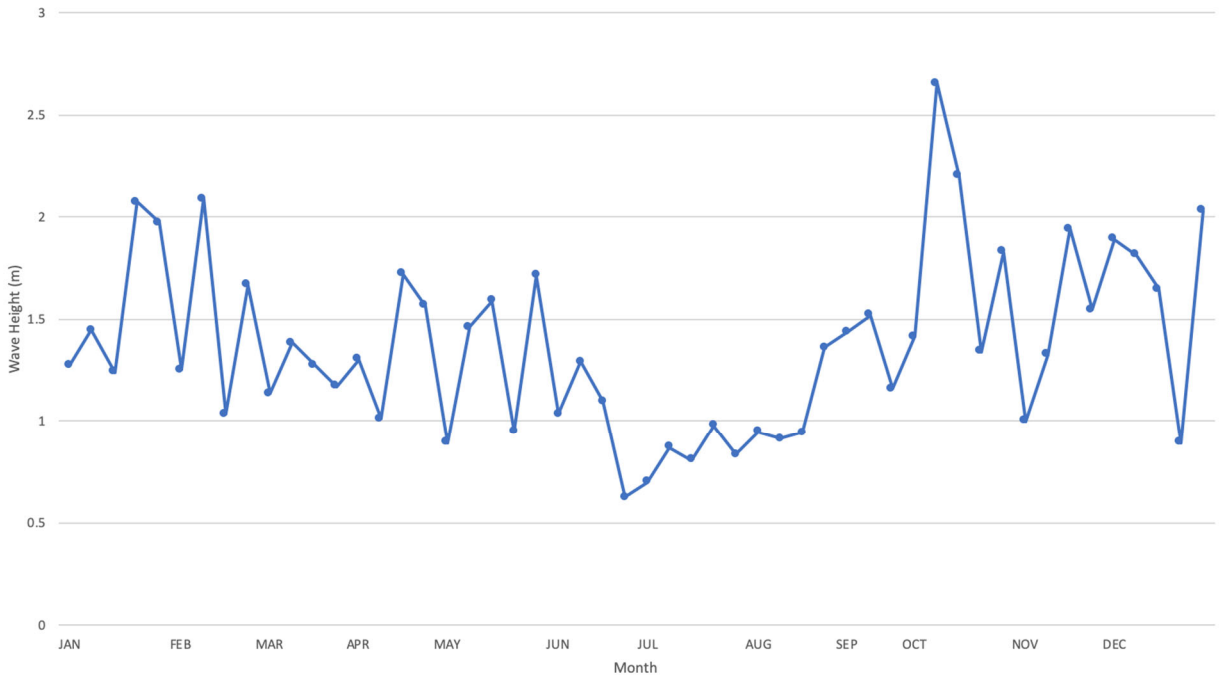
### Weekly Average Wave Height (m) - 2018

Station 44025 - Long Island, 30 NM South of Islip  
Source: National Data Buoy Center



