

Supplementary Material

Table S1: AIS vessel category, vessel type, and partitioning for analysis, where “category” is the allocation to the categories delineated by Wiley et al. (2011), “Marine cadastre category” is the vessel category delineated by the data source (BOEM/NOAA 2019), and “AIS classification” is the vessel type classification delineated by the data source (BOEM/NOAA 2019).

Category	Marine Cadastre Category	AIS Classification	
Cargo/Container	Cargo	Cargo, all ships of this type	
		Cargo, hazardous category A	
		Cargo, hazardous category B	
		Cargo, hazardous category C	
		Cargo, hazardous category D	
		Cargo, reserved for future use	
		Cargo, reserved for future use	
		Cargo, reserved for future use	
		Cargo, reserved for future use	
		Cargo, no additional information	
		Freight Barge	
		Freight Ship	
		Public Freight	
Fishing	Fishing	Fishing	
		Commercial Fishing Vessel	
		Fish Processing Vessel	
Passenger	Pleasure Craft/Sailing	Sailing	
		Pleasure Craft	
	Other	High speed craft (HSC), all ships of this type	
		High speed craft (HSC), hazardous category A	
		High speed craft (HSC), hazardous category B	
		High speed craft (HSC), hazardous category C	
		High speed craft (HSC), hazardous category D	
		High speed craft (HSC), reserved for future use	
		High speed craft (HSC), reserved for future use	
		High speed craft (HSC), reserved for future use	
		High speed craft (HSC), reserved for future use	
	High speed craft (HSC), no additional information		
	Passenger	Passenger	Passenger, all ships of this type
			Passenger, hazardous category A
			Passenger, hazardous category B
			Passenger, hazardous category C
			Passenger, hazardous category D
			Passenger, reserved for future use
			Passenger, reserved for future use
Passenger, reserved for future use			

		Passenger, reserved for future use
		Passenger, no additional information
		Passenger (Inspected)
		Passenger (Uninspected)
		Passenger Barge (Inspected)
		Passenger Barge (Uninspected)
		Recreational
Service/Research	Military	SAR Aircraft
		Military Operations
	Other	Pilot Vessel
		Search and Rescue vessel
		Port Tender
		Anti-pollution equipment
		Law Enforcement
		Medical Transport
		Industrial Vessel
		Mobile Offshore Drilling Unit
		Offshore Supply Vessel
		Oil Recovery
		Public Vessel, Unclassified
		Research Vessel
		Dredging or underwater operations
		Diving operations
School Ship		
Tanker	Tanker	Tanker, all ships of this type
		Tanker, hazardous category A
		Tanker, hazardous category B
		Tanker, hazardous category C
		Tanker, hazardous category D
		Tanker, reserved for future use
		Tanker, reserved for future use
		Tanker, reserved for future use
		Tanker, reserved for future use
		Tanker, no additional information
		Public Tankship/Barge
		Tank Ship
Tug	Tug Tow	Wing in ground (WIG), hazardous category A
		Wing in ground (WIG), hazardous category B
		Towing
		Towing: length exceeds 200m or breadth exceeds 25m
		Tug
		Tank Barge
		Towing Vessel

Table S2: Humpback whale sightings from shipboard surveys in 2018 and 2019. The number measured with the UAV indicates the number of individual humpback whales for which morphometric data were obtained from the UAV.

Sighting Date	Group size	No. Individuals Measured with UAV	Distance from Shore (km)	Foraging Behavior
07/16/2018	1	1	46.13	None observed
07/16/2018	18	0	62.72	Cooperative
07/20/2018	1	0	88.33	None observed
07/20/2018	1	0	31.54	None observed
08/06/2018	3	2	19.05	None observed
08/06/2018	1	1	20.68	None observed
08/09/2018	1	1	20.75	None observed
08/09/2018	1	1	20.63	None observed
08/24/2018	1	1	1.21	Surface Lunge
08/24/2018	3	3	23.84	None observed
05/29/2019	1	0	1.118	None observed
05/29/2019	1	0	1.02	None observed
05/30/2019	1	0	83.22	None observed
06/12/2019	1	0	1.39	Surface Lunge
06/12/2019	3	2	1.17	None observed
06/12/2019	1	1	1.61	None observed
06/24/2019	1	1	1.46	Surface Lunge
06/27/2019	1	1	53.22	Cooperative
06/27/2019	3	3	45.22	None observed
06/27/2019	1	1	44.96	None observed
06/27/2019	4	4	42.15	Cooperative
06/27/2019	4	3	42.93	Cooperative
06/28/2019	5	4	51.64	Cooperative
06/28/2019	5	2	52.74	Cooperative
06/28/2019	2	2	52.69	None observed
06/28/2019	2	2	53.72	None observed
06/28/2019	1	1	55.69	None observed
06/28/2019	1	1	56.58	None observed
06/28/2019	2	2	53.28	None observed
07/08/2019	1	1	2.36	None observed
07/08/2019	1	0	2.40	None observed
07/08/2019	1	1	3.26	None observed
07/08/2019	2	1	4.04	None observed
08/09/2019	1	0	26.41	None observed
09/03/2019	1	0	4.08	None observed

