



OCEAN RACING CLUB OF VICTORIA

WEATHER FOR SAILORS

FUNDAMENTALS & PLANNING FOR A 3+ DAY PASSAGE



Interact with Us

Train



Navigation
On Water Rip Tour
Weather
Foredeck Essentials

Race



Destination Races to:
Devonport, King Island, Hobart
Apollo Bay, Port Fairy,
Coastal Sprints

Volunteer



Support
Many Roles
Race Management, Media,
Training Support, Mentoring

1

Poll

- What happens to pressure and temperature with height?

2

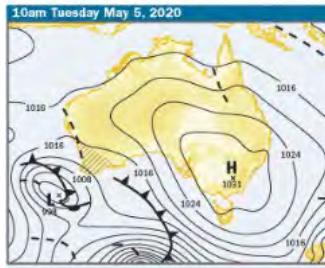
Poll

- What direction does wind blow around a low- pressure in the southern hemisphere?

Poll

- Does air rise or fall in a high-pressure system?

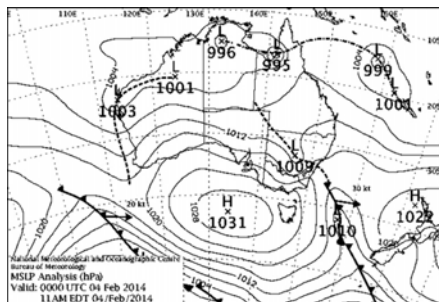
Movement of Weather Systems



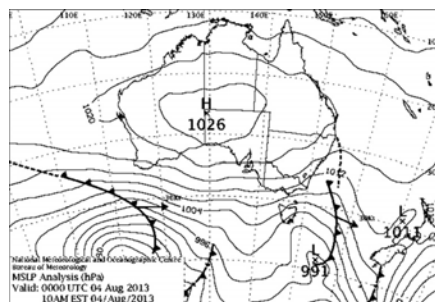
- In mid-Latitudes, weather moves from west to east
- Driven by global wind circulation patterns and the Coriolis Force
- Moves across the continent in a few days
- Can be slowed down by blocking high pressure systems that form further south than usual and remain near stationary for an extended period of time

Changes Between Seasons

Summer

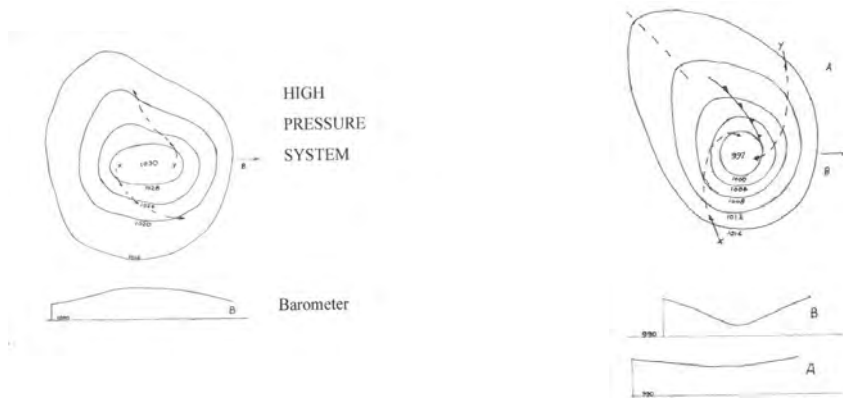


Winter



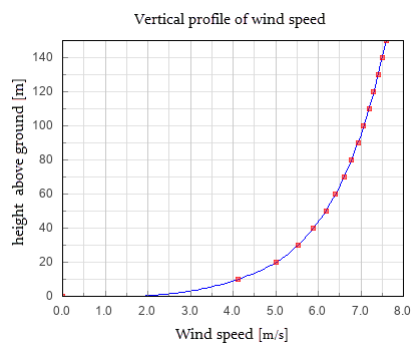
- In Summer, the high-pressure belt is usually south of the continent
- In Summer, the high-pressure belt is over the continent. The effect of westerly winds and cold fronts have more impact

Horizontal Wind Profiles in Highs and Lows



7

Vertical Wind Profiles



- Surface friction causes wind gradient
- BOM wind speeds at 10m and 10-minute average
- Has obvious impacts on sail trim, particularly in light winds

8

BOM Wind Levels

- Measured over a 10-minute interval at 10m height



40% speed increase means twice the force on your yacht!

Average wind speed (knots)	Gust strength that should be planned for (knots)	Wind Warning thresholds
10	14	
15	21	
20	28	
26 - 33	36 - 45	Strong wind warning issued
34 - 47	48 - 65	Gale force warning issued
48 - 63	67 - 88	Storm force warning issued
64 or more	90 or more	Hurricane force warning issued

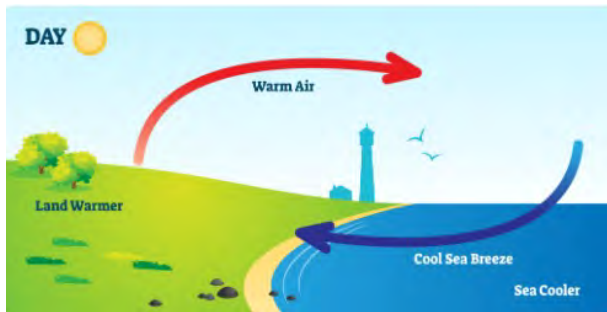
Beaufort Wind Scale

- Admiral Beaufort RN
- 1830's - Pre-wind instruments – Based on Sea and Land effects
- Internationally Understood
- Note Beaufort storm force is different to BOM Storm warning 48-63 kts

BEAUFORT SCALE WIND FORCE	DESCRIPTION	WIND SPEED IN KNOTS
 1	Light air, ripples Drifting Conditions	1-3
 2	Light breeze, small wavelets Both need large sails to catch breeze	4-6
 3	Gentle breeze, crests begin to break Large headsails & full mainsails	7-10
 4	Moderate, small waves becoming larger frequent white crests. Reduce headsails and full main (B) might start reef.	11-16
 5	Fresh breeze, moderate waves many white crests, spray Reduce headsails and (B) starts to reef.	17-21
 6	Strong breeze, large waves, white foam crests Less sail	22-27
 7	Near gale, sea heaps up, white foam, breaking waves blown in streaks Both under reefed mains with small jibs.	28-33
 8	Gale, moderately high waves, breaking crests, foam streaks Deep reefed mains, storm jib on (B).	34-40
 9	Severe gale, high waves, crests tumble spray affects visibility. (A) Storm jib & trysail, storm jib only on (B).	41-47
 10	STORM Very high waves with long breaking crests. Survival conditions.	48-55

REMEMBER – This scale was devised for large sailing vessels and each figure only refers to an AVERAGE speed. So gusts well up into the next force can be expected at times.

Sea Breeze



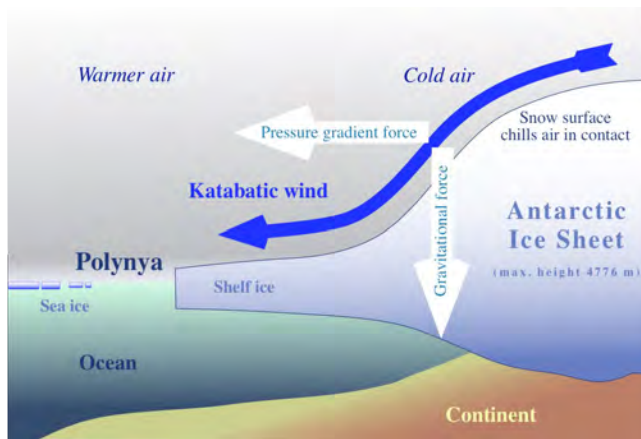
- Land heats and cools faster than land
- Late morning, warmer air rises over land
- Cooler air moves in from the sea
- Cloud formation over land can be an early warning sign
- Dissipates by late afternoon

Land Breeze



- Land cools once sun disappears
- By late evening, sea is warmer
- Cooler air moves out from the land
- Starts close to shore and gradually moves outwards
- Weaker if significant cloud over over land

Katabatic Wind



- Air aloft cools due to land cooling or nighttime radiation loss
- Cooler air becomes more dense
- Gravity drags the denser air downhill
- Particularly strong with valleys to the water
- Common in Antarctica, also Tasmania West Coast
- Can be strategically important

Katabatic Winds



Poll

- At what height and over what time does the BOM measure wind strength?

Poll

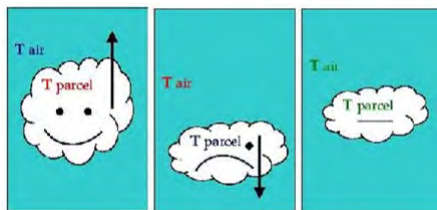
- What is the range of wind speeds for a strong wind warning?

Clouds – Signs of the Sky

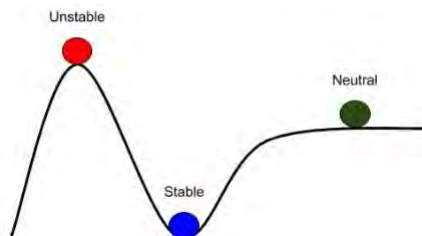
- Why Study Clouds?
- Clouds are indicators of vertical motion
- Used to understand current and future winds and weather (local and regional)



Atmospheric Stability

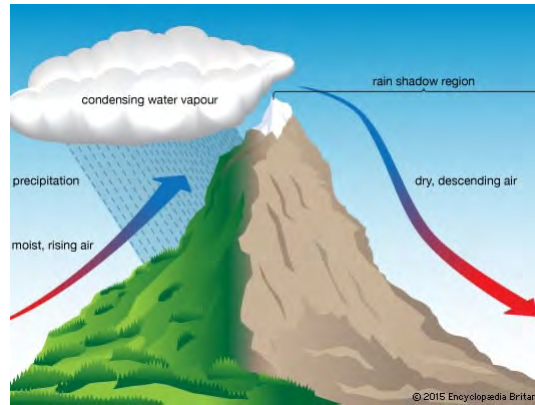


<p>UNSTABLE $T_{\text{parcel}} > T_{\text{air}}$ The parcel is warmer than its surroundings, so it rises and expands</p>	<p>STABLE $T_{\text{parcel}} < T_{\text{air}}$ The parcel is cooler than its surroundings, so it sinks and compresses</p>	<p>NEUTRAL $T_{\text{parcel}} = T_{\text{air}}$ The parcel is the same temperature as its surroundings, no change</p>
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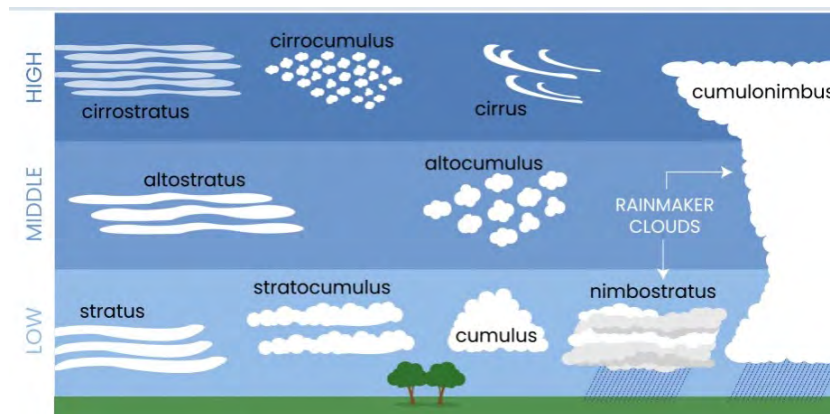
- If a parcel of air has a higher temperature than its surroundings, it rises – Unstable
- If a parcel of air has a lower temperature than its surroundings, it falls – Stable
- If a parcel of air has the same temperature than the surroundings, it is stationary - Neutral

Orographic Lifting



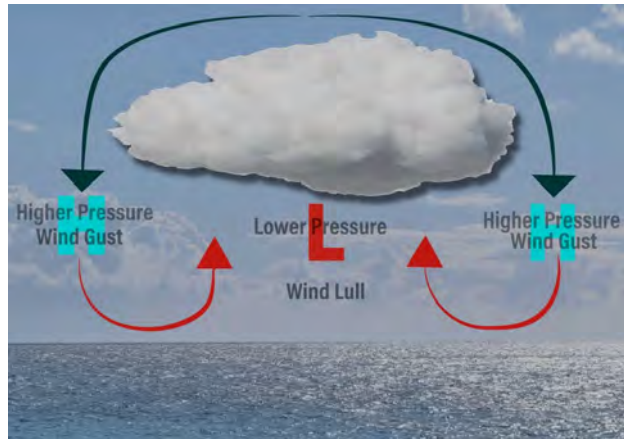
- Moist air, often from the sea, rises over coastal mountains
- Rising air cools, water vapour condenses bringing rain on the windward side
- Dry air continues to the leeward side of the mountains

