



# IFAW

International Fund for Animal Welfare

## **Ship speed monitoring in the Hauraki Gulf, Aug – Sep 2016**

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Report to Bryde's whale ship strike working group

Nov 2016

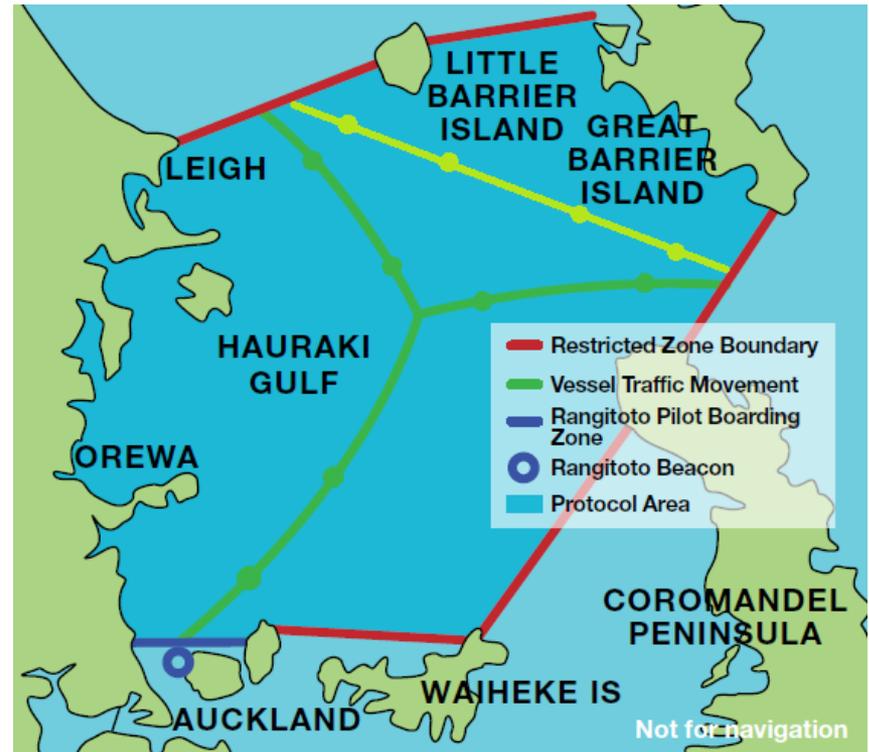
# Ship tracking data

The following slides are based on publicly available data collected by IFAW from [www.marinetraffic.com](http://www.marinetraffic.com) between August and September 2016.

NB: No data was recorded for July 2016 because of lack of funds for contractors to collect data.

# Methodology

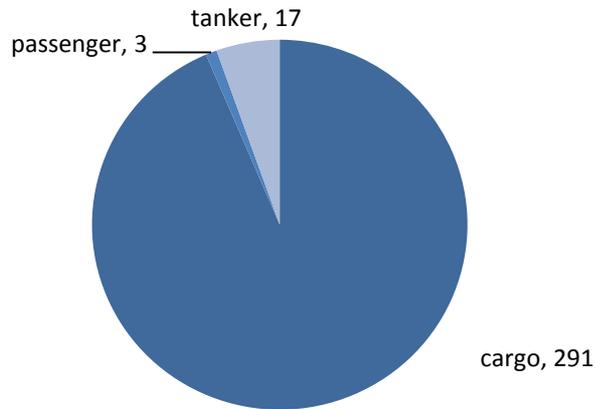
- Vessels speeds were recorded 4 times during each transit and an average (mean) speed taken.
- Vessels were recorded in real time when possible and otherwise retrospectively to vastly increase the number of transits recorded.
- The diagram shows approximate locations for speed measurements during transits.
- The green routes represent the common transits inbound to and outbound from the Ports of Auckland.
- The yellow route represents common transits for vessels crossing the protocol area. As these could only be recorded in real-time, they are likely under-represented in the data.



