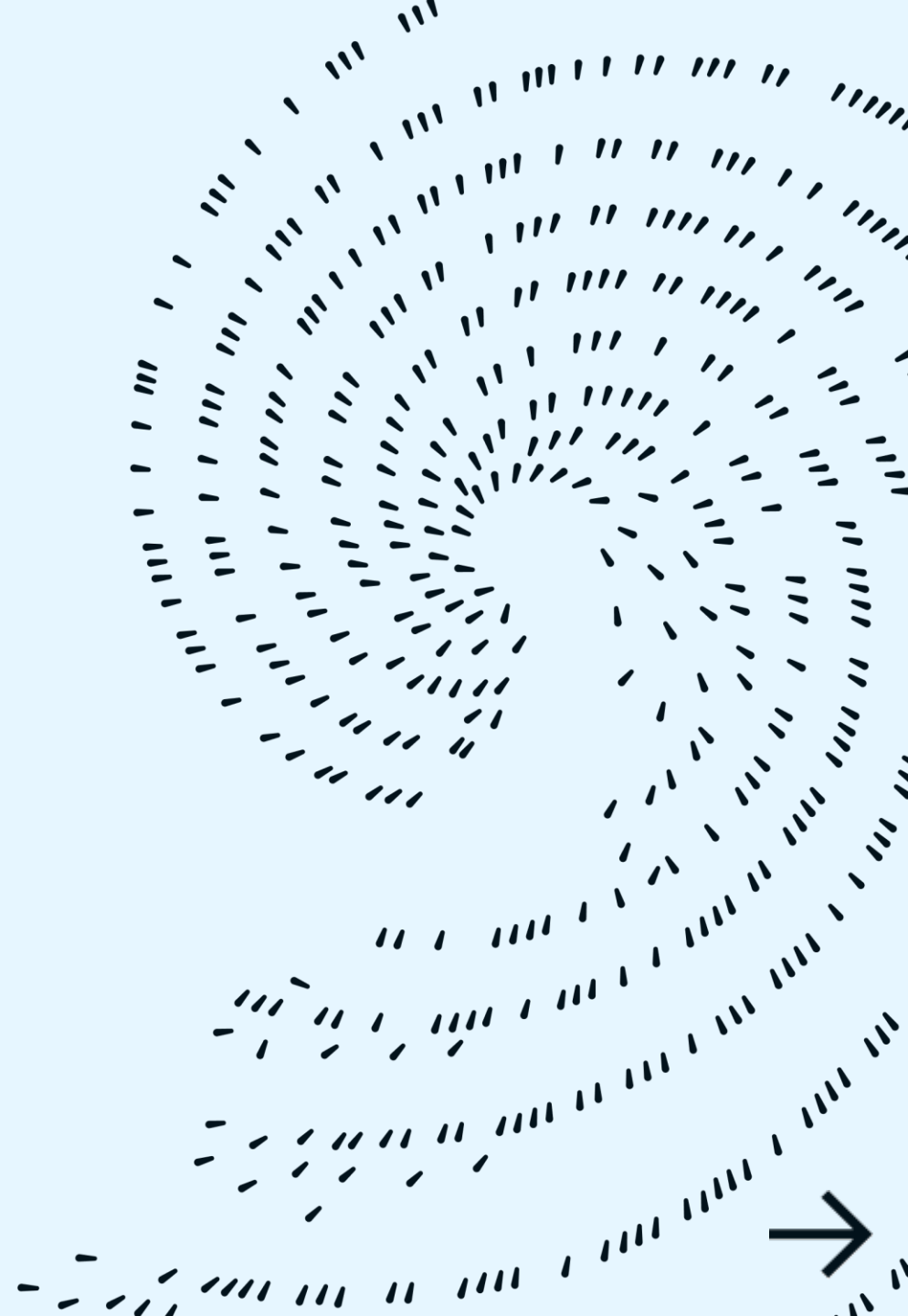


# The Challenges of Ship Routing Today

**Emily Parker**

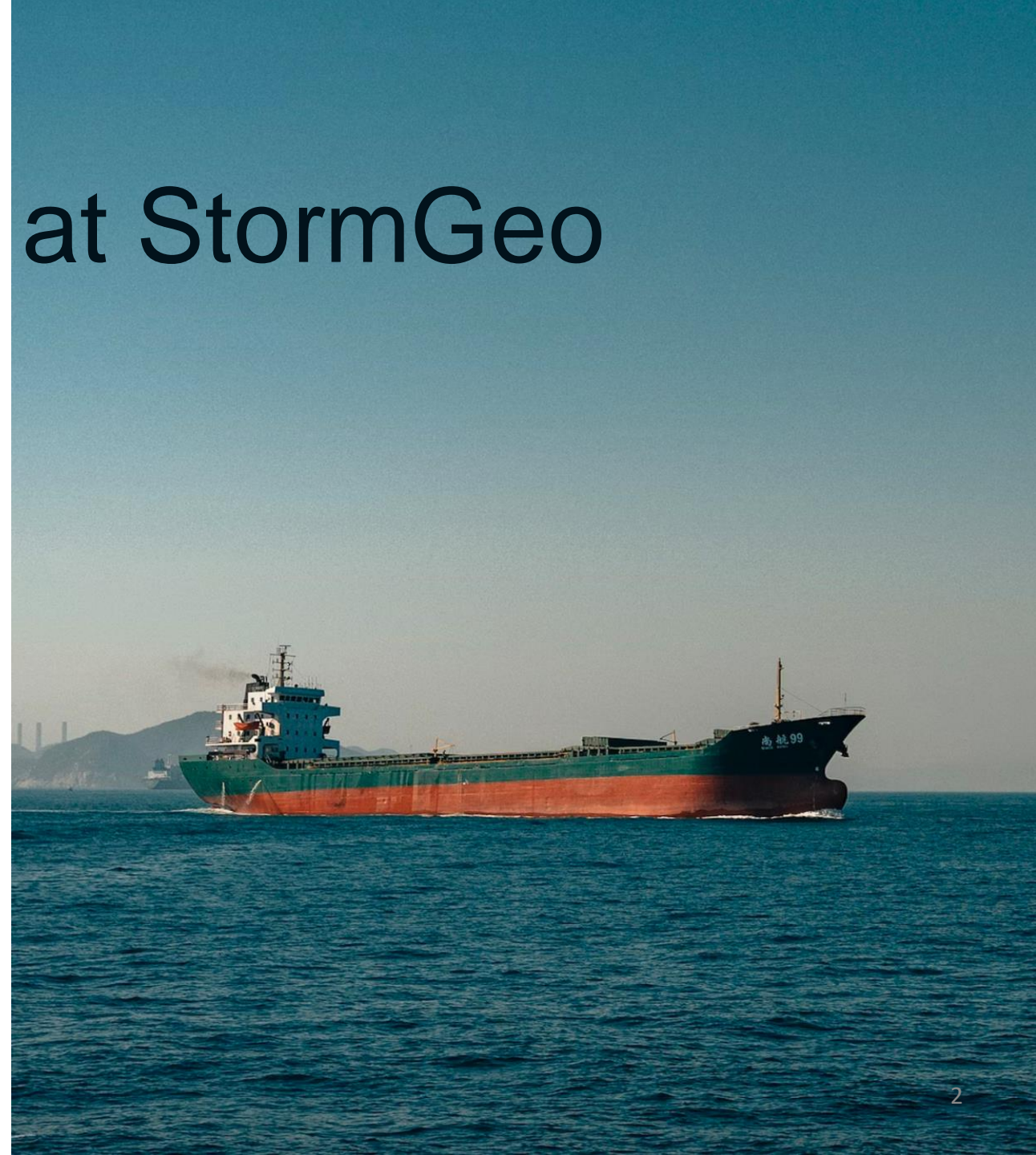
Senior Route Analyst



# Routing Operations at StormGeo

## Meteorologists and ex-Mariners

- Guide a variety of shipping vessels worldwide
- Provides services to over 3,000 vessels at any given time and over 80,000 in a year
- Worldwide 24/7/365 support with operational offices in USA, Scotland, Singapore and Philippines
- Beyond Routing Advisory Services, also offer various other products to assist with voyage planning: BVS, S-Planner, and S-Insight
- Visit [stormgeo.com](http://stormgeo.com) for more information