Cloud Types



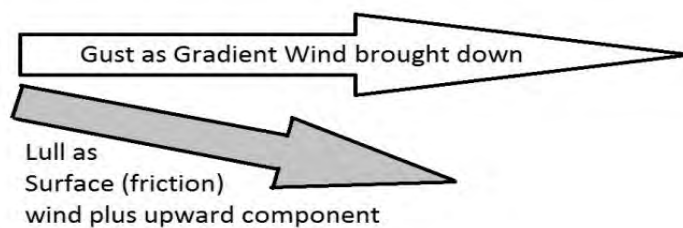
- Clouds names based on their height, their appearance and the type of weather they bring
- Cirro; high, curly • Alto; mid height • Strato: layered • Nimbo: rain • Cumulo: lumpy

Gusts and Lulls



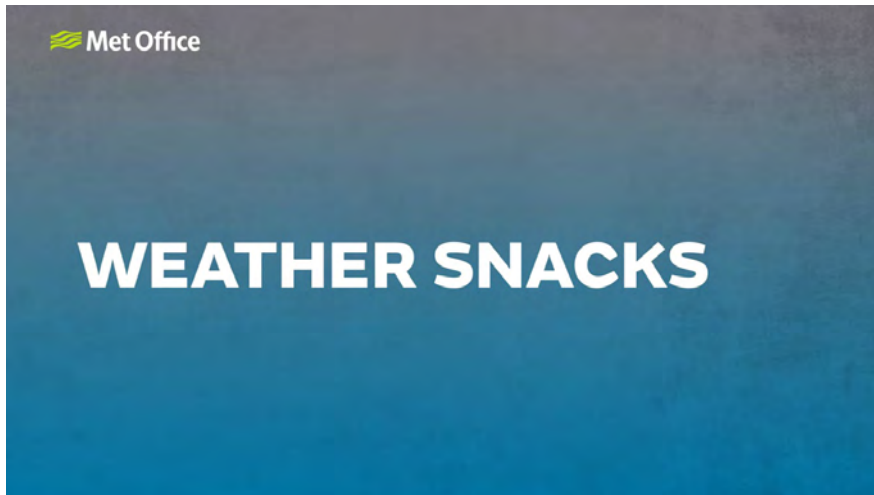
- Rising air near the cloud centre produces lulls
- Downdraft near the cloud edge produces gusts
- Short in duration

Gusts and Lulls

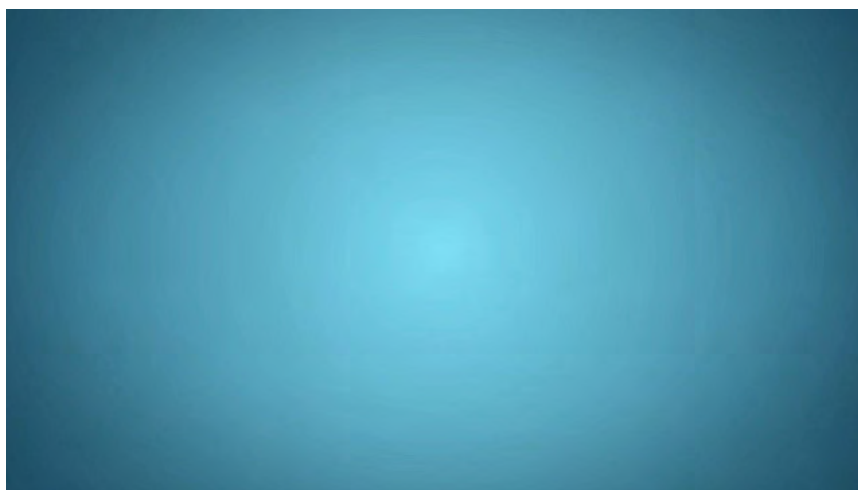


- The Coriolis Force and the friction at sea level, mean the descending gust is "veered" compared to the wind at the lull

Squalls

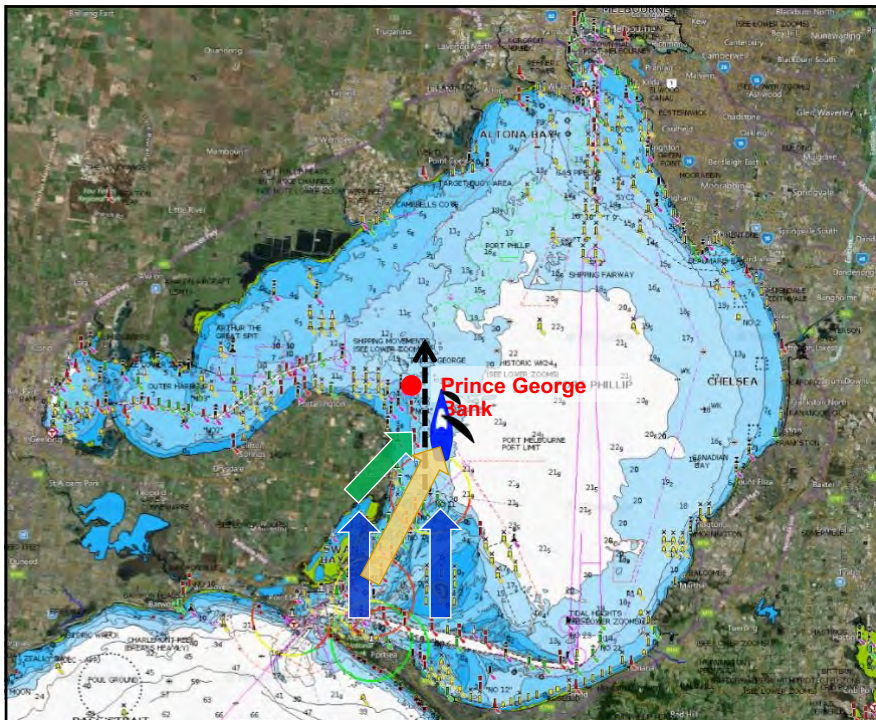
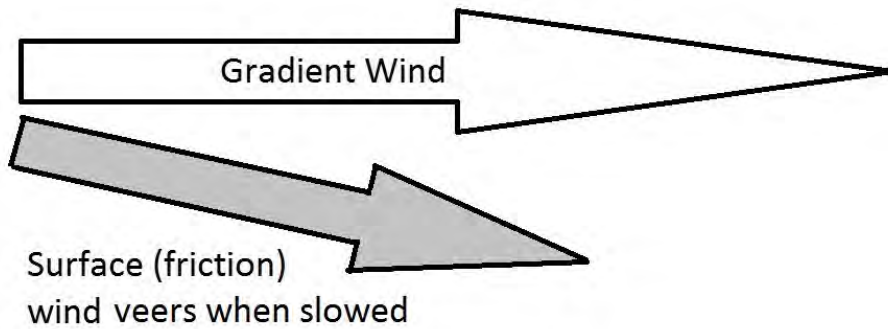


Thunderstorms



Obstructions

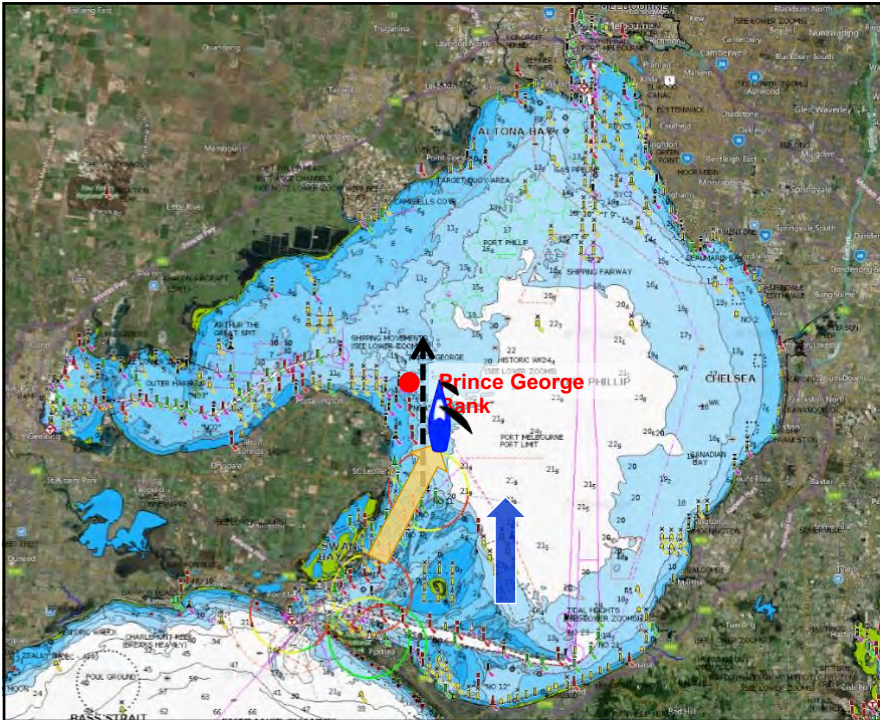
- When wind is slowed as it goes over land, it veers (goes clockwise) in southern hemisphere



Part 1: When you are Adjacent to Headland

SW Wind **Veered** over land Reinforces with Gradient Southerly wind to become South South Westerly and stronger
Wind **Veers** over land and **slows** becomes South Westerly

Gradient Southerly Wind

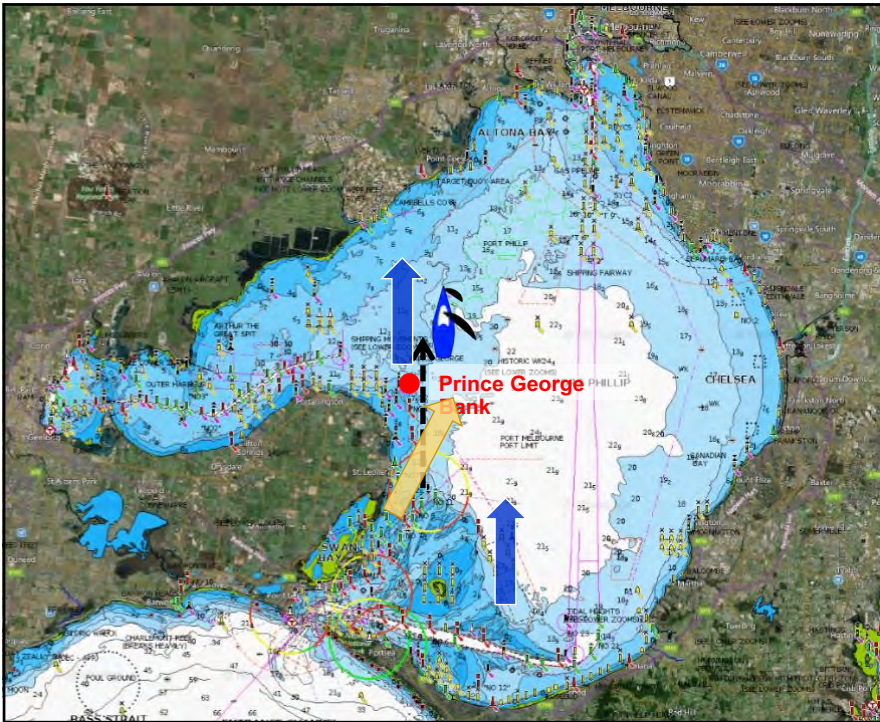


Part 1 You are Adjacent to Headland

SW Wind **Veered**
over land
Reinforces with
Gradient Southerly
wind to become
South South
Westerly and
stronger



Gradient
Southerly Wind

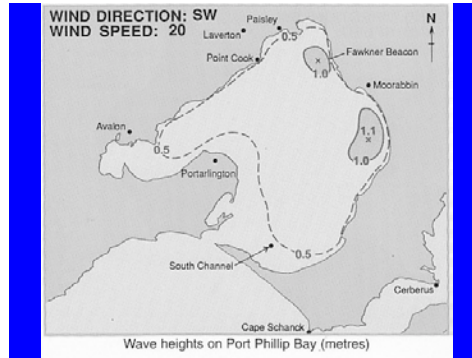
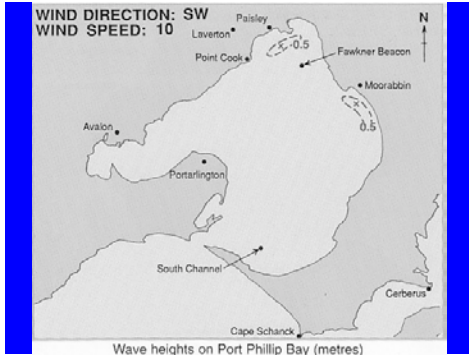


Part 2: You are Past Headland

South South Westerly
wind **Backs** and
softens to Gradient
Wind Strength and
Direction

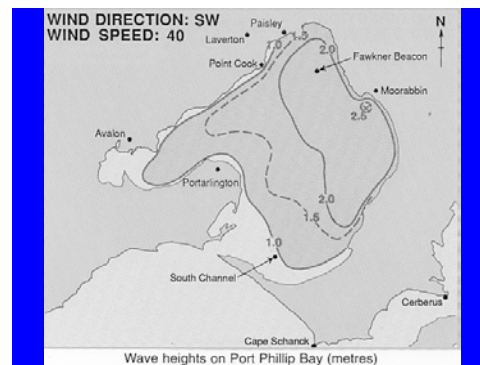
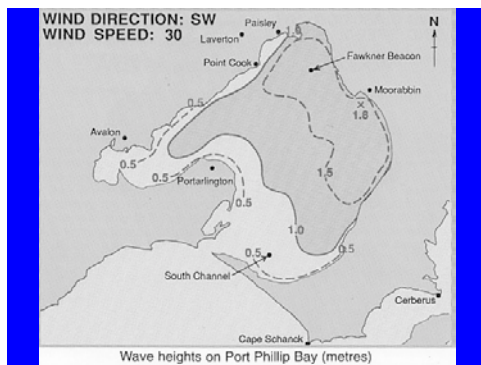


Effect of Wind on Sea State



- Wave heights depends on wind strength and the distance over which the wind has been blowing (fetch)
- Also depends on how long the wind has been blowing

Effect of Wind on Sea State



- SW Wind of 30-30 knots

Effect of Wind on Sea State

- Winter NW Gales on Port Phillip



Poll

- What determines the effect of wind on the sea state?