### Weekly Average Wave Height (m) - 2019

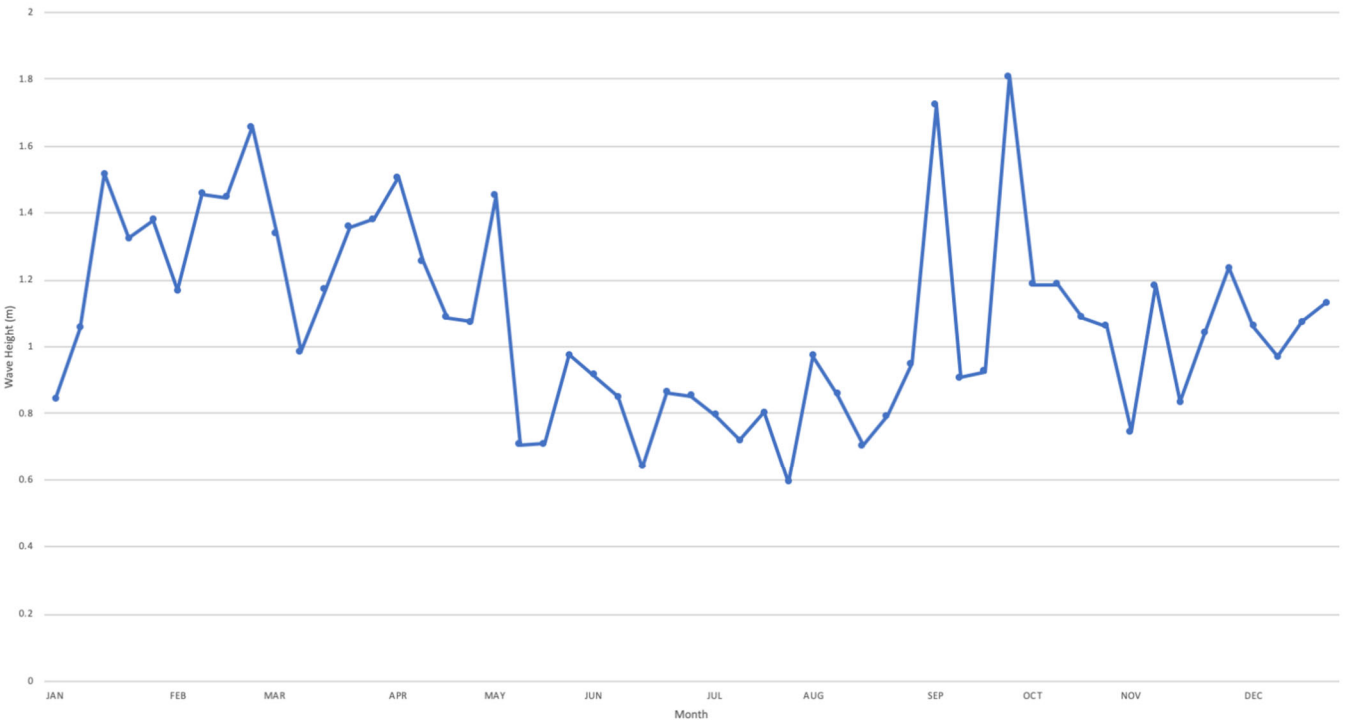
Station 44025 - Long Island, 30 NM South of Islip  
Source: National Data Buoy Center





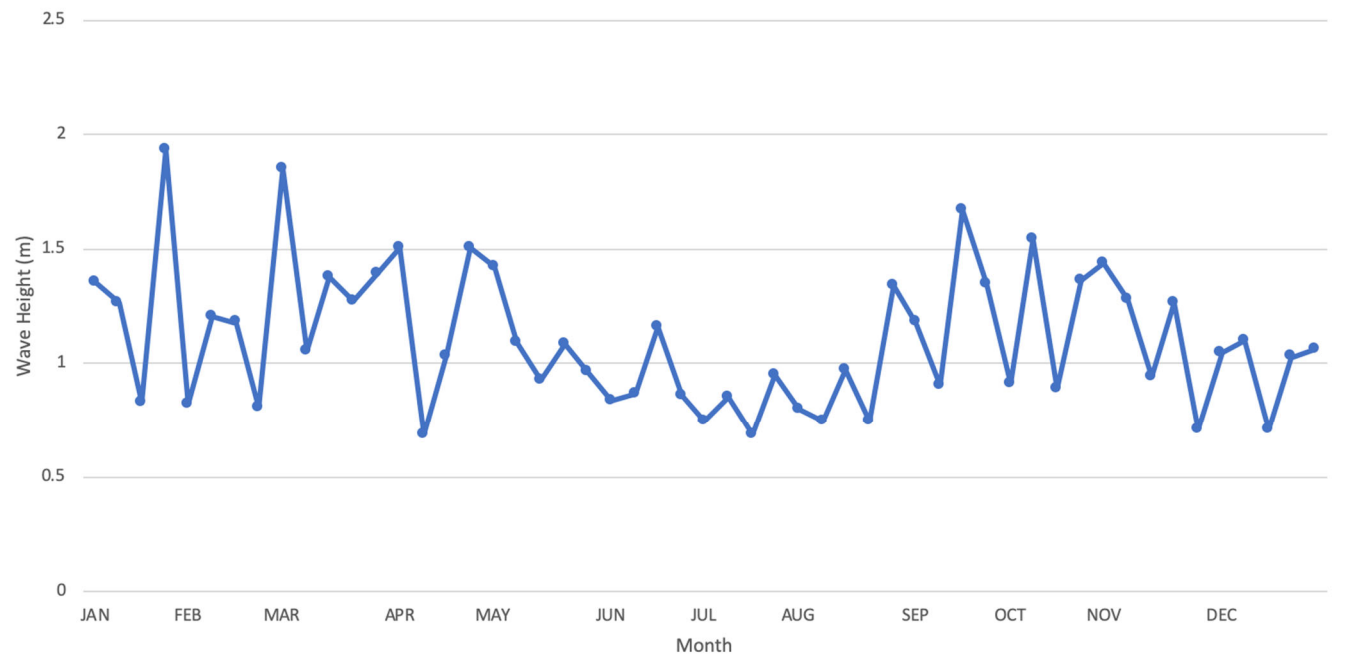
### Weekly Average Wave Height (m) - 2016