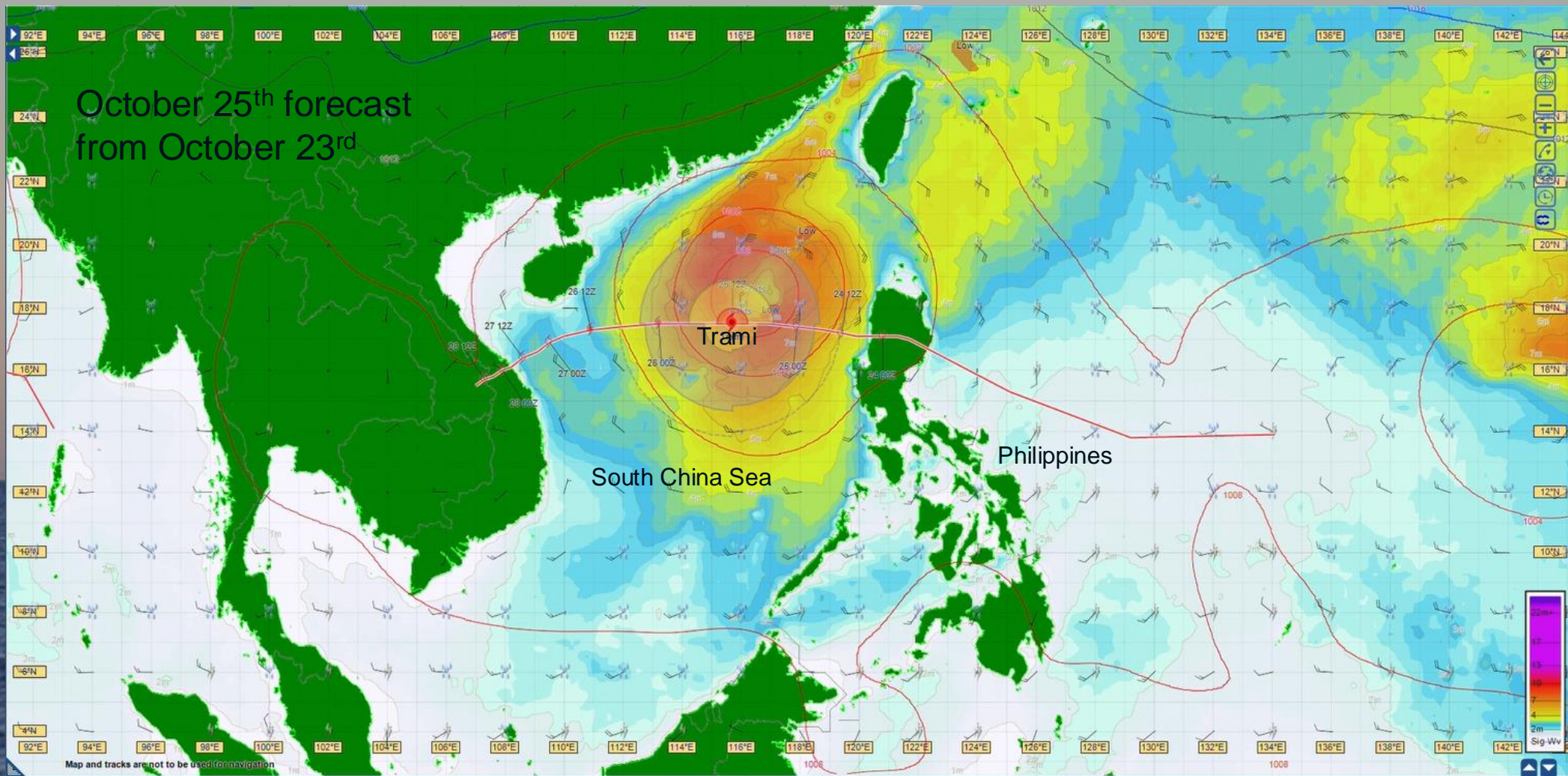


# Climate Change Impacts

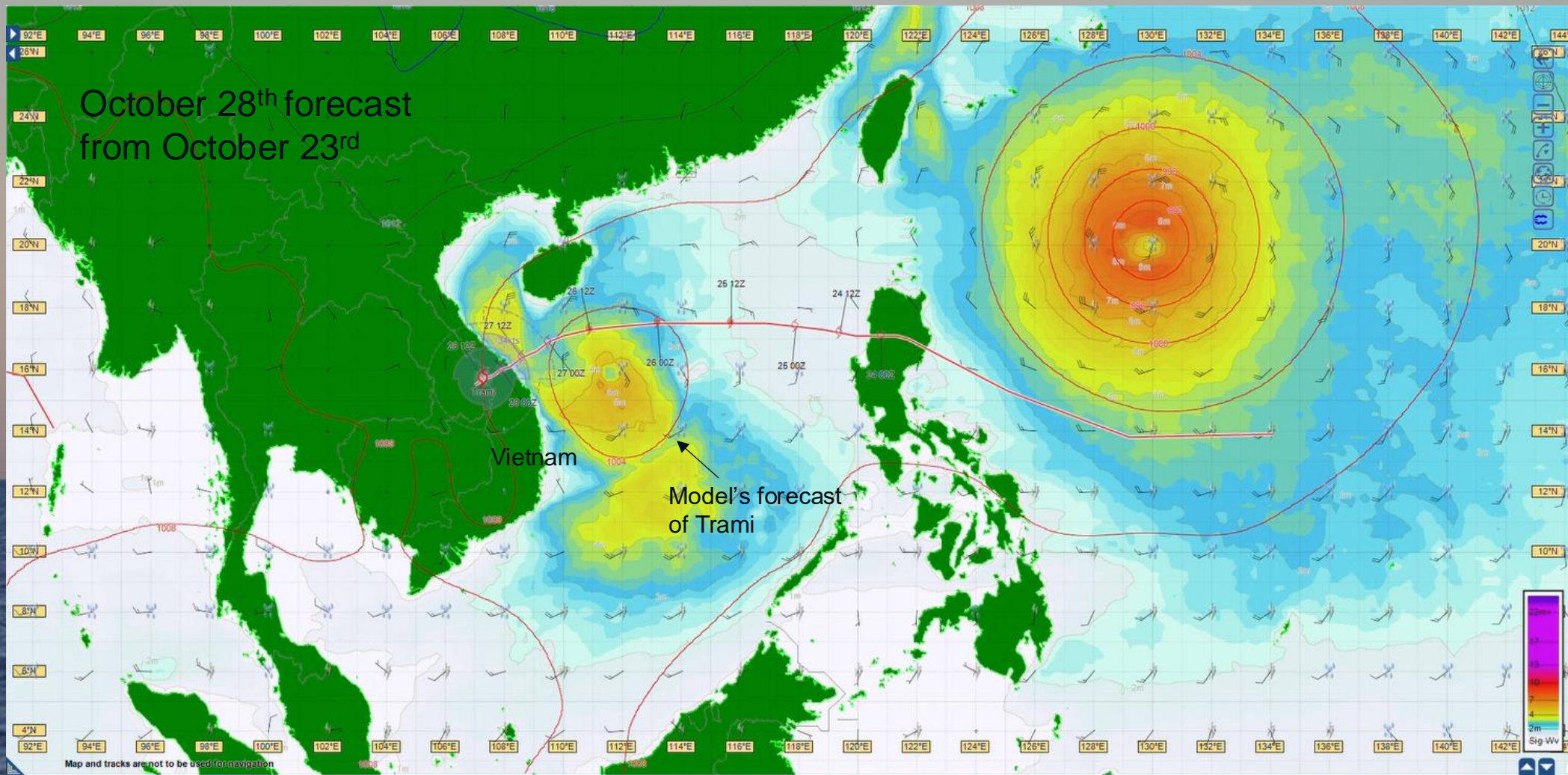
- Altering weather patterns and leading to more frequent extreme weather events
- More likely that unusual events will impact a location
- Route adjustments necessary when extreme weather events impact high-volume shipping lanes