Break/Questions

Interact with Us

Train



Navigation
On Water Rip Tour
Weather
Foredeck Essentials

Race

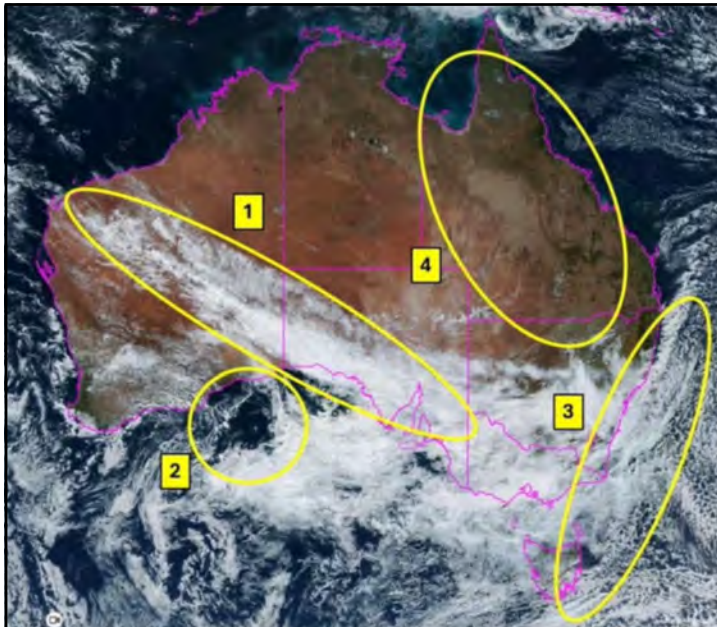


Destination Races to:
Devonport, King Island, Hobart
Apollo Bay, Port Fairy,
Coastal Sprints

Volunteer



Support
Many Roles
Race Management, Media,
Training Support, Mentoring



Satellite image of Australia

Thursday June 13th, 2pm AEST

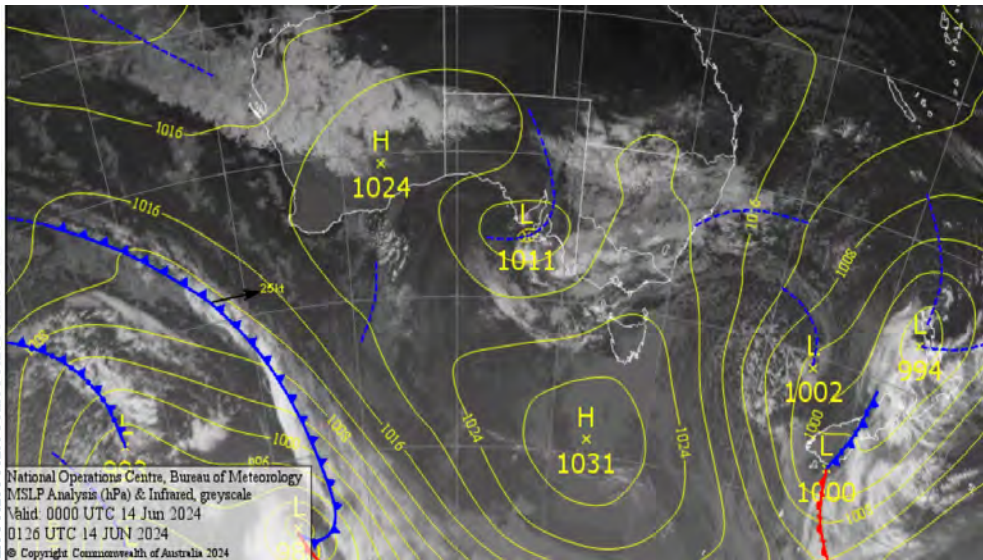
1. The cloud band that's been bringing rain to Western Australia is weakening and becoming patchy over the west. However, it has now extended into southern South Australia, where it's bringing patchy showers today.

2. Cloud is starting to wrap around a developing low pressure system in the Great Australian Bight. This system will move eastwards over the next day or two and bring areas of rain to parts of southern SA, before weakening by the weekend.

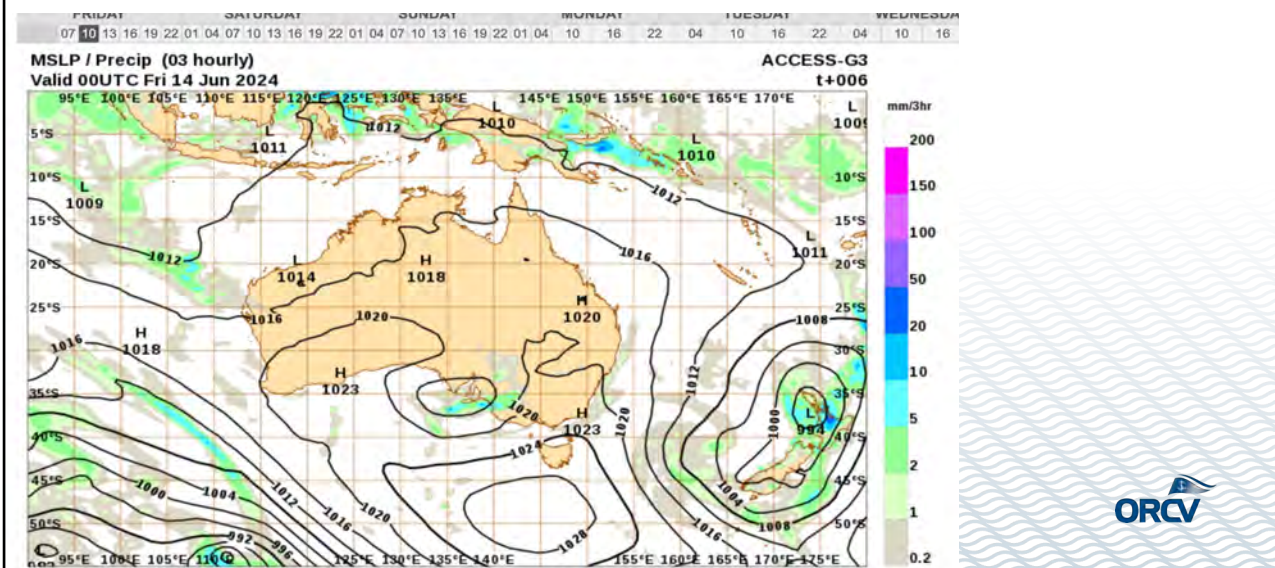
3. This area of speckled cloud off the east coast is an area of very cold, unstable air. This is a cold, southerly airstream which is flowing up from the Southern Ocean. It will bring showers to parts of the east coast over the next several days – especially areas with south-facing coastlines such as the Hunter Coast in New South Wales, East Gippsland in Victoria, and southern Tasmania.

4. Clear skies combined with cool southerly winds saw a chilly start over Queensland and northern NSW this morning. Cape Flattery had its coldest June morning in over a decade (16.8°C). The coldest places in the country overnight were Woolbrook (-6.5°C) and Glen Innes (-6.3°C). Frosty mornings will continue across eastern Australia for much of the next week.

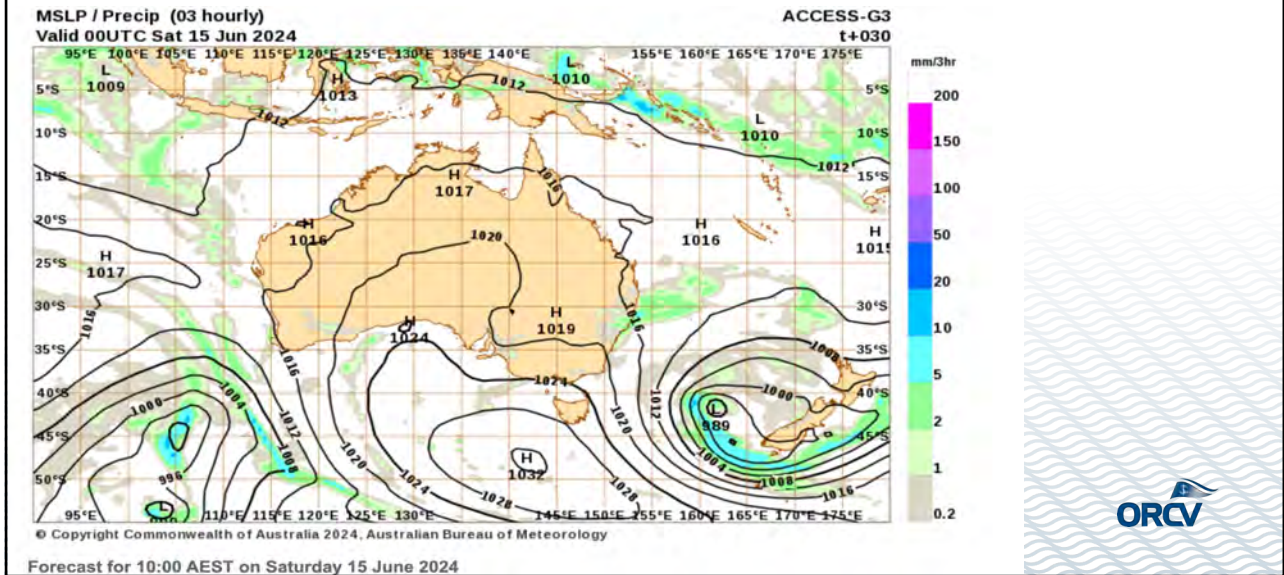
MSLP Analysis & greyscale 14/06/2024 10am