Station 44065 - New York Harbor Entrance - 15NM SE of Breezy Point, NY  
Source: National Data Buoy Center



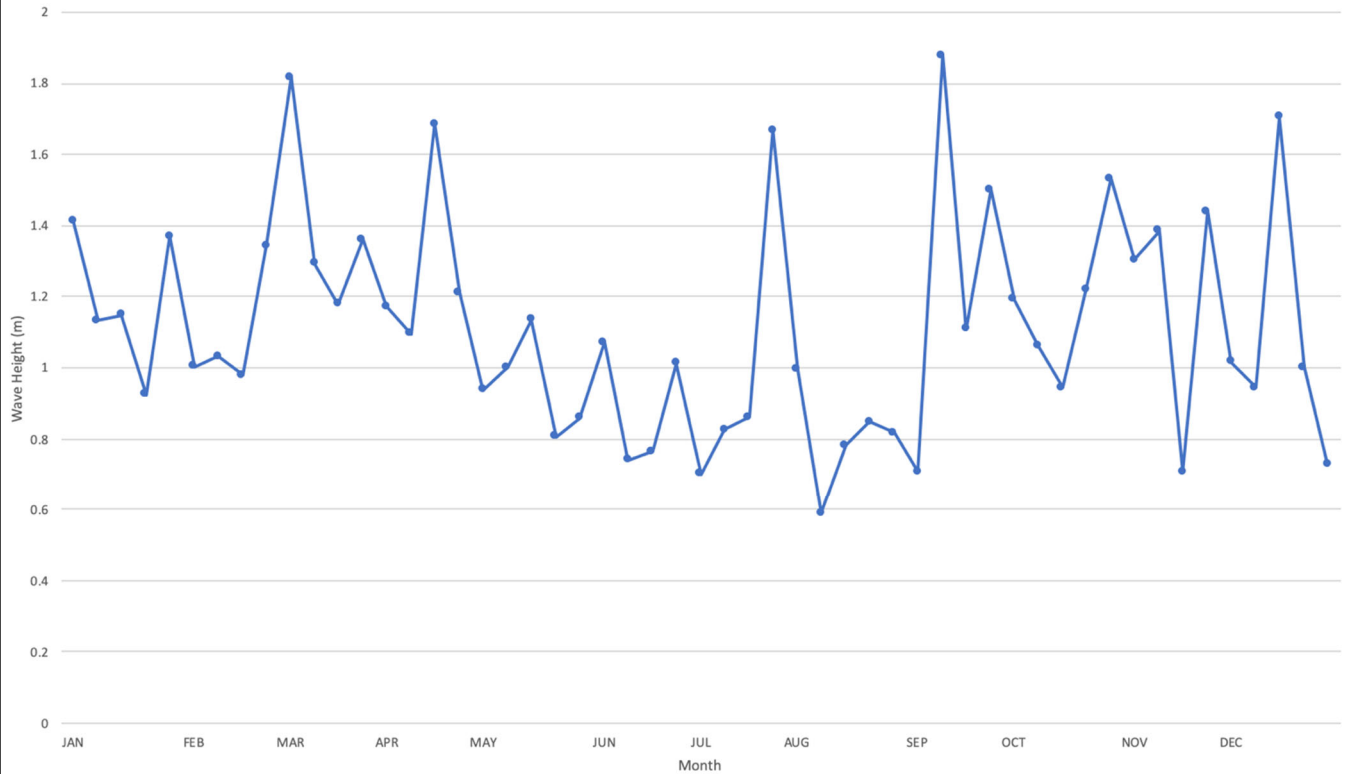
### Weekly Average Wave Height (m) - 2017

Station 44065 - New York Harbor Entrance - 15NM SE of Breezy Point, NY  
Source: National Data Buoy Center