09/03/2019	1	1	3.35	Surface Lunge
09/03/2019	1	1	1.66	Surface Lunge
09/03/2019	1	1	2.08	Surface Lunge
10/15/2019	1	1	4.08	None observed
10/15/2019	4	2	2.68	Surface Lunge
10/15/2019	1	1	1.21	Surface Lunge
10/15/2019	2	1	1.79	Surface Lunge
10/15/2019	1	1	2.24	Surface Lunge
06/02/2020	1	0	1.69	None observed
06/02/2020	1	0	3.14	None observed
06/02/2020	1	1	4.31	None observed
06/02/2020	1	0	0.37	None observed
06/02/2020	1	0	0.44	None observed
06/08/2020	2	0	54.04	None observed
06/08/2020	1	1	54.64	None observed
06/08/2020	1	1	54.04	None observed
06/25/2020	1	0	23.18	None observed
06/25/2020	3	1	56.98	Cooperative
06/25/2020	2	0	48.30	Cooperative
06/25/2020	2	0	32.43	None observed
06/30/2020	1	1	59.50	None observed
07/09/2020	2	2	48.98	Cooperative
07/22/2020	1	0	53.92	None observed
07/25/2020	7	5	54.10	Cooperative
08/09/2020	2	0	61.44	Cooperative
08/09/2020	1	1	65.02	None observed
08/31/2020	2	2	1.34	None observed
08/31/2020	1	1	11.02	None observed

Table S3: Vessel information for all reported AIS positions in 2017 within 10 km of the shoreline (the inshore region) of the NYB. Number of vessels indicates the number of unique vessels that transited the inshore region. The proportion of each vessel type class that comprises speeds that exceed 10, 15, and 20 knots respectively are indicated in the next three columns. Mean vessel length is the mean length in meters of vessels of each ship type.

Vessel Type	Number of vessels	Proportion of total observed vessels	Proportion of vessel positions > 10kts	Proportion of vessel positions > 15kts	Proportion of vessel positions > 20kts	Mean vessel length
Cargo/Container	970	0.11	0.23	0.10	0.00	255.44
Fishing	330	0.20	0.01	0.00	0.00	22.31
Passenger	1739	0.23	0.42	0.69	0.81	37.94
Service/Research	174	0.09	0.13	0.19	0.19	33.44
Tanker	594	0.06	0.09	0.00	0.00	193.63
Tug	308	0.30	0.12	0.00	0.00	31.27
TOTAL	4115	1.00	1.00	1.00	1.00	70.28

Table S4: Vessel information for all interpolated AIS positions in 2017 within 10 km of the shoreline (the inshore region) of the NYB. Number of vessels indicates the number of unique vessels that transited the inshore region for each length class. The proportion of vessel positions show the relative contribution of each vessel type to vessel positions that exceeded speeds of 10, 15, and 20 knots, respectively.

Vessel Lengths	Number of vessels	Proportion of vessel positions > 10kts	Proportion of vessel positions > 15kts	Proportion of vessel positions > 20kts
<20m	1103	0.19	0.34	0.37
20-50m	918	0.40	0.46	0.62
50-100m	76	0.01	0.00	0.00
100-200m	899	0.17	0.04	0.00
200-300m	452	0.15	0.10	0.00
300-400m	232	0.08	0.07	0.00
>400m	1	0.00	0.00	0.00
TOTAL	3681	1.00	1.00	1.00