MSLP/Precip 14 Jun 10am

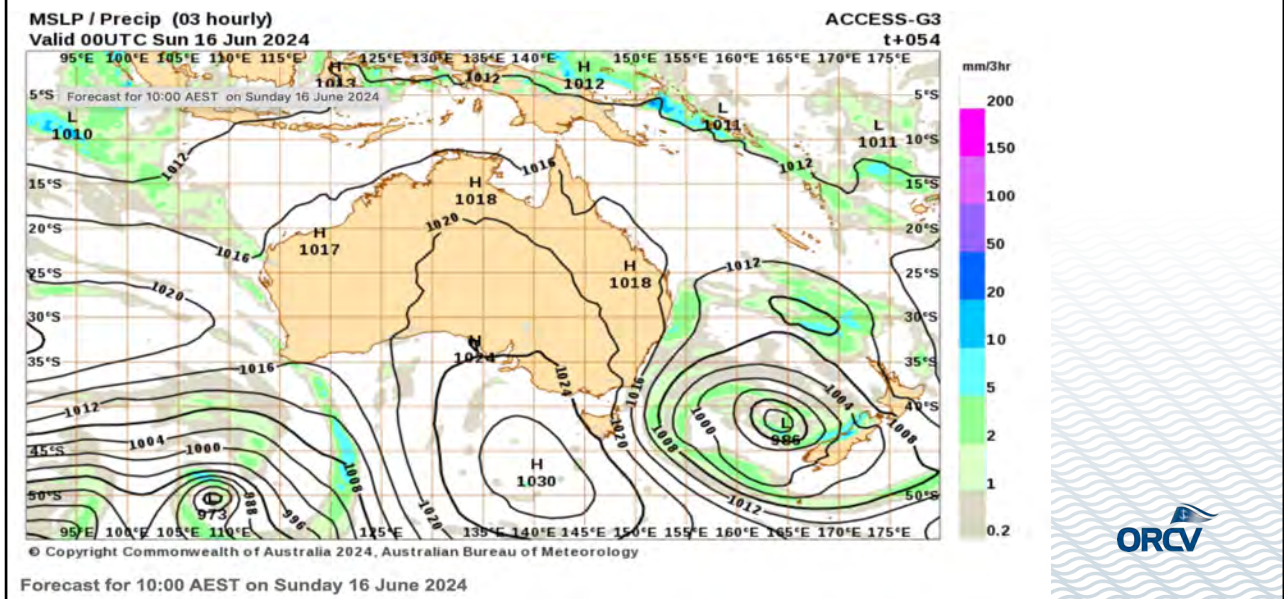


MSLP/Precip 15 Jun 10am



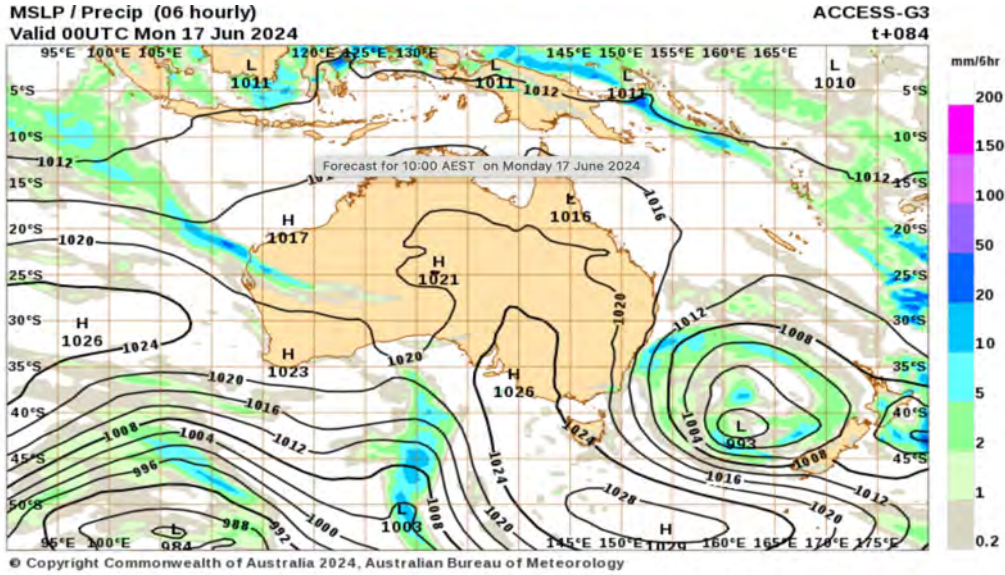
37

MSLP/Precip 16 Jun 10am

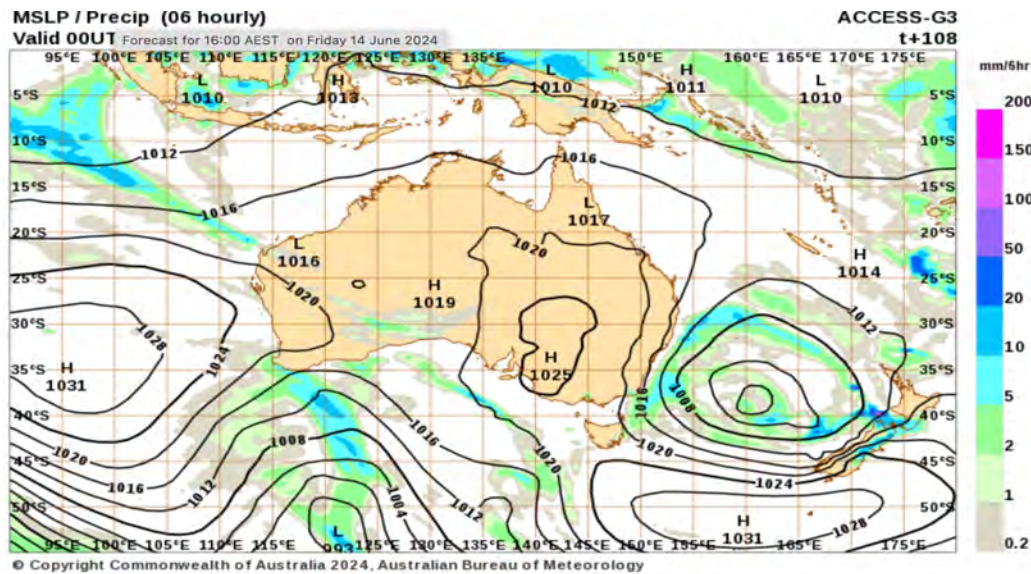


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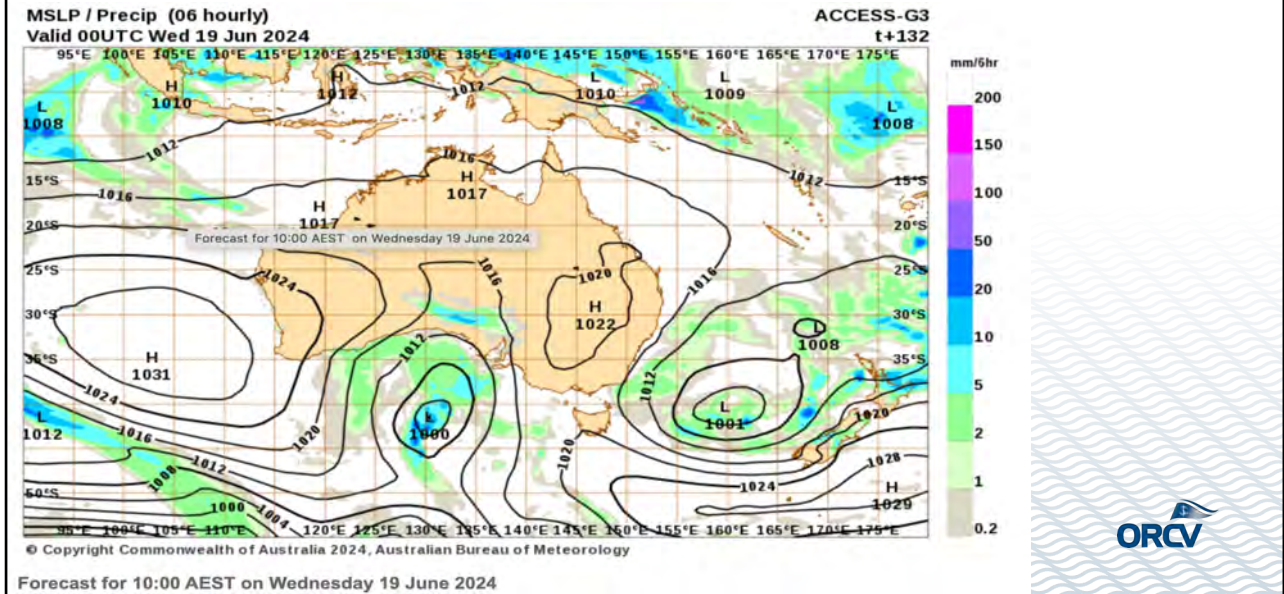
MSLP/Precip 17 Jun 10am