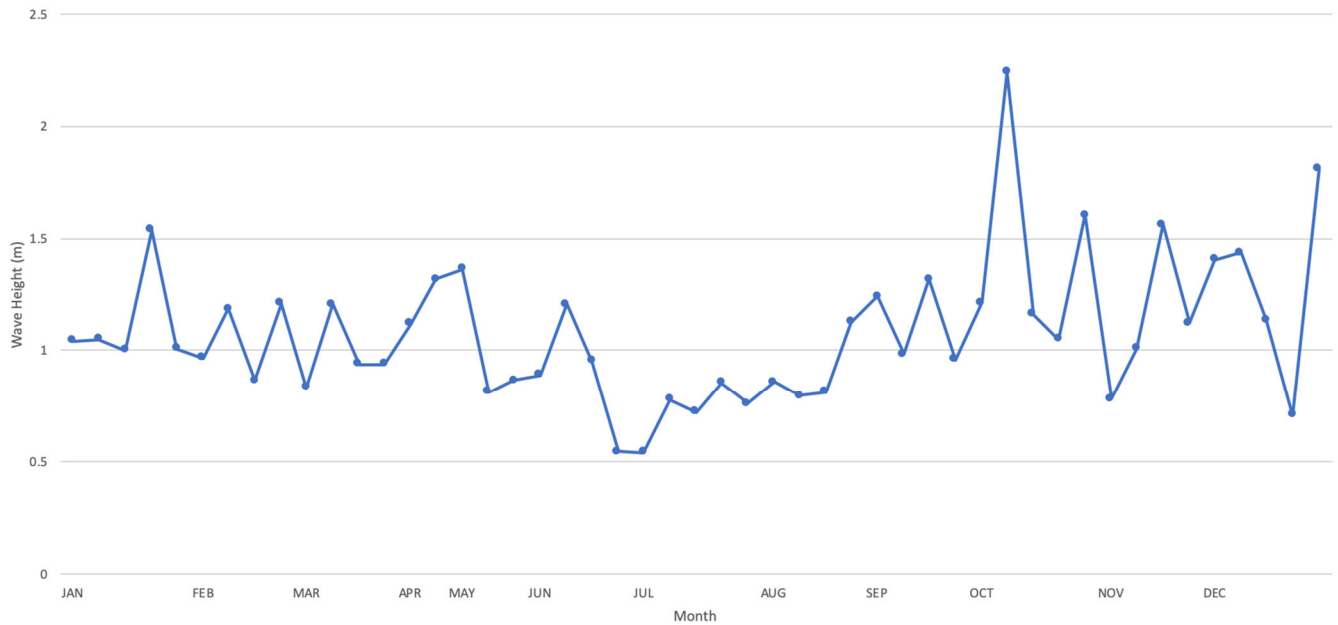
### Weekly Average Wave Height (m) - 2018

Station 44065 - New York Harbor Entrance - 15NM SE of Breezy Point, NY  
Source: National Data Buoy Center



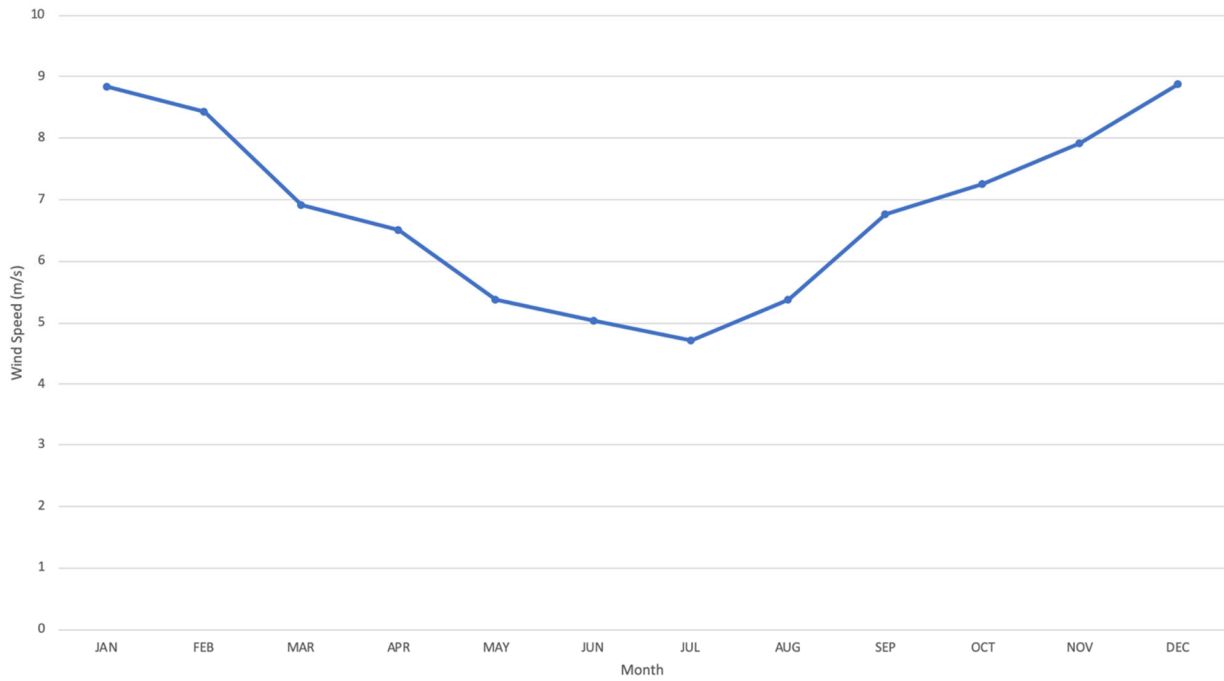
### Weekly Average Wave Height (m) - 2019