# Uncertainty in Weather Forecasts: Tropical Storm Trami

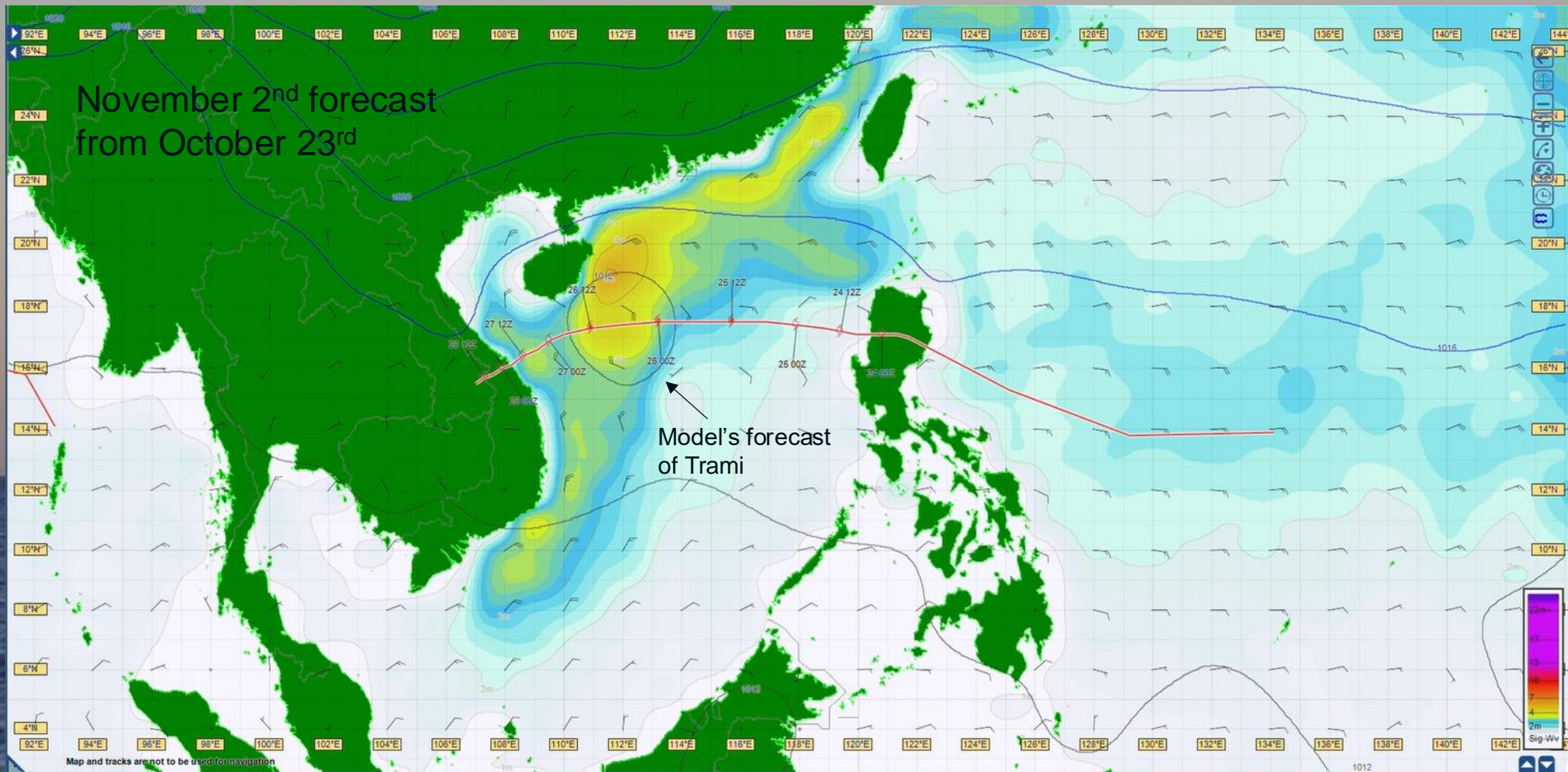


# Uncertainty in Weather Forecasts: Tropical Storm Trami



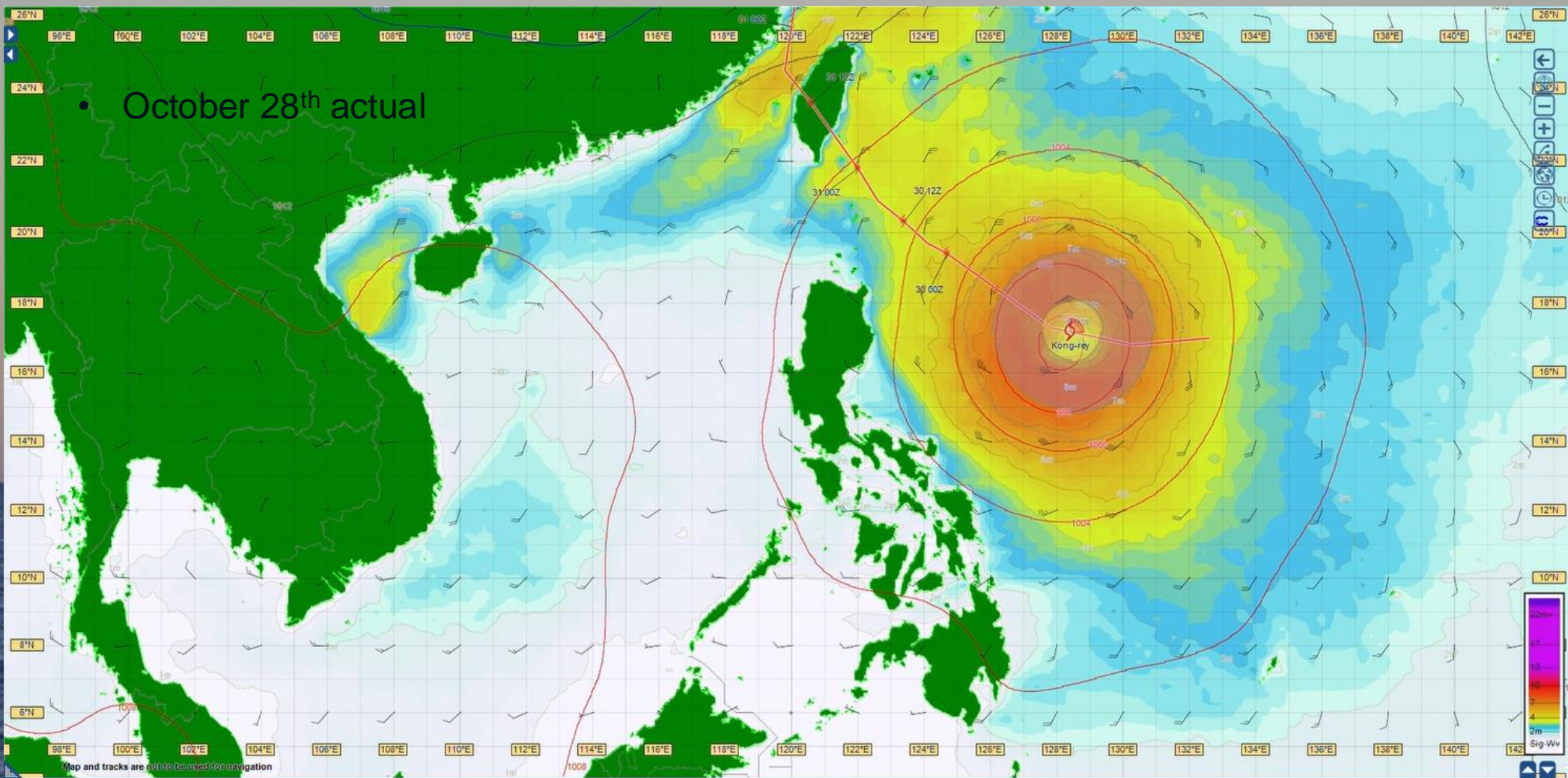
# Uncertainty in Weather Forecasts: Tropical Storm Trami