MSLP/Precip 18 Jun 10am

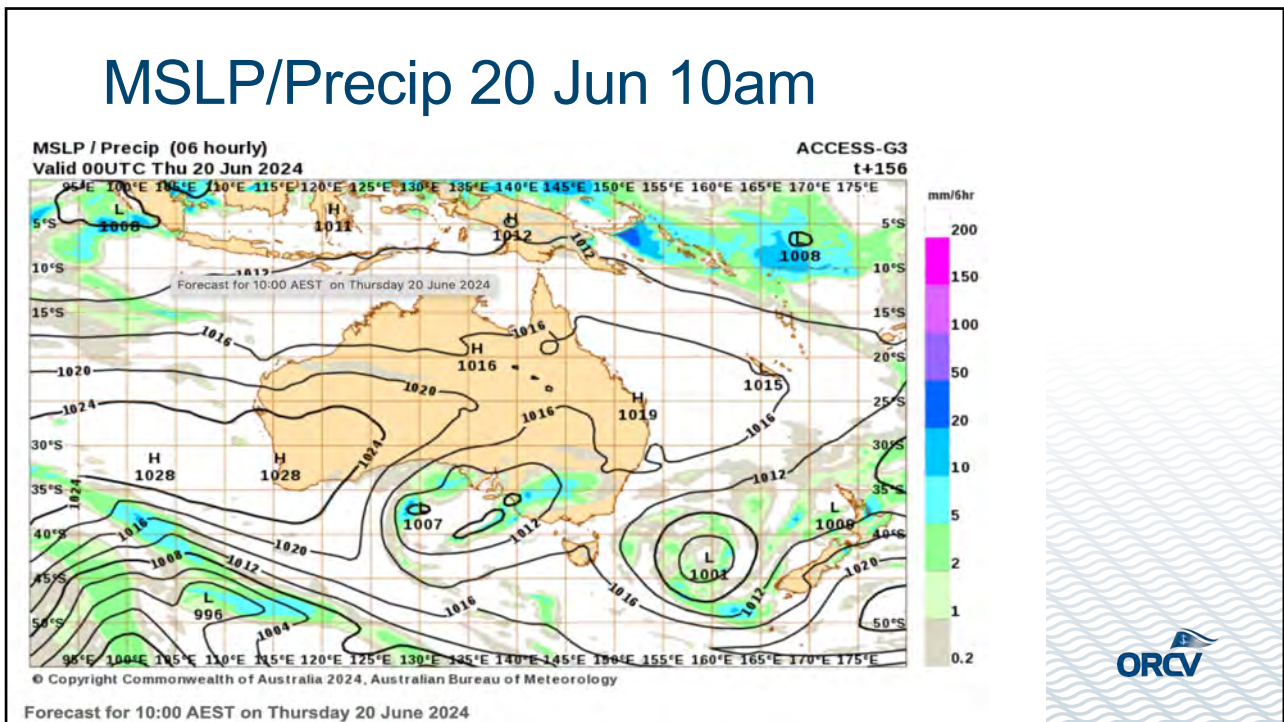


MSLP/Precip 19 Jun 10am

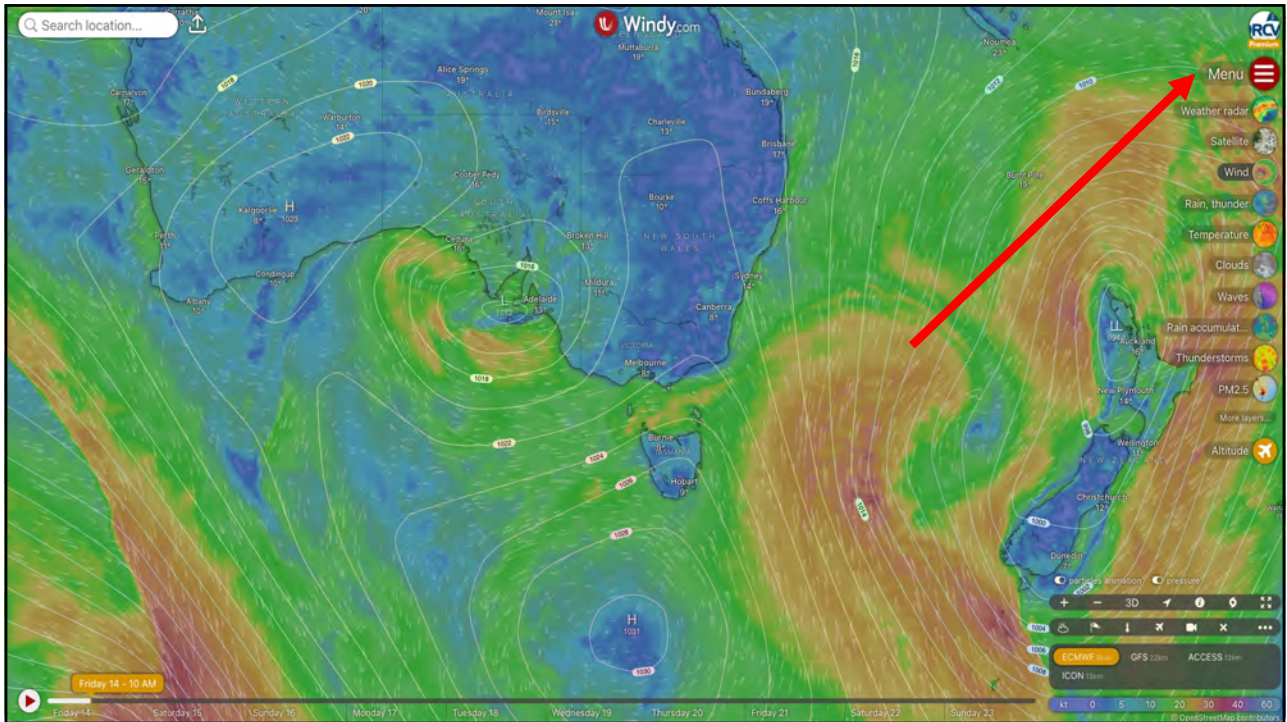


41

MSLP/Precip 20 Jun 10am



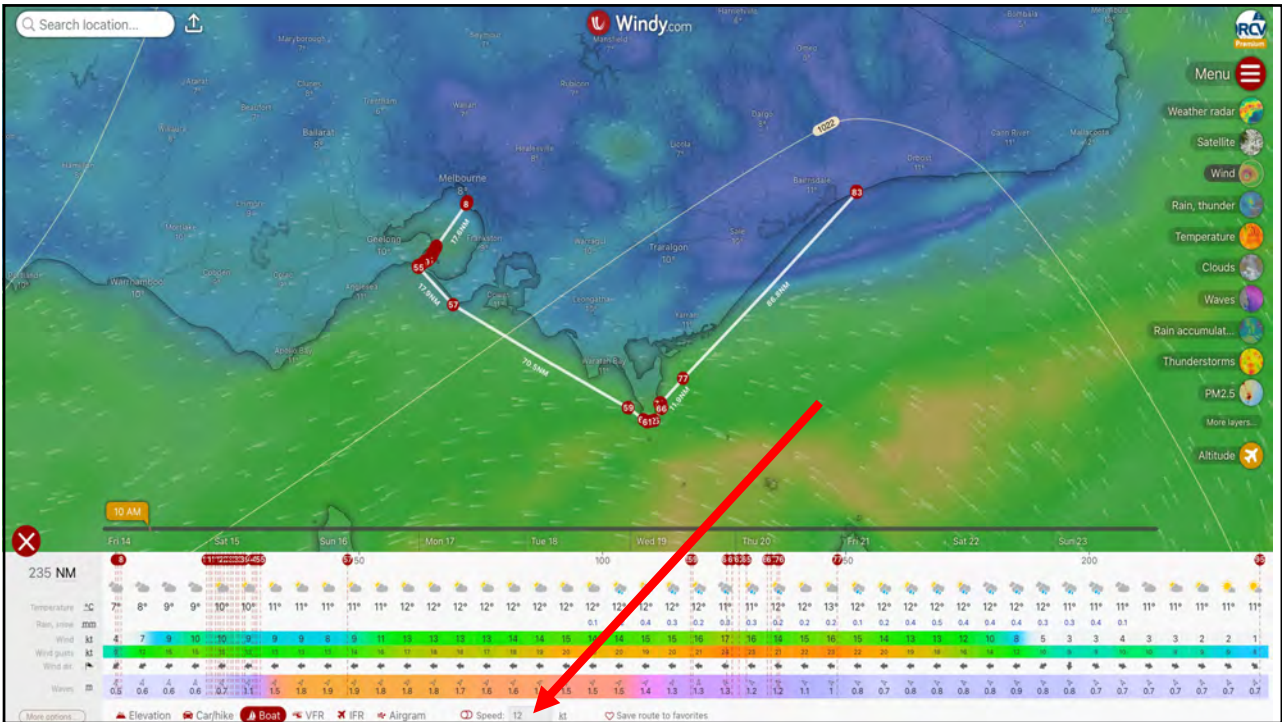
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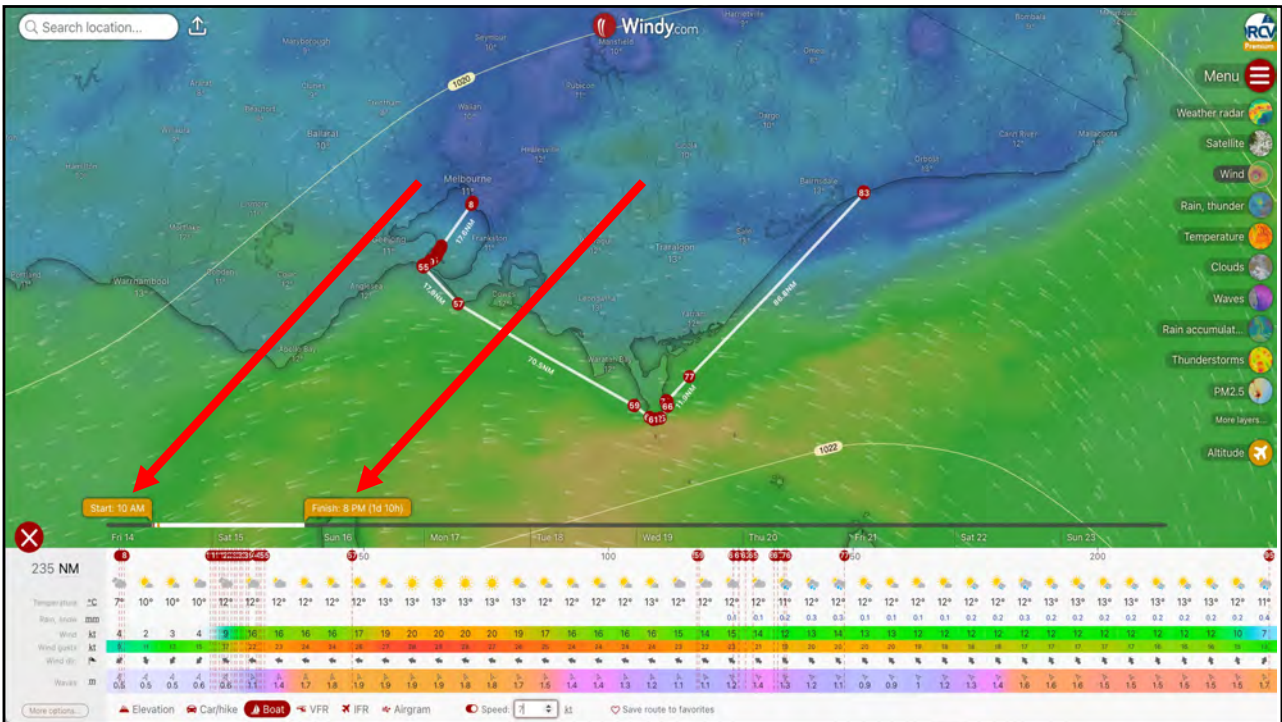
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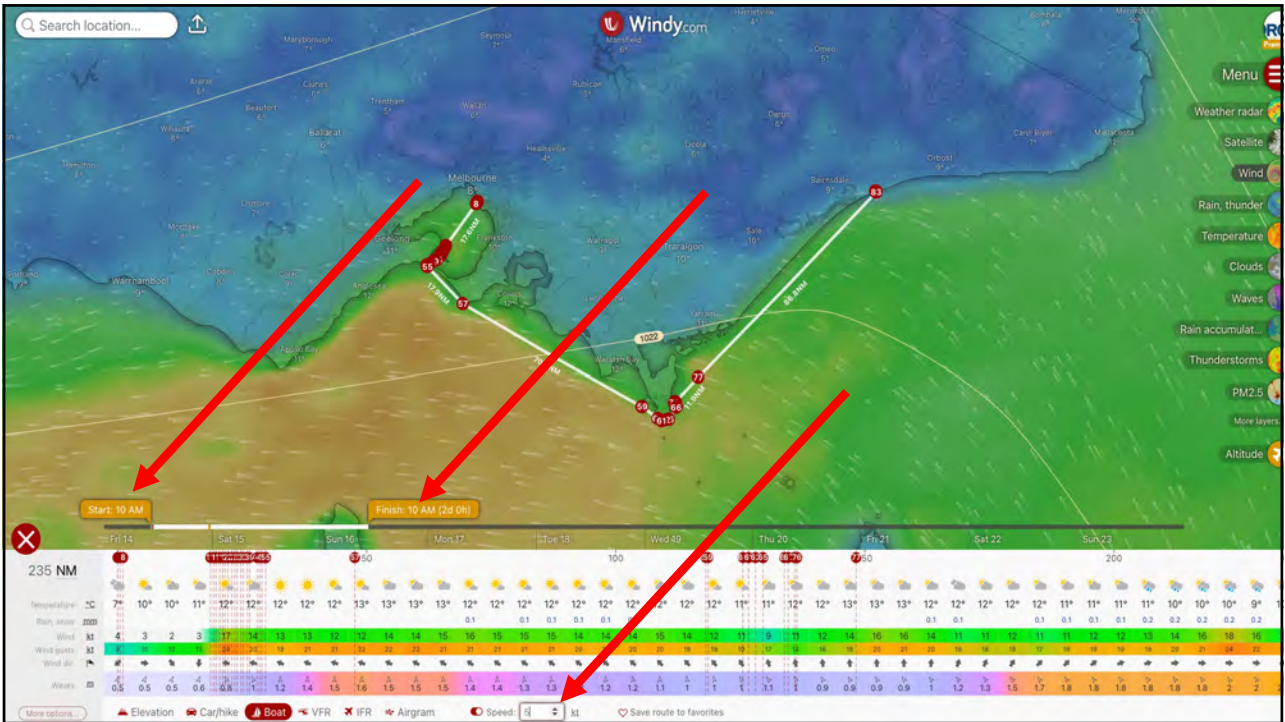
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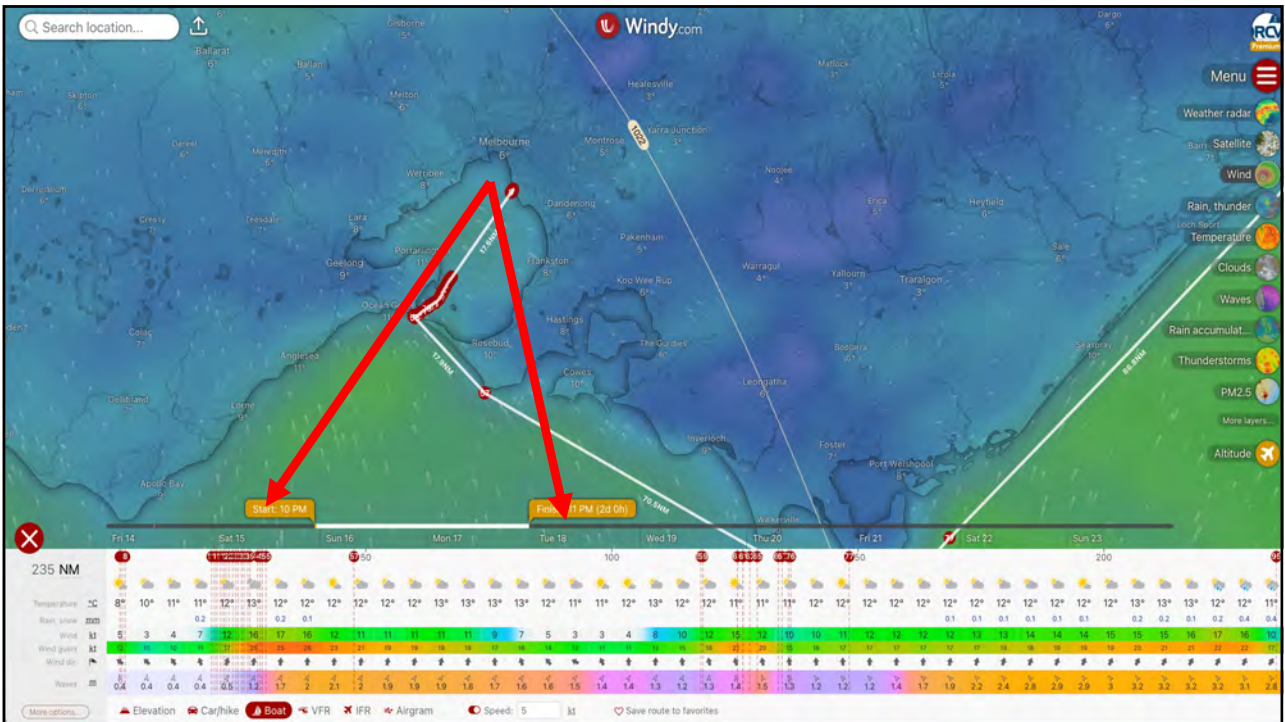
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Forecasts

- Port Phillip
- Western Port
- MetEye forecast wind and wave maps for Port Phillip and Western Port
- Gippsland Lakes
- Local & coastal waters forecasts via clickable map
- Bass Strait and approaches
- MetEye forecast wind and wave maps

Observations

- Latest weather for the Melbourne area
- Live wind map for Victoria
- Latest coastal weather
- Coastal observations via clickable map
- Latest weather graphs via clickable map
- Radar View

