



BBYC Heat Stress Risk Policy

This policy relates to the cancellation or abandonment of BBYC sailing events when elevated heat stress risk conditions are forecast. The purpose of this policy is to inform Club Officers, as well as members, in decision-making with respect to sailing during hot weather, including in organised BBYC events.

This policy does not infer any liability on the Club, its Board of Directors, Race Committee, Race Starters or any agent of the Club for any injury sustained while racing or cruising in an event organised by the Club or its agents. All skippers and other participants are advised to consider the heat stress risks before participating in any sailing event conducted by the Club.

The BBYC policy is based on the Extreme Heat Policy issued by Sports Medicine Australia (SMA; v1.0, issued February 2021). The full policy document is available at <https://sma.org.au/sma-site-content/uploads/2021/02/SMA-Extreme-Heat-Policy-2021-Final.pdf>. Additional useful information on heat-related hazards is available at <https://sma.org.au/resources-advice/policies-and-guidelines/hot-weather/>.

Heat illness is characterised by nausea, dizziness, vomiting and fainting, and can result in death. The heat stress risk assessment published by SMA models the effect of both temperature and humidity, adjusted for solar radiation and wind.

BBYC members should note that reading or using these guidelines, or the full SMA policy, is not the same as getting medical advice from your doctor or health professional.

How to Predict Heat Stress Risk during Sailing

Under the SMA policy, sports in Australia have been split into 5 “risk classification” groups, 1 being the lowest and 5 the highest risk group. Sailing is in risk group 2. Heat stress risk while sailing can be determined by inputting predicted temperature and relative humidity (RH) into the SMA Heat Stress graph for sport risk group 2 (Figure 2 below).

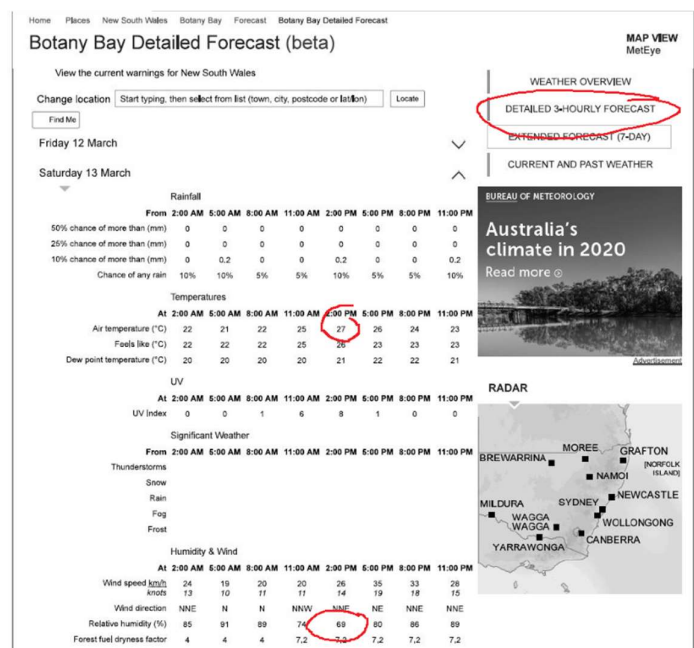


Figure 1. BOM Detailed 3-hourly forecast for Botany Bay

To find the forecast temperature and RH for where and when you will be sailing, go to the Australian Bureau of Meteorology website. The detailed 3-hourly forecast for Botany Bay can be found at: <http://www.bom.gov.au/places/nsw/botany-bay/forecast/detailed/>. See Figure 1 above. Click on “Detailed 3-Hourly Forecast”, select the appropriate date then, in the column for the time you will be sailing, note the “Air Temperature (°C)” value and, further down in the same column, note the concurrent “Relative Humidity (%)” value.

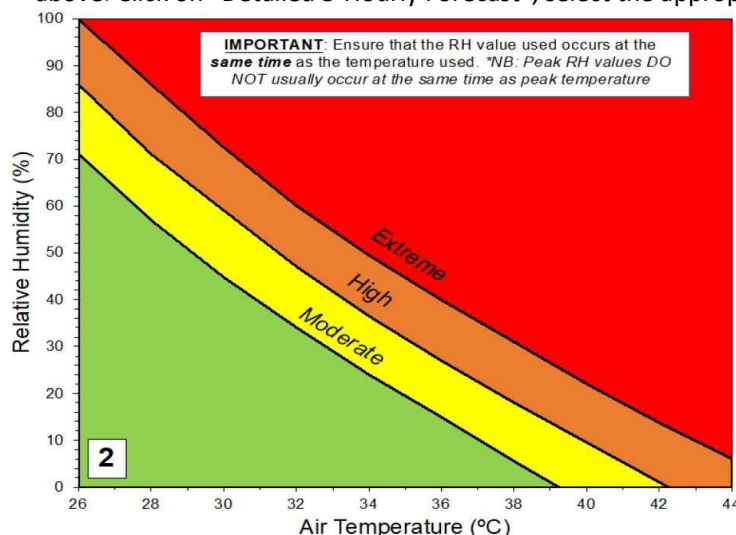


Figure 2. Heat Stress Risk for sailing. **GREEN** = Low Risk, **YELLOW** = Moderate Risk; **ORANGE** = High Risk; **RED** = Extreme Risk.