Long range data causes concern for clients and ship captains

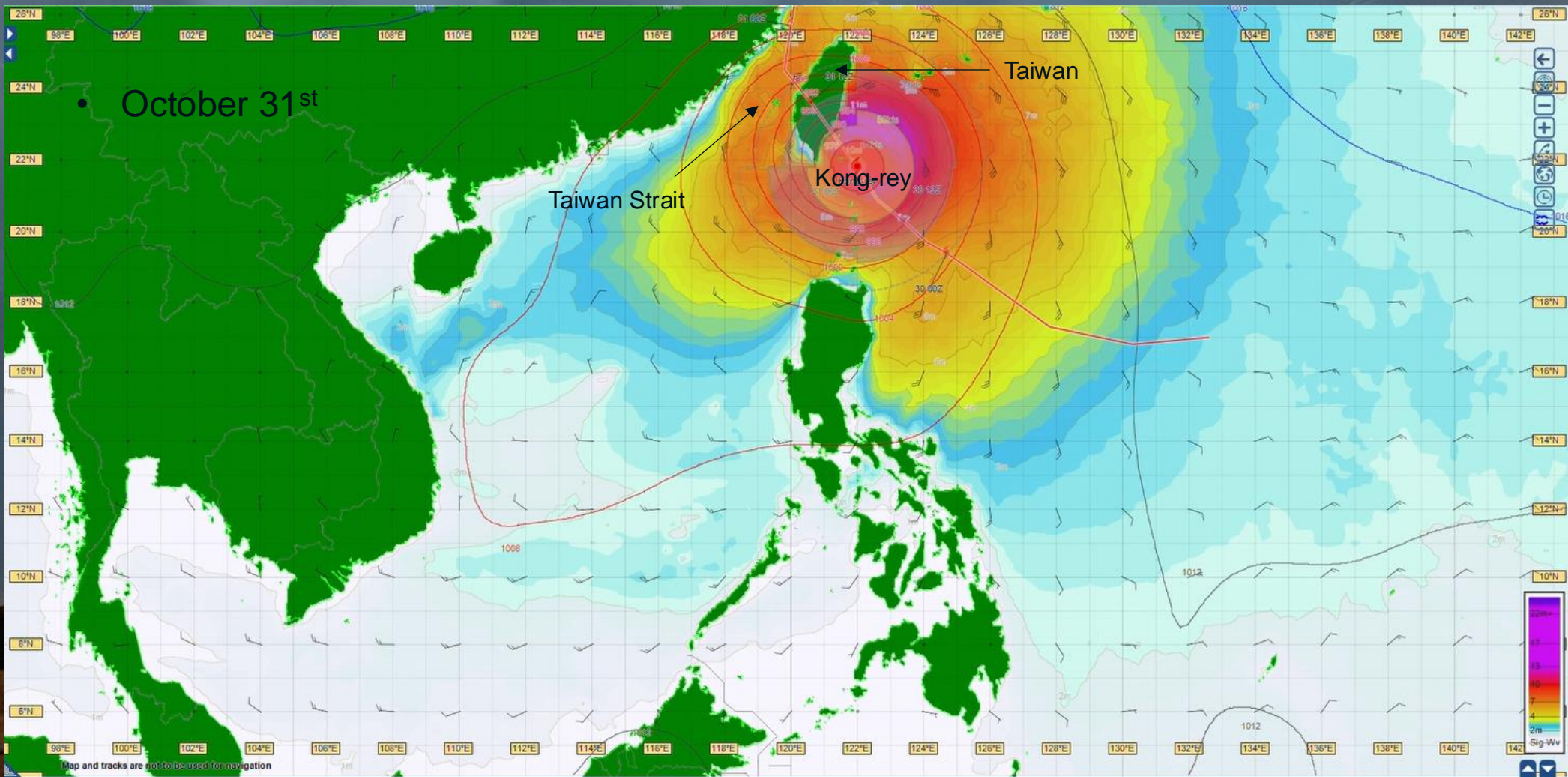


# Uncertainty in Weather Forecasts: Tropical Storm Trami

- Trami made landfall over Vietnam