National Services

Marine Wind Maps

Tide Predictions

Sea Temperature & Currents

Interactive Weather and Wave Maps

Northern wet season 2023–2024

Climate summary out now [▶](#)

Advertisement

- Averages and trends
- Definitions
- Give feedback

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LOCATIONS MAP | **LOCATIONS LIST**

NSW | VIC | QLD | WA | SA | TAS | NT | Offshore & Pacific | Antarctica

1000 km / 500 nmi

Tide locations | Tidal streams

To begin, choose a location from the **map** or **locations list**.

select a location

54

LOCATIONS MAP
LOCATIONS LIST

NSW | VIC | QLD | WA | SA | TAS | NT
Offshore & Pacific | Antarctica

To begin, choose a location from the map or locations list.

select a location

55

The Rip, VIC – June 2024
PRINT TABLE

FRI 14 JUN			SAT 15 JUN			SUN 16 JUN			MON 17 JUN			TUE 18 JUN			WED 19 JUN			THU 20 JUN		
SLACK	MAXIMUM		SLACK	MAXIMUM		SLACK	MAXIMUM		SLACK	MAXIMUM		SLACK	MAXIMUM		SLACK	MAXIMUM		SLACK	MAXIMUM	
TIME	TIME	RATE	TIME	TIME	RATE	TIME	TIME	RATE	TIME	TIME	RATE	TIME	TIME	RATE	TIME	TIME	RATE	TIME	TIME	RATE
2:19 am	6:01 am	+2.85	3:00 am	5:43 am	+2.77	3:43 am	6:29 am	+2.76		12:14 am	-4.28		12:53 am	-4.24		1:35 am	-4.23		2:23 am	-4.29
7:31 am	10:21 am	-4.25	8:23 am	11:09 am	-3.78	9:23 am	12:03 pm	-3.29	4:28 am	7:19 am	+2.84	5:17 am	8:13 am	+3.04	6:07 am	9:07 am	+3.32	6:58 am	9:58 am	+3.65
1:53 pm	4:40 pm	+3.78	2:27 pm	5:14 pm	+3.48	3:04 pm	5:49 pm	+3.09	10:31 am	1:01 pm	-2.81	11:49 am	2:07 pm	-2.37	1:07 pm	3:18 pm	-2.14	2:18 pm	4:31 pm	-2.28
8:32 pm	11:06 pm	-4.37	9:00 pm	11:39 pm	-4.33	9:28 pm			3:47 pm	6:35 pm	+2.61	4:43 pm	7:38 pm	+2.07	6:02 pm	8:56 pm	+1.66	7:36 pm	10:03 pm	+1.47
									9:59 pm			10:33 pm			11:15 pm					

Previous 7 Days
START DATE: 7 DAYS FROM 14-06-2024 CHANGE
Next 7 Days

Rates in Knots, Positive (+) Direction to 038 degrees, Negative (-) Direction to 200 degrees

Moon Phases

New Moon

First Quarter

Full Moon

Last Quarter

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LOCATIONS MAP
LOCATIONS LIST
i

NSW | VIC | QLD | WA | SA | TAS | NT
Offshore & Pacific | Antarctica

Victoria

- Altona
- Apollo Bay
- Barracouta Platform
- Barwon Heads
- Bouchier Channel
- Cowes Jetty
- Elizabeth Island
- Flinders Jetty
- Gabo I.
- Geelong
- Hovell Pile
- Lakes Entrance (Outer)
- Lorne
- Melbourne (Williamstown)
- Mornington
- Port Fairy
- Portland
- Port Campbell
- Queenscliff
- Rabbit Island
- Rosebud Jetty
- San Remo
- Sandringham
- South Channel
- St Kilda
- St Leonards
- Tooradin
- Waratah Bay
- Warmambool
- Werribee
- West Channel Pile
- Western Port (Sandy Point)

The Rip, VIC

Next Slack water in **2 hrs 17 min**

Current Time Zone: AEST (UTC +10:00)

Latitude: 38° 17' 54" S
Longitude: 144° 37' 50" E

PDF Links:

- [2023 Tides](#)
- [2024 Tides](#)
- [2025 Tides](#)

Caution: Tidal predictions for this location are based on limited observations and forecasts.

[Sea Level Forecasts](#)

Map based ocean forecasts for temperature, currents, sea level and salinity.

[Sea Temperature Analysis](#)

Ocean temperature maps for the Sea Surface and Subsurface.

Daily, weekly and monthly periods covering Australia, nearby regions and the globe.

[Further Tidal Information](#)

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Lakes Entrance (Outer), VIC – June 2024
PRINT TABLE

	FRI 14 JUN	SAT 15 JUN	SUN 16 JUN	MON 17 JUN	TUE 18 JUN	WED 19 JUN	THU 20 JUN
HIGH	1:29 am 1.12 m	HIGH 2:29 am 1.07 m	HIGH 3:40 am 1.03 m	HIGH 4:50 am 1.00 m	LOW 12:14 am 0.68 m	LOW 12:54 am 0.60 m	LOW 1:31 am 0.53 m
LOW	8:32 am 0.58 m	LOW 9:13 am 0.59 m	LOW 9:50 am 0.61 m	LOW 10:25 am 0.62 m	HIGH 5:45 am 0.98 m	HIGH 6:31 am 0.97 m	HIGH 7:14 am 0.97 m
HIGH	3:04 pm 1.02 m	HIGH 3:45 pm 1.06 m	HIGH 4:29 pm 1.10 m	HIGH 5:15 pm 1.14 m	LOW 10:59 am 0.64 m	LOW 11:32 am 0.65 m	LOW 12:08 pm 0.67 m
LOW	8:49 pm 0.88 m	LOW 10:16 pm 0.83 m	LOW 11:26 pm 0.76 m		HIGH 6:01 pm 1.19 m	HIGH 6:45 pm 1.24 m	HIGH 7:29 pm 1.28 m