# Transits recorded

- A total of 1244 speed records were taken across 311 transits (4 speed measurements per transit) from 1 August to 30 September 2016 (\*no funds available for data collection during July 2016)
- The vast majority (94%) were cargo vessels, mostly container ships.

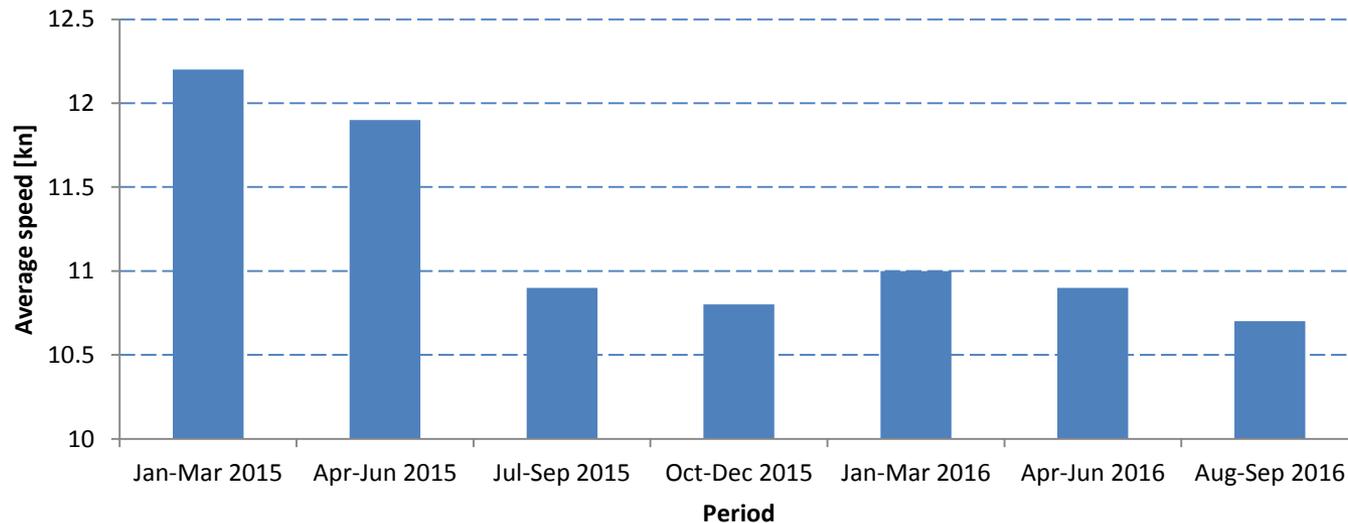
**No. of transits by vessel type**



AIS type	Detailed type	No. of transits
Cargo	Bulk carrier	27
	Cement carrier	17
	Container	137
	General cargo	48
	Reefer	18
	Ro-ro cargo	6
	Vehicles carrier	38
Passenger	Passenger	3
Tanker	Crude oil tanker	3
	Oil/chemical tanker	14

# Average (mean) speed over time (all vessels)

Period	No. Transits	Records per transit	No. records	Average speed (kts)
Jan-Mar 2015	125	Single	125	12.2
Apr-Jun 2015	107	Single	107	11.9
Jul-Sep 2015	118	Single	118	10.9
Oct-Dec 2015	385	Multiple	1540	10.8
Jan-Mar 2016	376	Multiple	1504	11.0
Apr-Jun 2016	350	Multiple	1400	10.9
Aug-Sep 2016	311	Multiple	1244	10.7



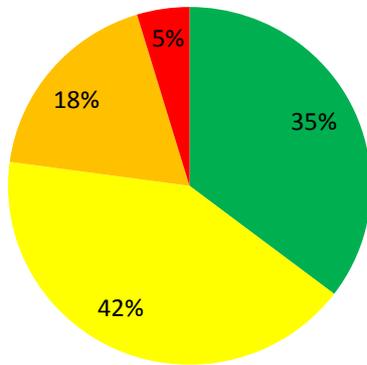
# Risk of whale fatality in the event of collision with a vessel, trends over time (all vessels)

■ Low Risk ■ Medium Risk ■ High Risk ■ Very High Risk

\*Risk of whale fatality based on probability of death as a function of vessel speed, adapted from Vanderlaan & Taggart, 2007.