on October 27<sup>th</sup>
- Drastic route diversions were not necessary
- Important to involve an expert!

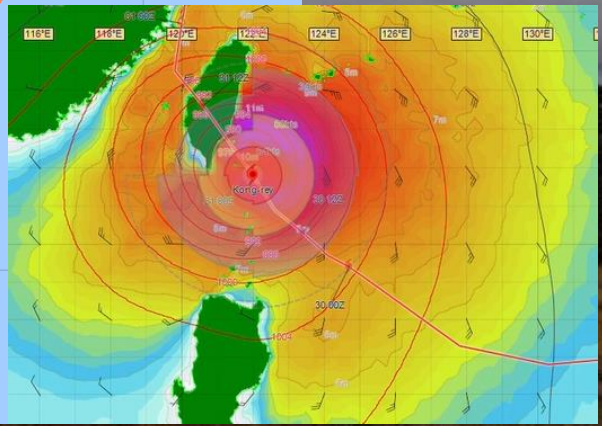
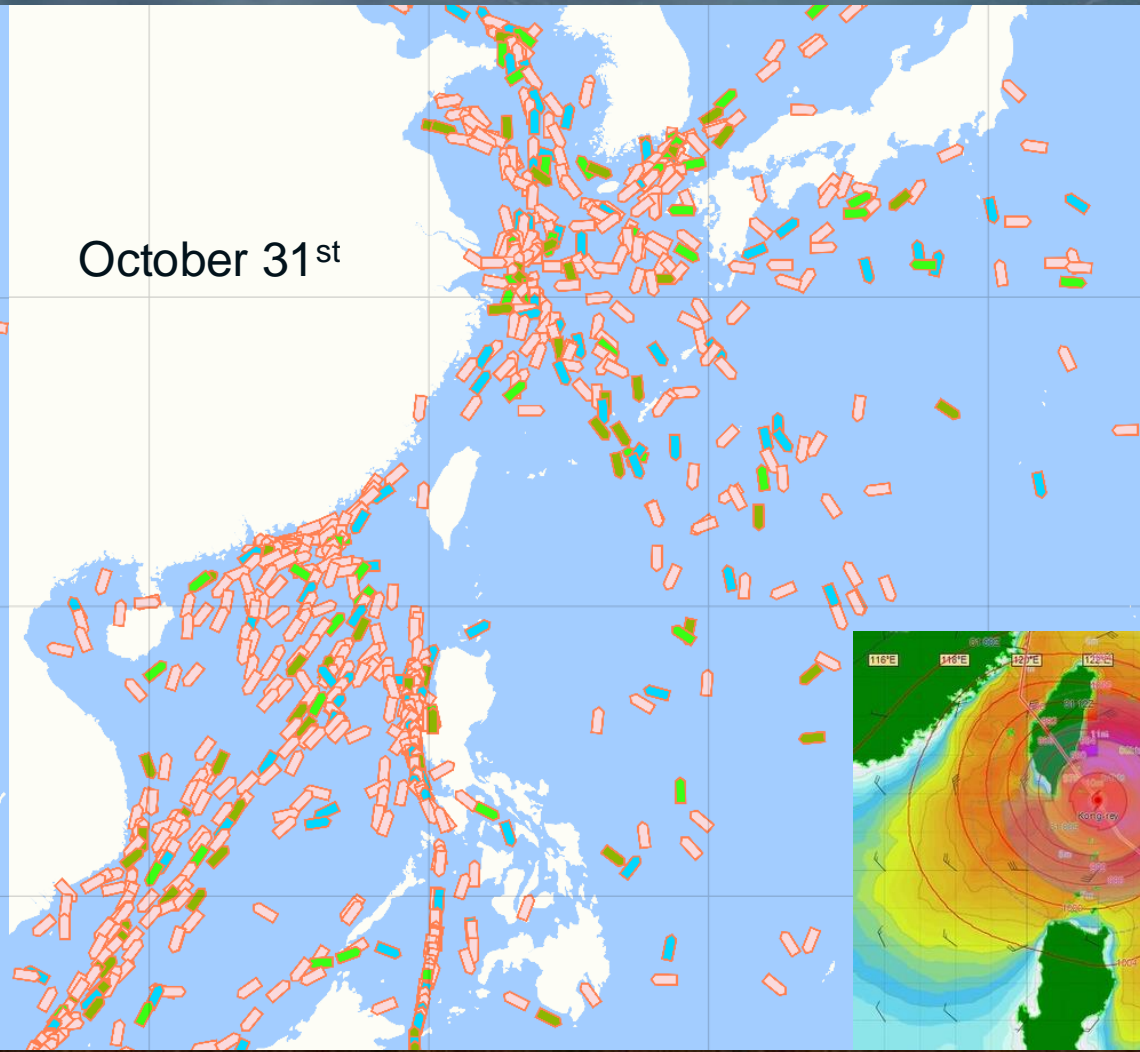