◀ Previous 7 Days
START DATE: 7 DAYS FROM 14-06-2024 [CHANGE](#)
Next 7 Days ▶▶

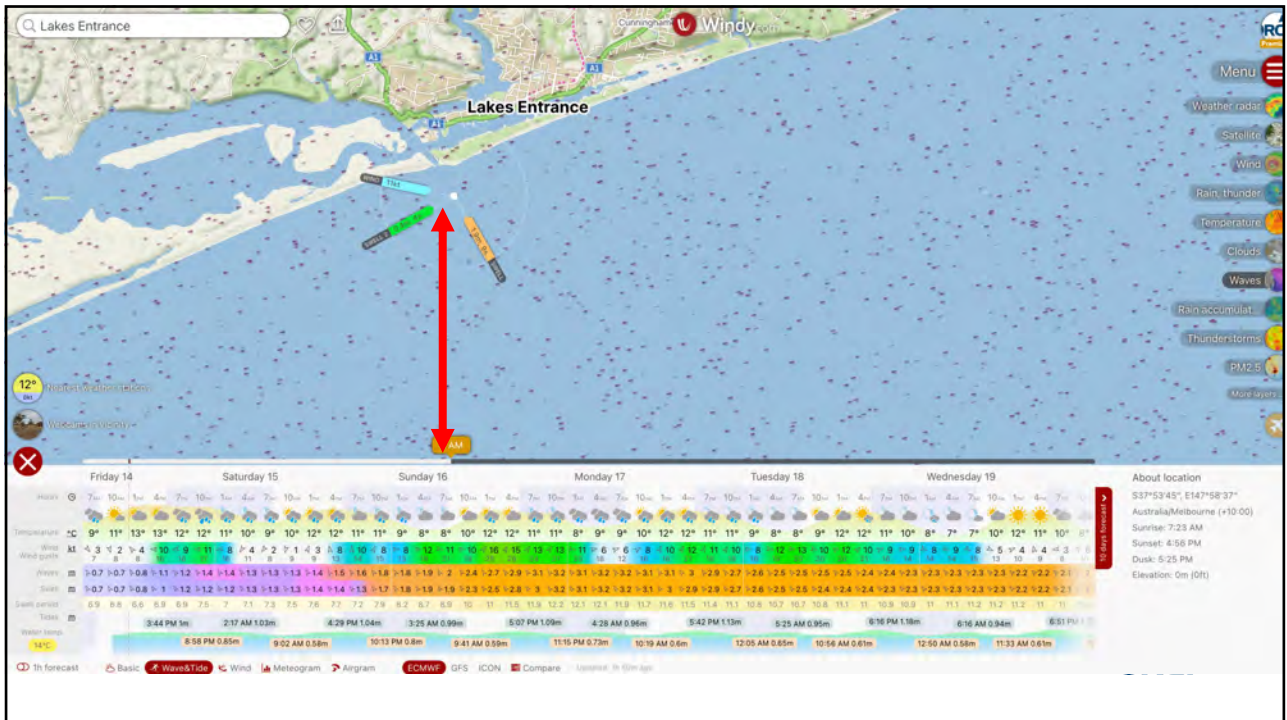
Moon Phases

New Moon
 First Quarter
 Full Moon
 Last Quarter

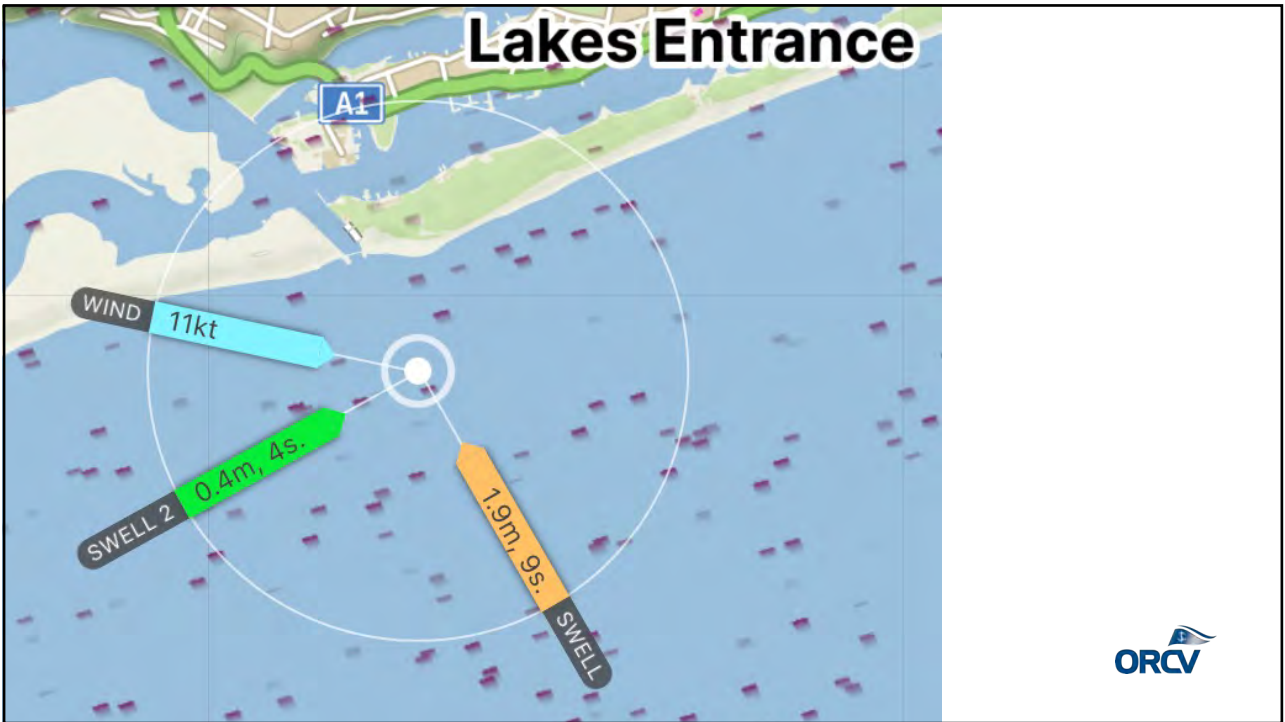
58



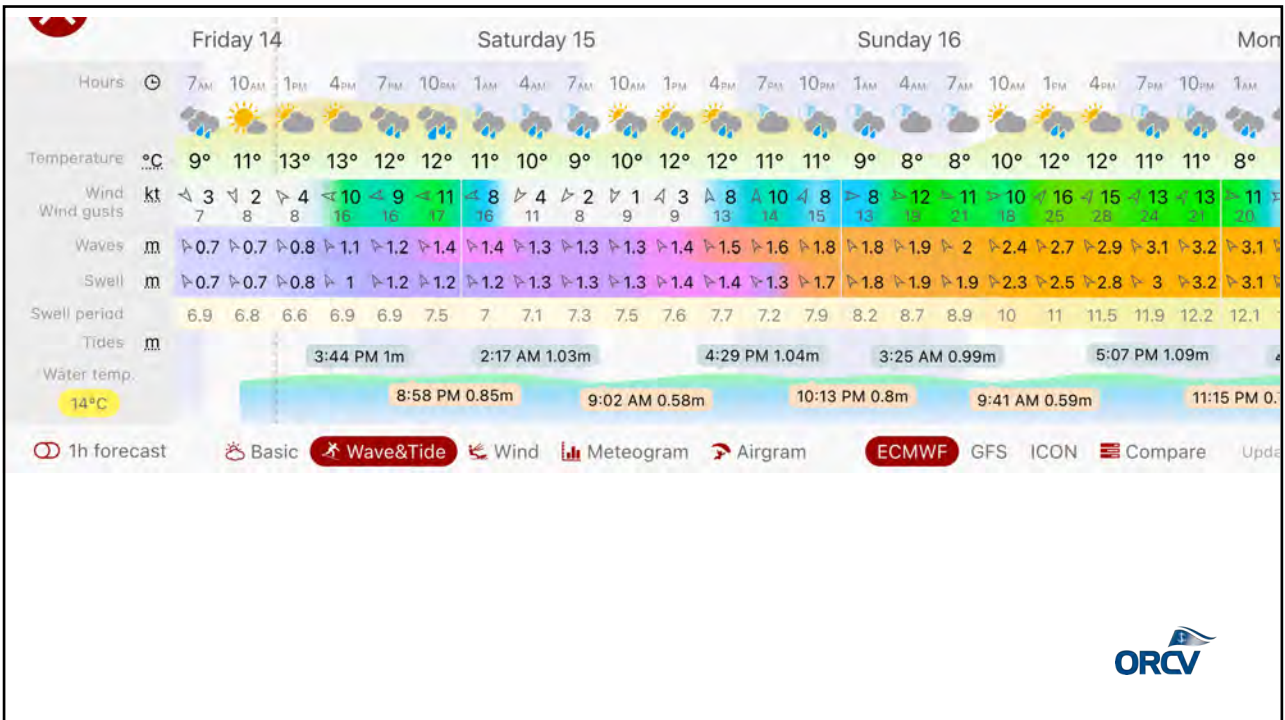
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60

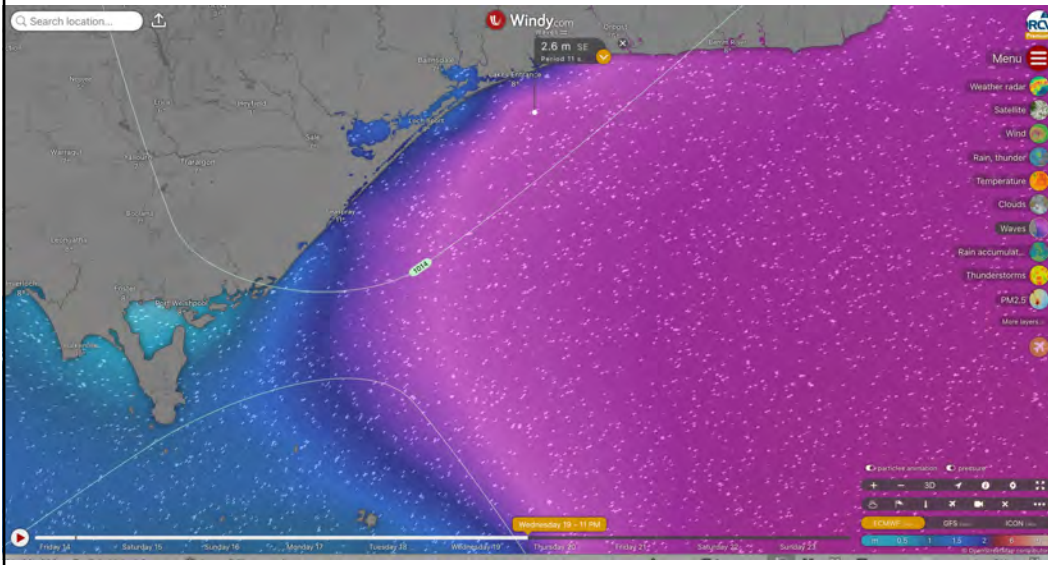


61

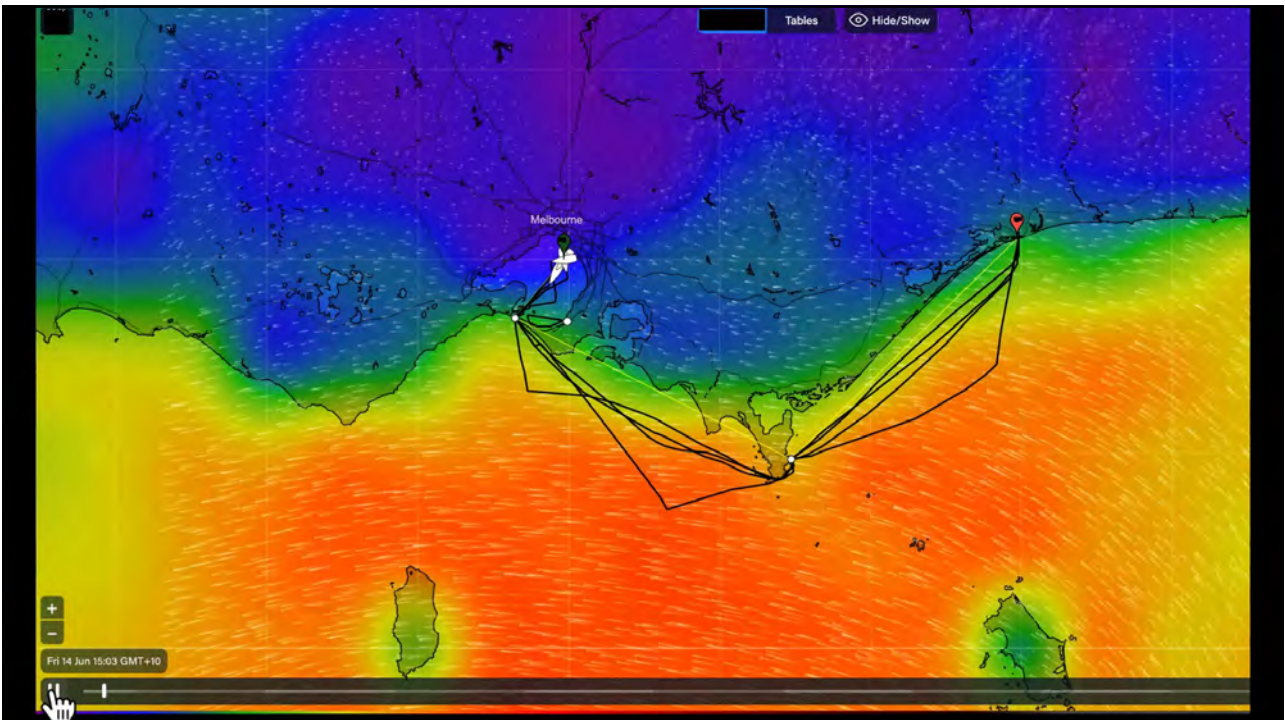


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Windy Waves



63

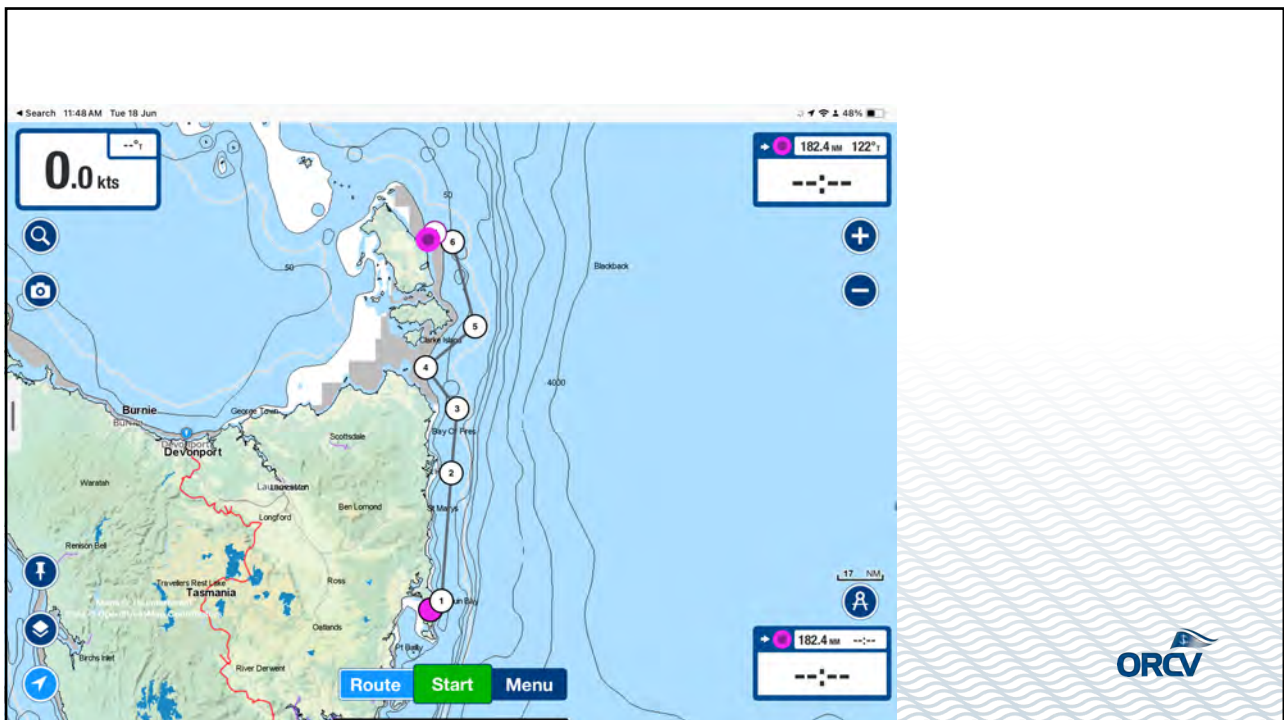


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Navigation Planning

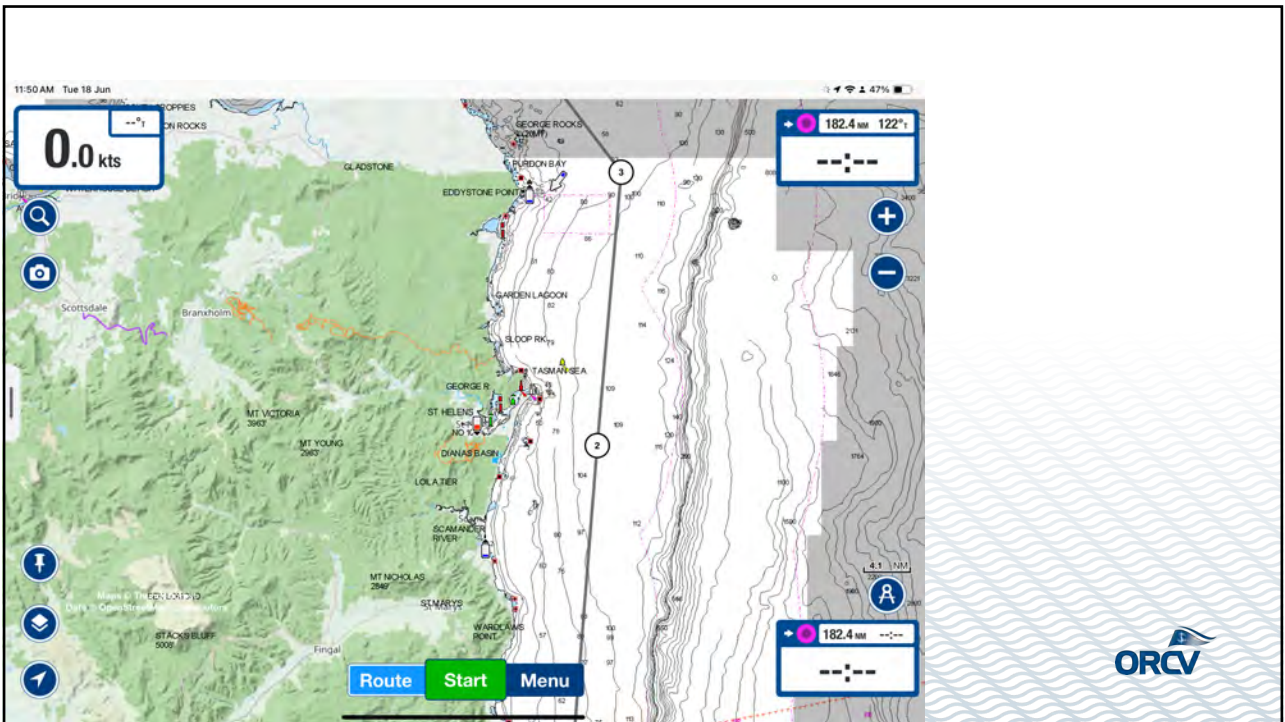
Safe Harbours

- How easy is it to enter
- What winds is it safe for
- Is tide a factor
- Is sea state a factor
- Are we being unrealistic in our departure time