Station 44065 - New York Harbor Entrance - 15NM SE of Breezy Point, NY  
(Buoy Data Unavailable 4/7 - 5/9)  
Source: National Data Buoy Center



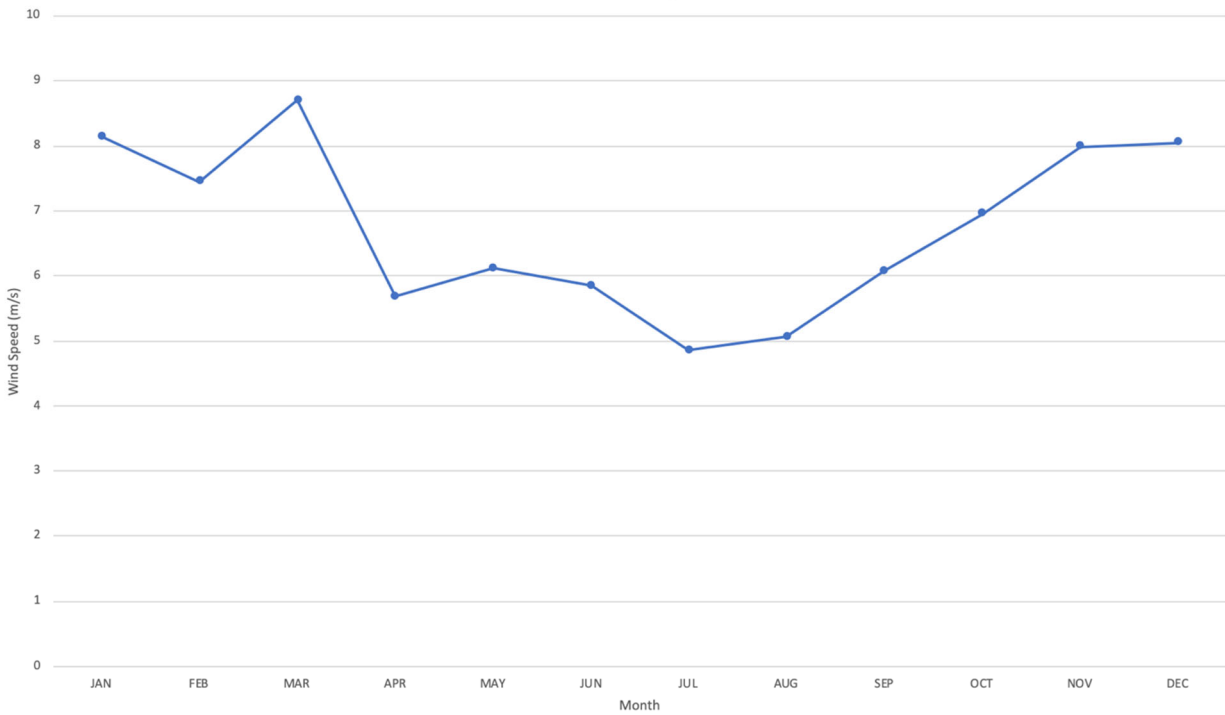
### Monthly Average Wind Speed (m/s)- 2016