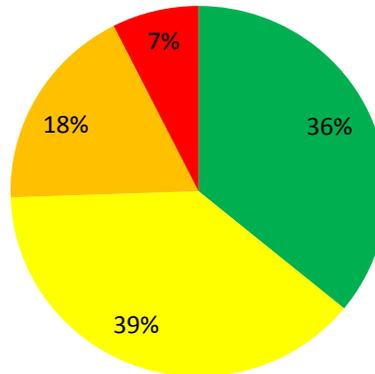
## Oct - Dec 2015

385 transits, multiple points



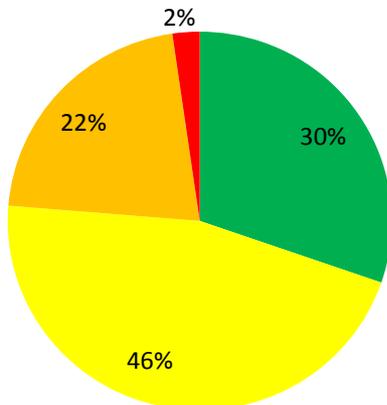
## Jan - Mar 2016

376 transits, multiple points



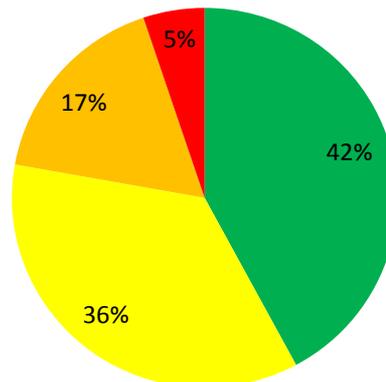
## Apr - Jun 2016

350 transits, multiple points

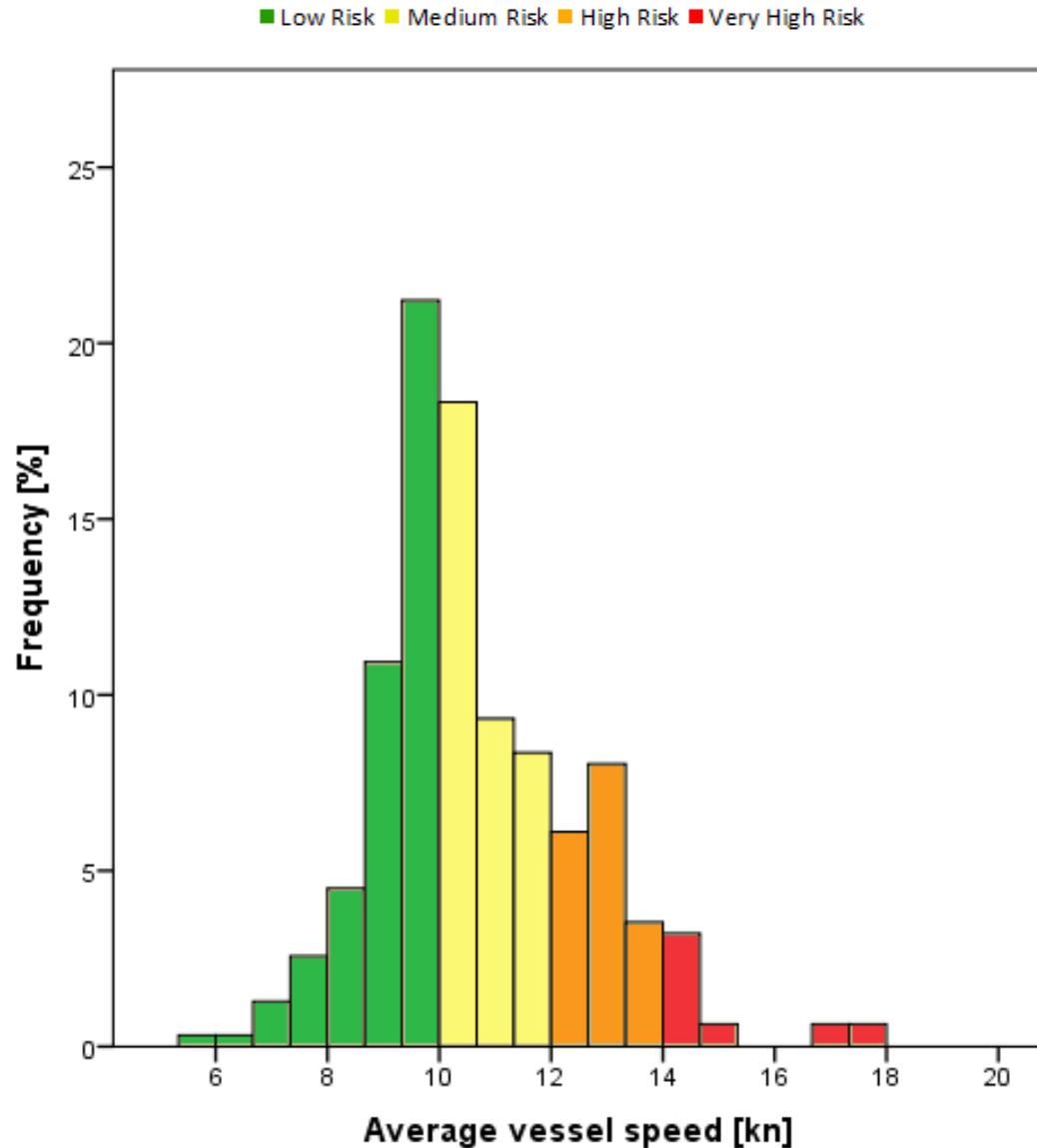