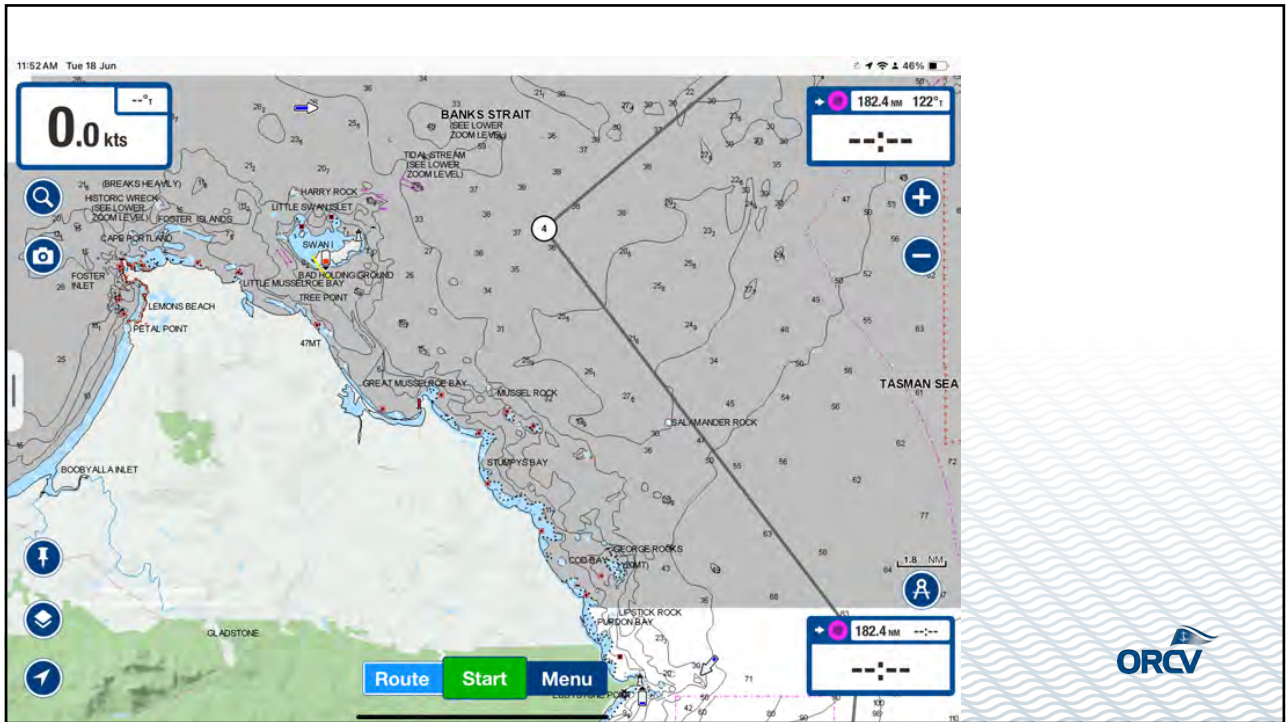




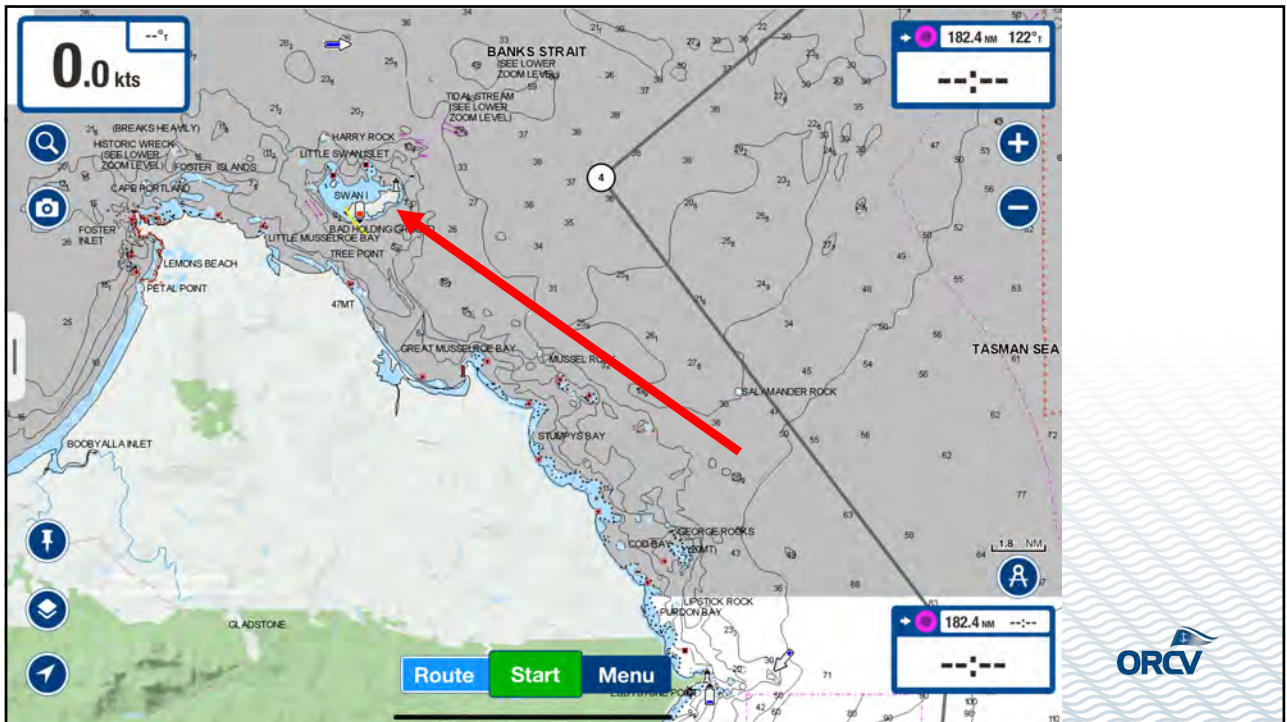
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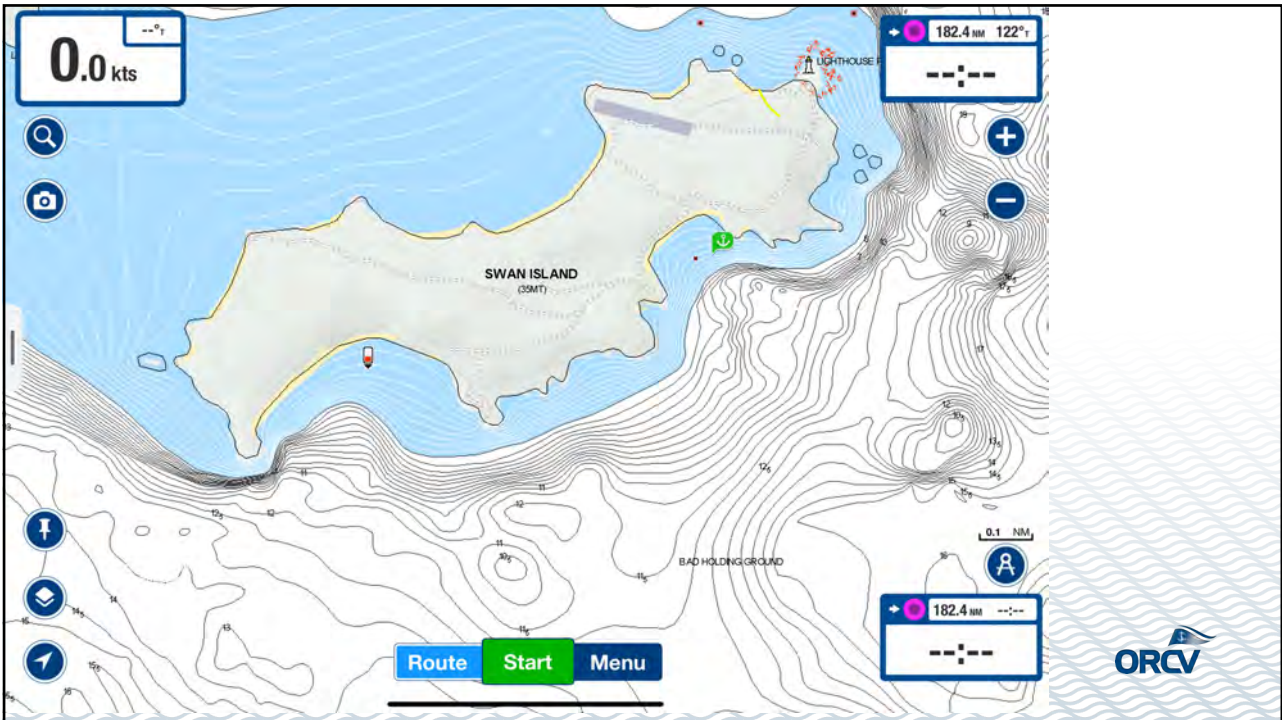
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What ChatGPT has to say about the Island

Pros

1. **Shelter:** The island can provide some shelter from prevailing winds, particularly from the west. However, the level of protection may vary depending on weather conditions.
2. **Scenery and Wildlife:** The island offers beautiful natural scenery and abundant wildlife, making it an interesting spot for nature enthusiasts.

Cons

1. **Exposure to Weather:** The island is exposed to the elements from the Bass Strait, especially easterly and northeasterly winds, which can make anchoring challenging.
2. **Limited Facilities:** There are no facilities or services available on the island for boats or visitors.
3. **Depth and Holding Ground:** The anchoring depths and holding ground around Swan Island might not be ideal. It's essential to have good anchoring equipment and to be cautious about the seabed conditions.

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ChatGpt's Recommendations

Recommendations

- **Weather Check:** Always check the weather forecast before planning to anchor near Swan Island, as conditions can change rapidly.
- **Good Anchoring Gear:** Ensure you have reliable anchoring equipment suitable for potentially challenging conditions.
- **Navigation Charts:** Use detailed navigation charts to understand the depths and seabed conditions around the island.
- **Alternative Anchorages:** Consider nearby alternatives for anchoring, such as Waterhouse Island or the sheltered bays along Tasmania's northeastern coast, which might offer better protection and conditions.

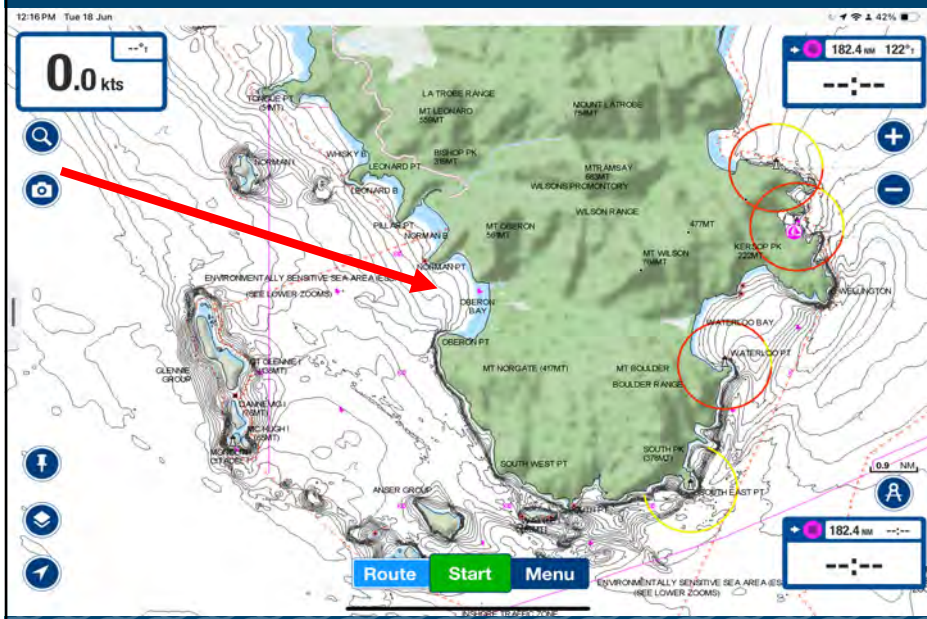
In summary, while Swan Island can provide a unique and scenic anchoring experience, it may not be the best spot for all conditions due to exposure to the elements and limited facilities. Careful planning and preparation are essential.

What are or options for Safe Harbors on our way to Lakes Entrance



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Oberon Bay



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Refuge Cove



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