Station 44025 - Long Island, 30 NM South of Islip  
Source: National Data Buoy Center



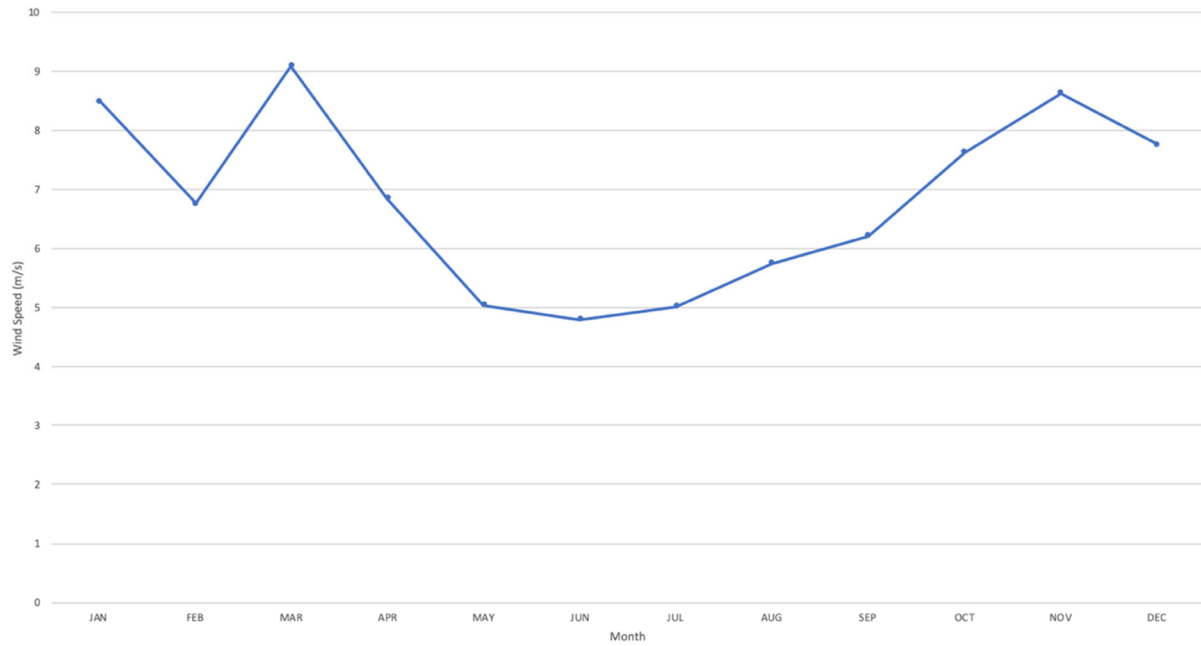
### Monthly Average Wind Speed (m/s)- 2017

Station 44025 - Long Island, 30 NM South of Islip  
(Buoy Data Unavailable 7/30 - 8/10)  
Source: National Data Buoy Center



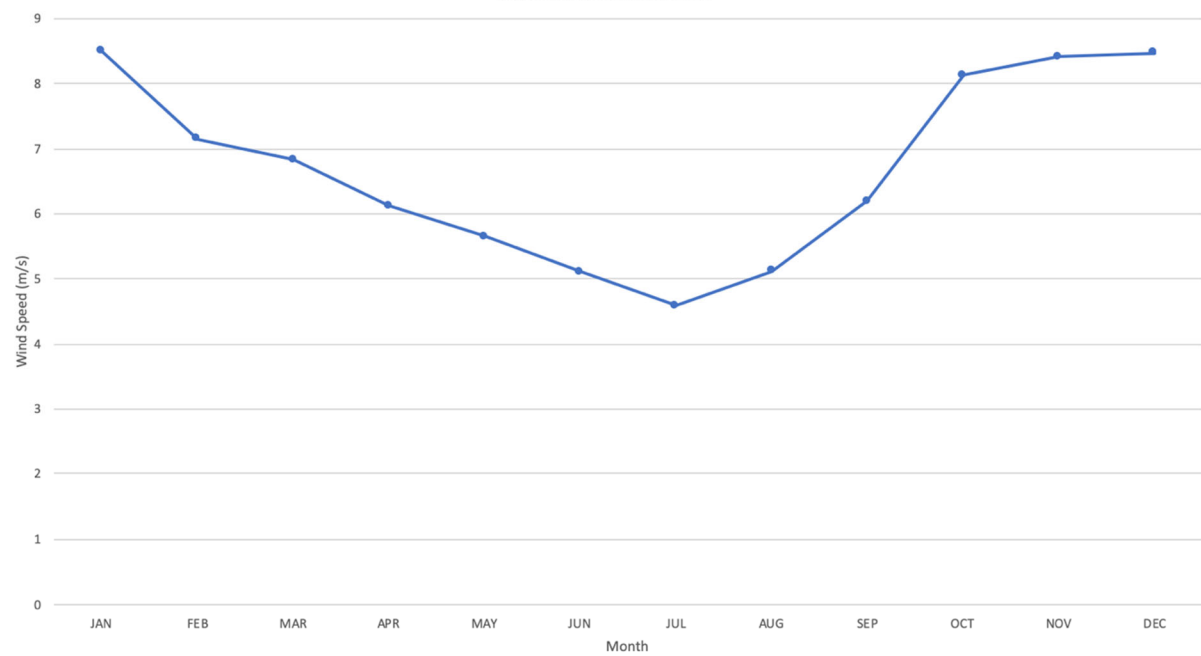
### Monthly Average Wind Speed (m/s)- 2018