Figure courtesy Sports Medicine Australia Extreme Heat Policy.

On the graph of Heat Stress Risk (Figure 2 to the left) read across from the forecast RH to meet the line up from the forecast temperature – the colour zone at this point of intersection predicts the heat stress risk. For example, the forecast described above, for RH of 69% and temperature of 27°C, would just fall into the moderate risk for heat stress illness during sailing.

Increased susceptibility to Heat Stress

While even the fittest athlete can fall victim to heat-related illness, certain people are especially vulnerable:

- Aged over 65 years, especially if unfit. Note that thermoregulation may become progressively worse with age, so risk is generally greater with more advanced age;
- Heart or kidney conditions present a greater risk of cardiovascular or renal failure during or following exercise in the heat;
- Recently sick with a fever;
- Taking prescription medications that impair sweating;
- A reduced ability to behaviourally respond to heat, e.g. due to mental health challenges or substance abuse;
- Very high body fat;
- Recently (in the past week) arrived from a cold climate.

Mitigating Heat Stress risk while sailing

Plan ahead to sail safely in the heat. The recommendations below from SMA can reduce the risk of heat stress.

Low Risk (Green Zone):

- Hydrate and wear appropriate clothing
- Ensure pre-exercise hydration by consuming 6 ml of water per kilogram of body weight every 2-3 hours before exercise. For a 70kg individual, this equates to 420ml of fluid every 2-3 hours (a standard sports drink bottle contains 500ml).
- Drink regularly throughout exercise. You should aim to drink enough to offset sweat losses, but it is important to avoid over-drinking because this can also have negative health effects.
- Where possible, select light-weight and breathable clothing with extra ventilation.
- Remove unnecessary clothing/equipment and/or excess clothing layers.
- Reduce the amount of skin that is covered by clothing – this will help increase your sweat evaporation, which will help you dissipate heat*.

*NOTE: Sunscreen does NOT impede sweating or affect heat loss from the skin. Sunscreen should be applied regularly, as per instructions, to avoid sunburn.

Moderate Risk (Yellow Zone): Follow the Low Risk recommendations. In addition, for scheduled yacht races that coincide with moderate risk periods, the Race Committee may decide to shorten the course/race duration to minimise the exposure of participants.

Note that while hats provide UV protection, they provide minimal protection against the heat.

High Risk (Orange Zone): Follow the Low and Moderate Risk recommendations. In addition, the actions listed here may reduce the incidence of heat stress:

- Drinking cold fluids and/or ice slushies before sailing. Note that cold water and ice slushy ingestion during exercise is less effective for cooling.
- Submersing your arms/feet in cold water.
- Water dousing – wetting your skin with cool water using a sponge or a spray bottle helps increase evaporation, which is the most effective cooling mechanism in the heat.
- Placing an ice pack or damp towel filled with crushed ice around your neck.

Extreme (Red Zone): The SMA Policy recommends that all sporting activities should be suspended, and active cooling strategies adopted.

As a recent example, the BBYC race held on Saturday 28th Nov 2020 coincided with a recorded temperature of 41°C and RH of 13%. These readings are in the High risk zone for heat stress risk. A number of BBYC crew were impacted during that race.

Race Cancellation or Abandonment

BBYC events will not proceed when the combination of temperature and RH are forecast to reach the Extreme zone on the above chart. Further, the BBYC Race Committee has the discretion to abandon scheduled races when the combination of temperature and RH are forecast to reach the High zone on the above chart.

Signs and Management of Heat Stress

During periods of elevated heat stress risk, ensure all crew members are observed closely for signs of stress. If any crew are affected, it is strongly recommended that the boat turns back to the club immediately. Advise the starter boat by VHF radio and, if the person is fainting or otherwise requires medical assistance, call an ambulance on 000. In the meantime, assess and treat the affected crew as per Table 1 below.

Table 1. Table courtesy Sports Medicine Australia Extreme Heat Policy

	Heat Exhaustion/Syncope¹	Exertional Heat Stroke
Symptoms (what a sufferer might feel)	• Headache • Dizziness • Weakness • Nausea • Vomiting	• Brain symptoms including: ○ Confusion ○ Agitation • Symptoms can develop rapidly • EHS is a medical emergency
Signs (how a sufferer is observed)	• Fainting • Increased heart rate • Decreased blood pressure [Absence of brain symptoms, and core temperature usually <40°C]	• Brain symptoms including: ○ Confusion ○ Unsteadiness ○ Aggressive or irrational behaviour ○ Altered level of consciousness, seizures, coma • Increased Heart rate • Increased breathing rate • Decreased blood pressure • Core temperature usually >40°C.
Immediate management	• Move person to shade and cool (below deck) • Remove protective equipment (eg life jacket, gloves, pads) • Remove as much clothing as possible • Apply lots of water to skin • Oral fluids • Lie on back with legs elevated • Return to land and shade ASAP • Watch for worsening	• ABC (airways, breathing, circulation) • Aggressively cool the body with ice and water • Call ambulance • Continue cooling while transfer to hospital *Cool first, transport second*

1 *Syncope is defined as a temporary loss of consciousness related to a reduction in perfusion to the brain. See <https://hopeforhearts.com.au/syncope/>*