## Aug - Sep 2016

311 transits, multiple points

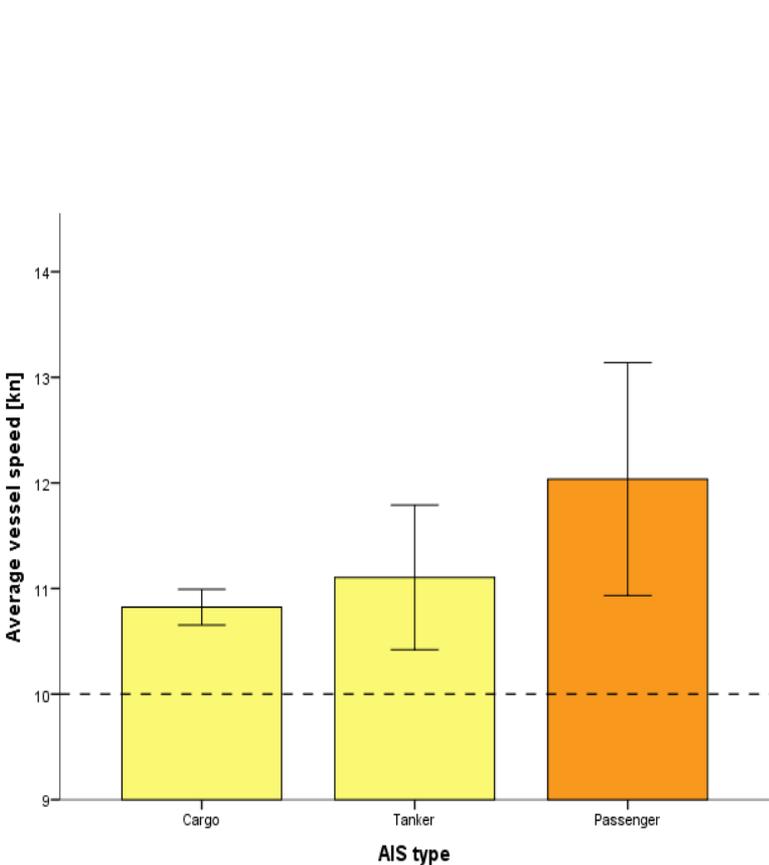


# Risk/speed Aug – Sep 2016 (all vessels)

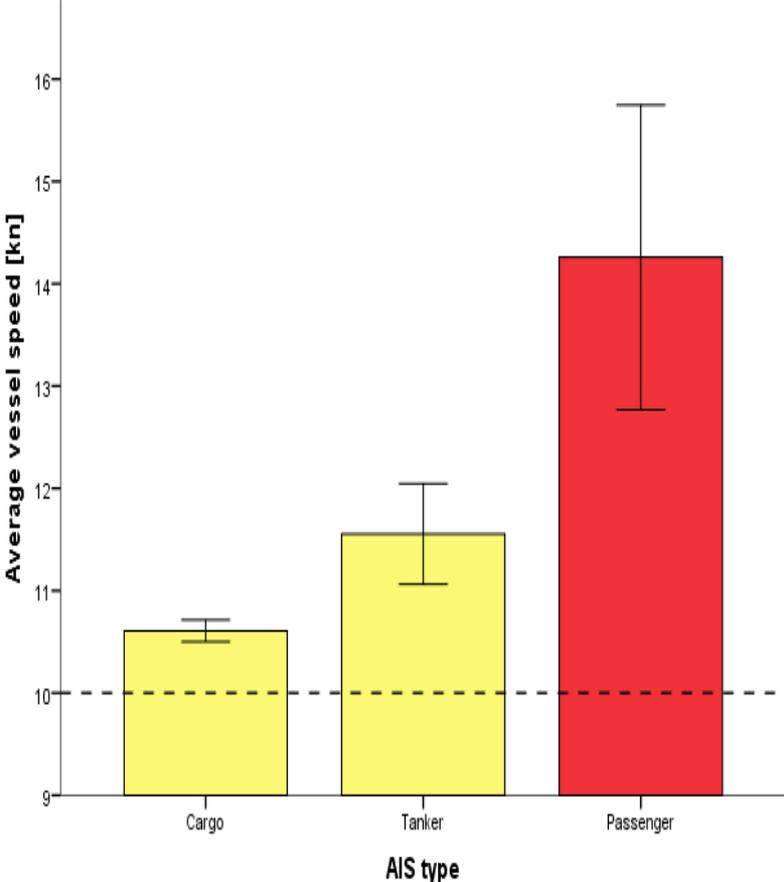


# Risk/speed by vessel type

■ Low Risk ■ Medium Risk ■ High Risk ■ Very High Risk

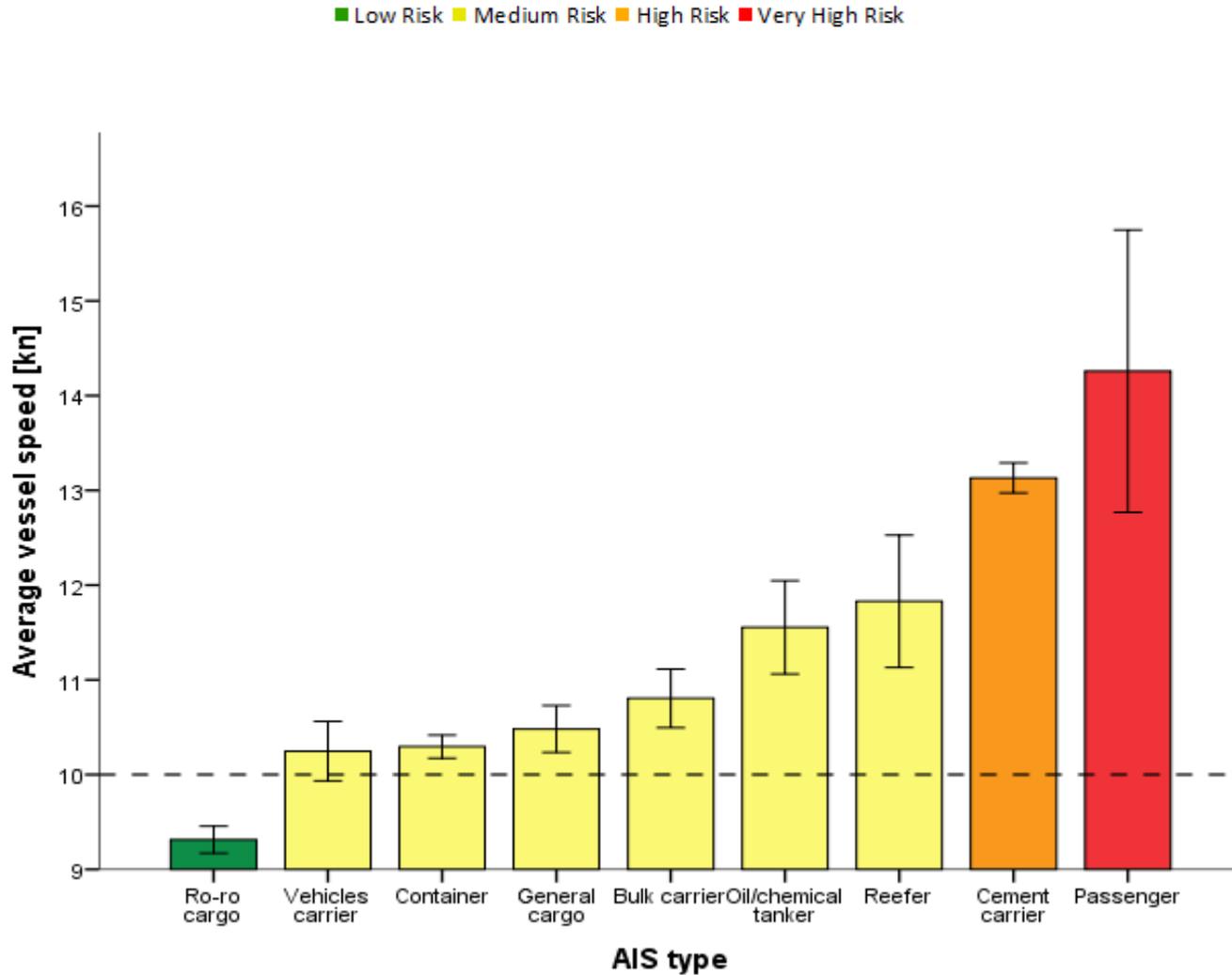


Apr – Jun 2016