Station 44025 - Long Island, 30 NM South of Islip  
Source: National Data Buoy Center



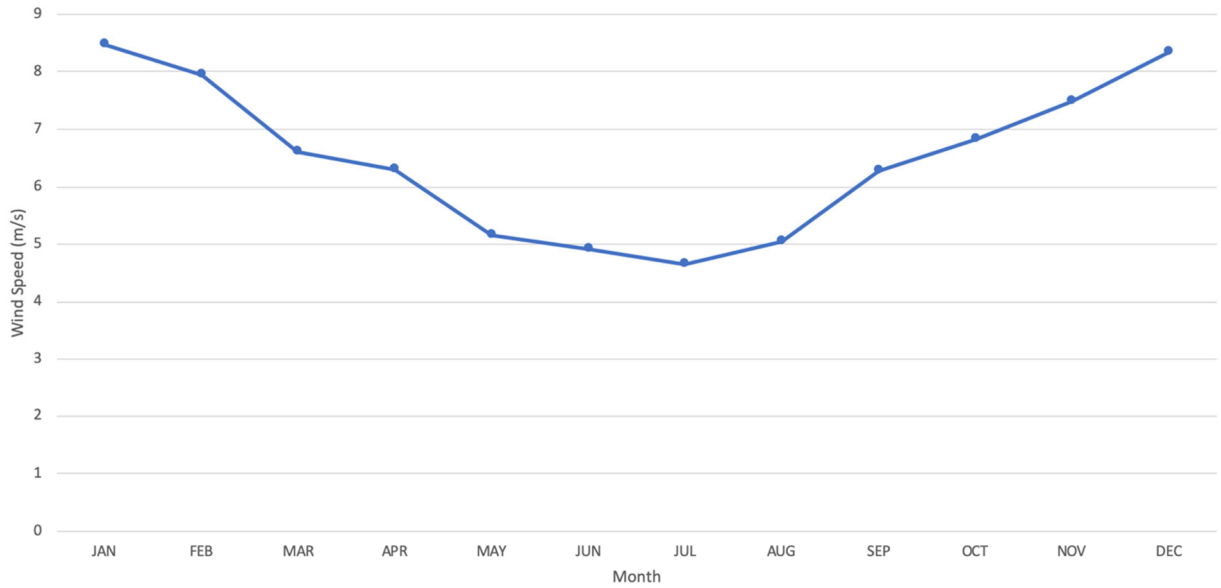
### Monthly Average Wind Speed (m/s)- 2019

Station 44025 - Long Island, 30 NM South of Islip  
Source: National Data Buoy Center