# Typhoon Kong-rey Impacting Major Shipping Lanes



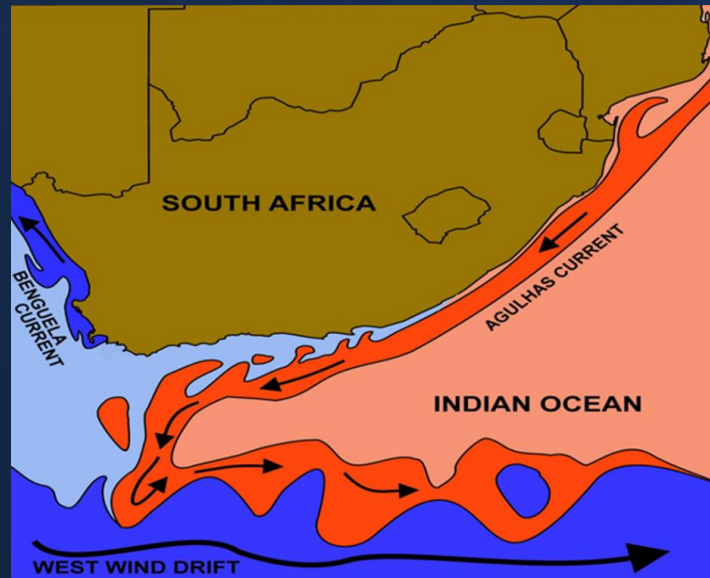


# Typhoon Kong-rey Impacting Major Shipping Lanes

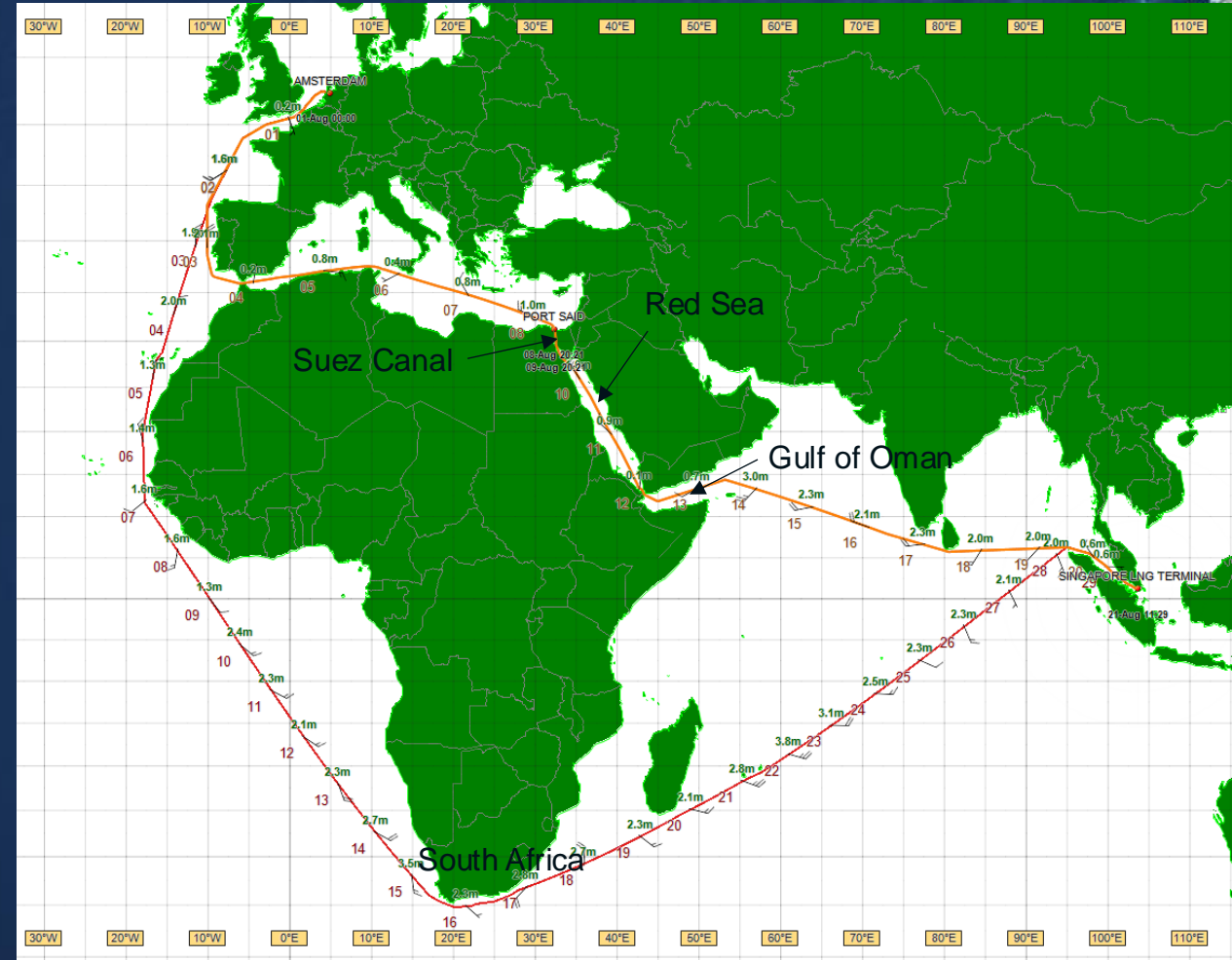


# Increased Shipping Traffic around Africa and Rogue Waves

- Ongoing conflict in the Middle East causing increased shipping traffic around Africa
- Adds ~2 weeks and 3,500nm over Suez Canal
- First time sailing South Africa for many mariners