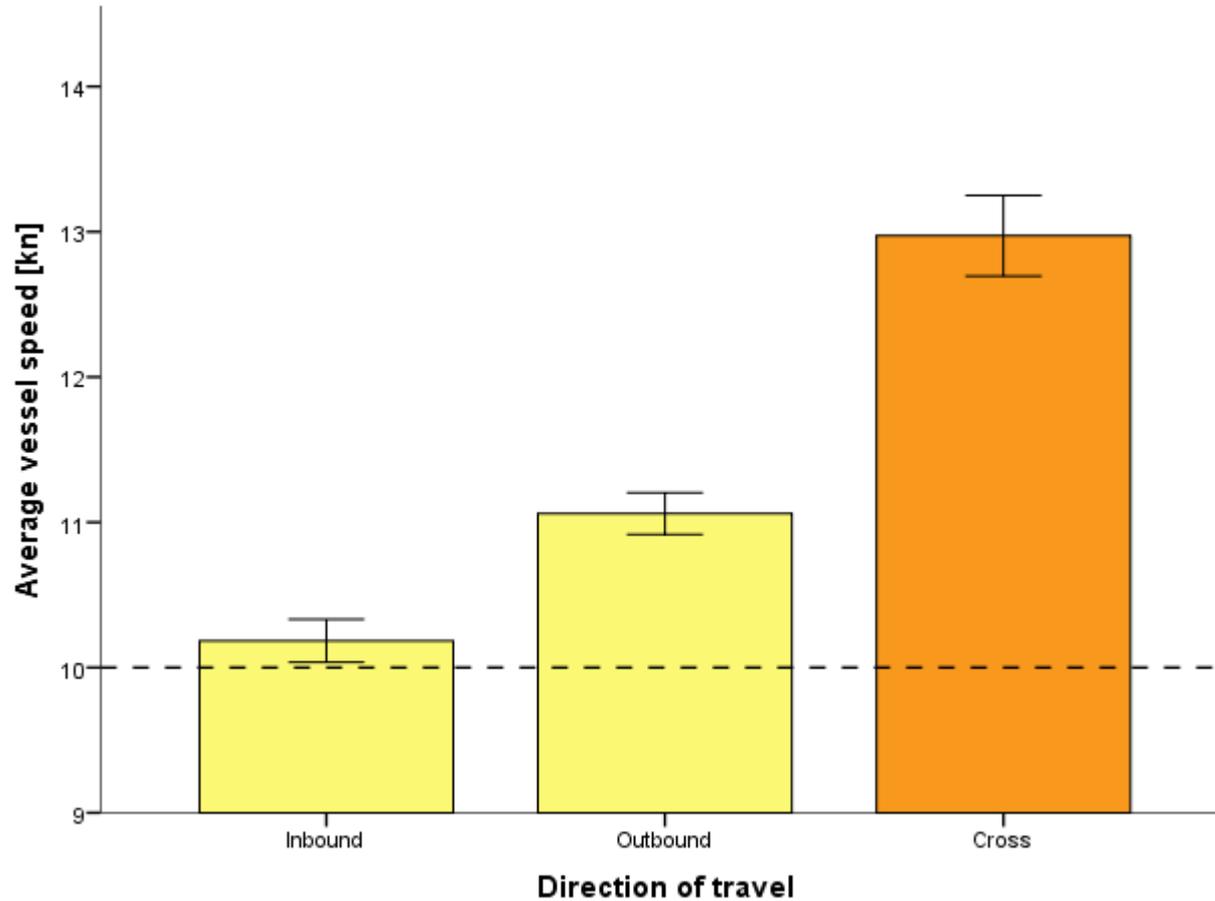
Aug – Sep 2016

# Risk/speed Aug – Sep 2016 by detailed type



# Risk/speed Aug – Sep 2016 by direction

■ Low Risk ■ Medium Risk ■ High Risk ■ Very High Risk

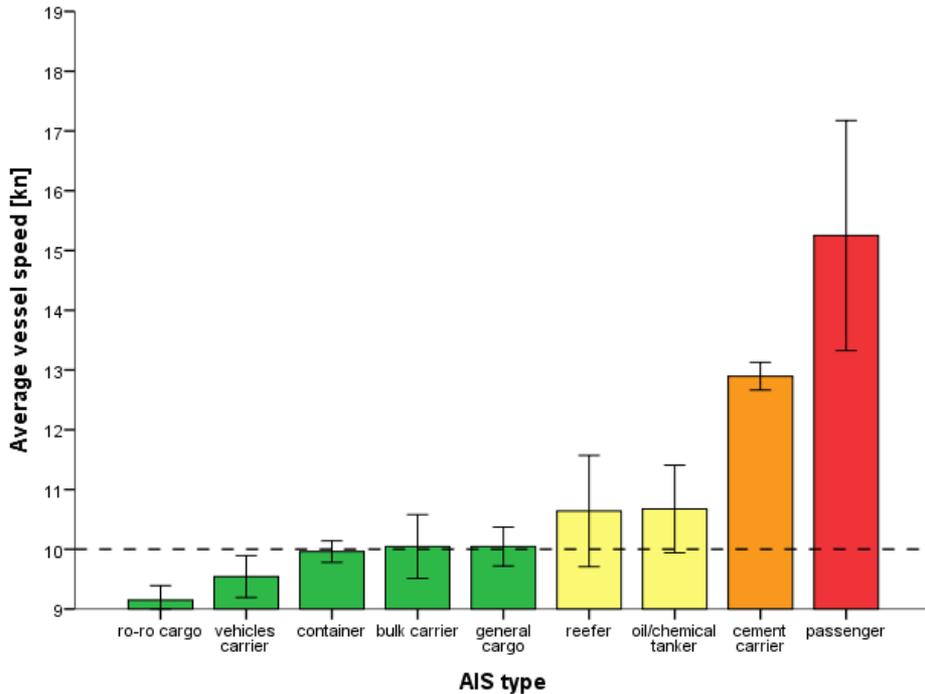


# Risk/speed Aug – Sep 2016

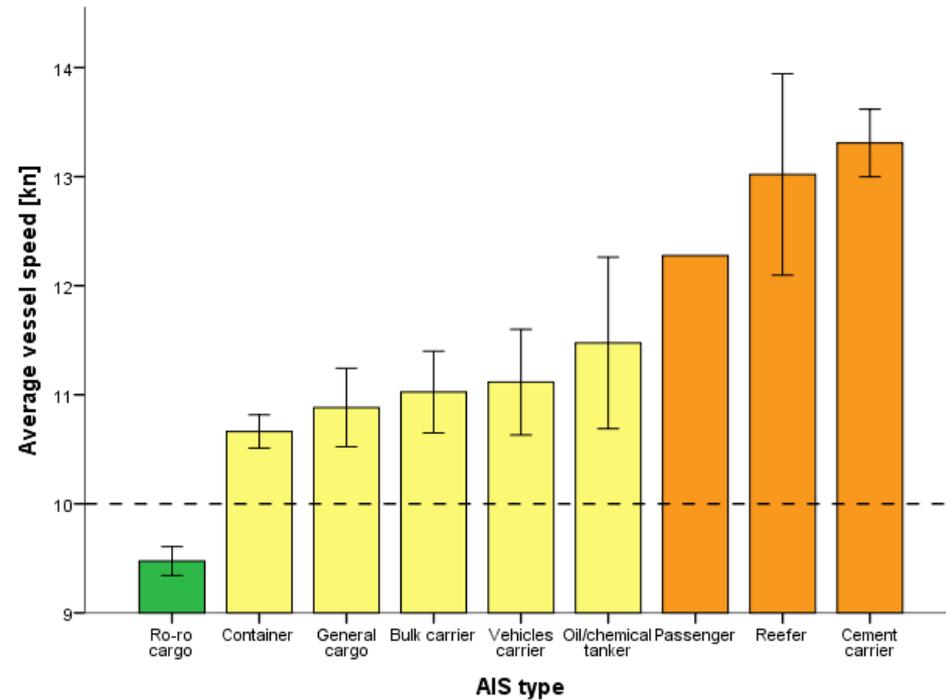
## Inbound v. outbound, by detailed vessel type

■ Low Risk 
 ■ Medium Risk 
 ■ High Risk 
 ■ Very High Risk

**Inbound**



**Outbound**



# Summary

- Average speed across all vessels for Aug – Sep 2016 were down on the previous quarter and have reached the lowest average yet recorded of 10.7 knots across all vessels.
- 42% of transits averaged 10 knots or less. Transits in the high and very high risk categories have continued to reduce.
- Passenger vessels, while only accounting for 3 transits during this period, continue to represent the vessel category of highest average transit speed.
- Vessels continue to show a difference between average speeds depending on direction of travel:
  - Vessels crossing the Hauraki Gulf (not calling at the Ports of Auckland) represent the highest speed transits, averaging 13 knots this quarter;
  - Inbound speeds average 10.2 knots;
  - Outbound speeds 11.1 knots.
- Nearly all cargo vessels types are meeting the target 10 knot speed on inbound journeys.