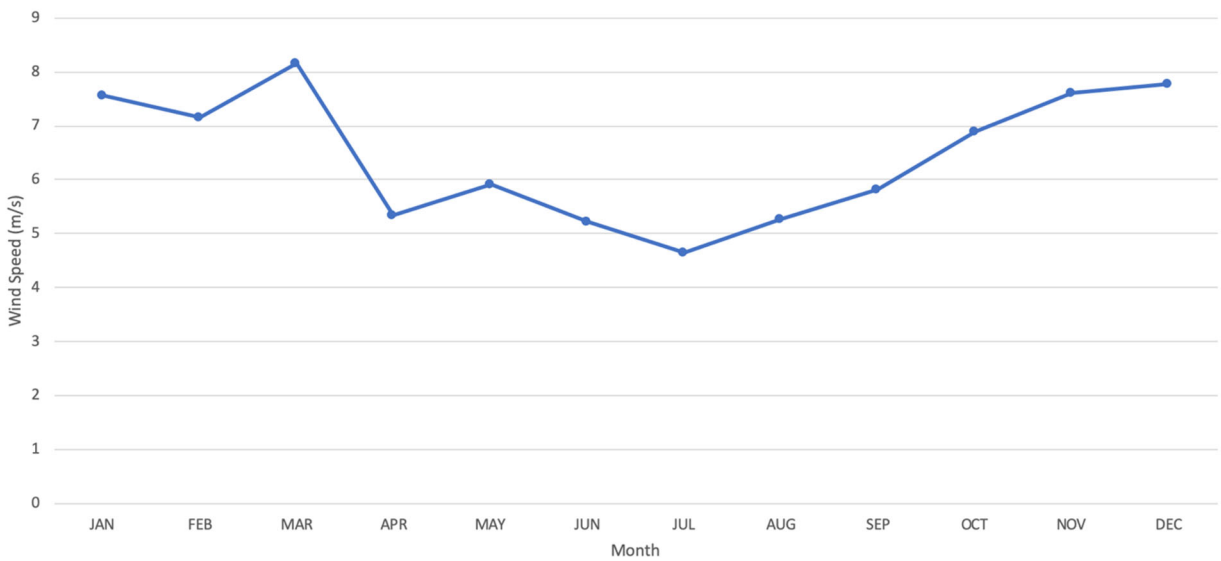
### Monthly Average Wind Speed (m/s) - 2016

Station 44065 - New York Harbor Entrance, 15 NM SE of Breezy Point, NY  
Source: National Data Buoy Center



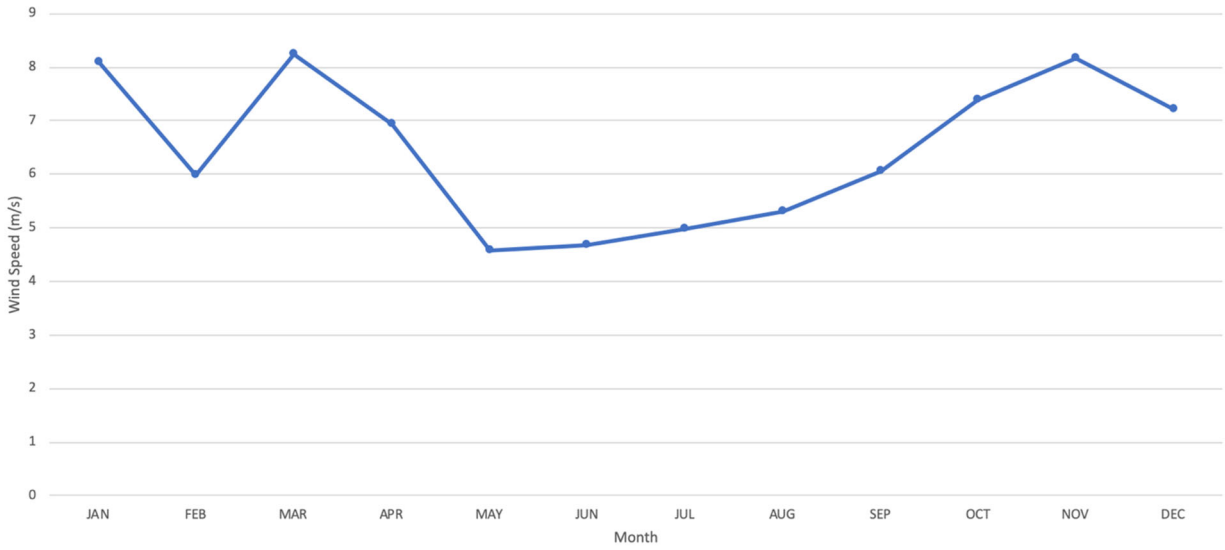
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Source: National Data Buoy Center



### Monthly Average Wind Speed (m/s) - 2019

Station 44065 - New York Harbor Entrance, 15 NM SE of Breezy Point, NY  
Source: National Data Buoy Center