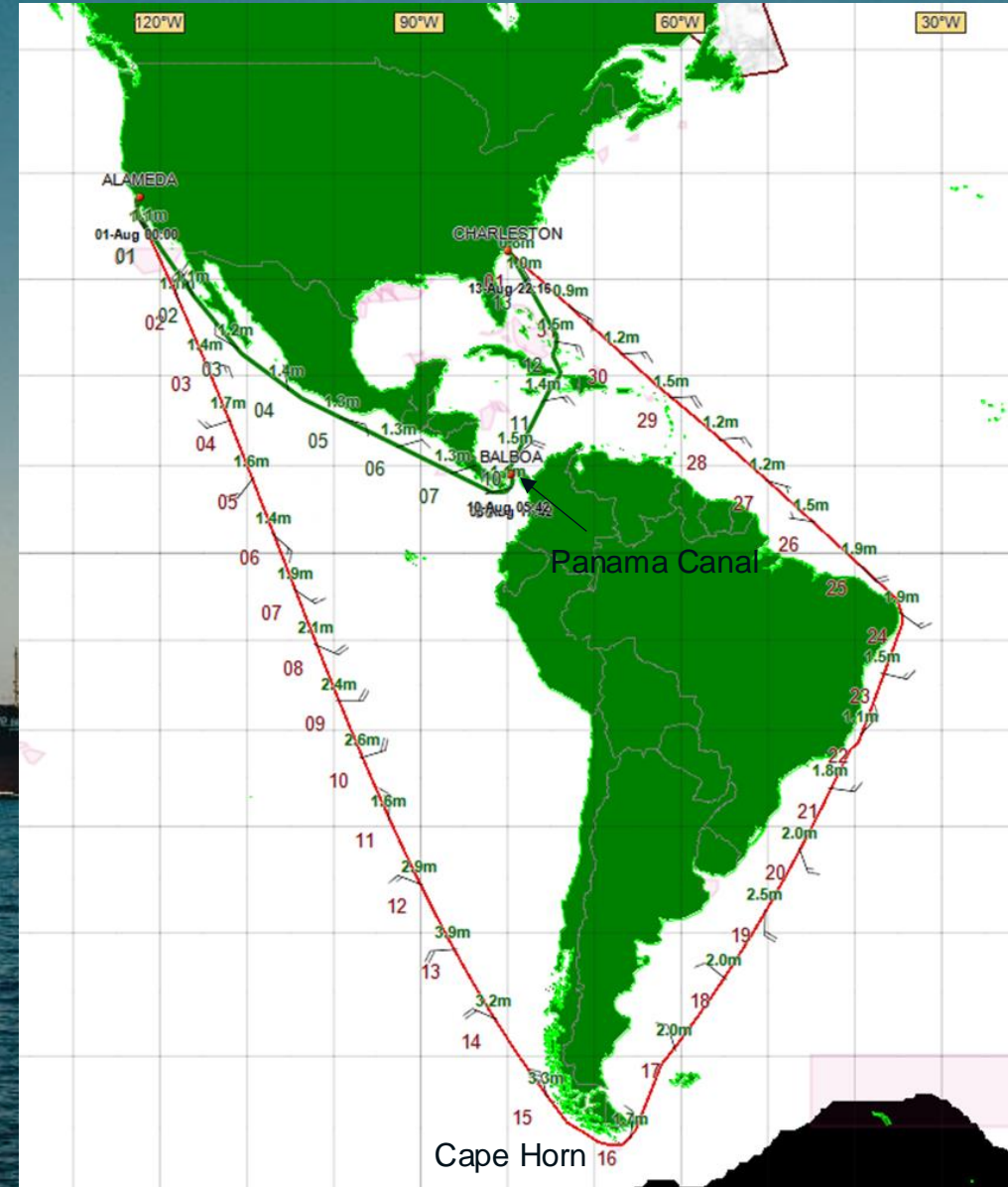


- Rogue waves are common over Agulhas Current
- Increased risk for vessel motions



# Panama Canal Drought

- Ongoing Panamanian drought influenced by El Niño and climate change<sup>1</sup>
- Rainfall in Panama was 30% below average in 2023<sup>2</sup>
- During peak of drought:
  - Shipping traffic decreased by 36%<sup>3</sup>
  - Average delays of 21 days depending on draft of vessel<sup>4</sup>
- Panama Canal accounts for:
  - 5% of global maritime trade volume<sup>1</sup>
  - 46% of containers from Northeast Asia to US East Coast<sup>5</sup>
  - 40% of all US container traffic – about \$270 billion in cargo<sup>5</sup>
- Sailing around South America adds ~3 weeks and 8,000nm



# The Future: AI & Routing

- AI is expected to increase the accuracy of forecasts
- Importance of human element for ship routing
- The intelligence of considering the risk of weather forecast changes is necessary to avoid poor positioning of the vessel
- The future is likely AI improved forecasts and route optimization

