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ADVISORY ON SEASONAL EL NIÑO CONDITIONS AND HEIGHTENED HAZE RISK FOR OUTDOOR ADVENTURE EDUCATION PROGRAMME PROVIDERS AND EDUCATORS

INTRODUCTION

1. This advisory provides guidance for Outdoor Adventure Education (OAE) programme providers and educators on managing the compounded risks of warmer temperatures, drier conditions, and transboundary haze arising from the anticipated El Niño¹ conditions.

BACKGROUND²

2. The Meteorological Service Singapore (MSS) has forecast El Niño conditions to develop between June and July 2026, with a more than 80% chance of occurrence this year. With Singapore's mean temperature already rising at 0.25°C per decade since 1948, El Niño will add further upward pressure on temperatures, particularly during the Southwest Monsoon season from June to September. Compounding this, a positive Indian Ocean Dipole (IOD) is also predicted to develop between July and August 2026. When both phenomena coincide, dry conditions can be significantly more intense and prolonged.

3. These conditions increase the likelihood of vegetation fires in the surrounding region. If fires develop and prevailing winds carry smoke towards Singapore, there is a risk of transboundary haze affecting us. Due to the outdoor nature of OAE programmes and the diverse health and fitness levels of participants, it is imperative for OAE programme providers to establish a readily-implemented and comprehensive management plan for their activities. The conditions expected in the second half of 2026 make this especially critical, as providers may need to manage the dual risks of elevated heat stress and deteriorating air quality simultaneously over an extended period.

UNDERSTANDING THE RISKS FOR OAE PROGRAMMES

4. Heat Stress. In the [OAE Council's Advisory on Seasonal Heat Stress Management \(2024\)](#), the OAE Council advises taking precautionary measures when the Wet Bulb Globe Temperature (WBGT) exceeds 30°C. Aggregated WBGT data from January 2018 to December 2023 reveals that average daytime (7am to 7pm) WBGT from March to October is higher than 28°C. Under El Niño conditions, these

¹El Niño is a naturally occurring climate pattern associated with changes in both the ocean and atmosphere in the equatorial Pacific Ocean, including an abnormal warming of the surface waters in the eastern equatorial Pacific. Typically lasting nine to 12 months and occurring every three to five years, it produces widespread and at times severe changes in the global climate. (Source: NEA)

² National Environment Agency (2026, 29 May), [El Niño Conditions Expected](#)

figures are likely to be elevated above historical averages, increasing the frequency and duration of periods that exceed the recommended threshold.

5. Transboundary Haze. Elevated PM_{2.5} concentrations – particularly at Band 2 levels (56-150 µg/m³) – can cause respiratory distress — especially for participants engaged in outdoor activity with pre-existing conditions such as asthma. The risk is compounded when haze and heat stress occur together, as participants may already be physiologically stressed before air quality deteriorates. Providers must be prepared to respond to rapidly changing conditions, as PM_{2.5} levels can fluctuate significantly throughout the day, especially during active haze episodes.

MITIGATION MEASURES FOR OAE PROGRAMMES

6. The OAE Council strongly encourages all OAE programme providers and educators to adopt the following measures. Given that the risk period potentially spans June through to October, these measures should be built into programme planning from the outset.

Pre-Programme

- a. Review and update Risk Management Plans to ensure there are adequate mitigation and contingency measures for both heat stress and haze. Plans should specifically address scenarios where both risks occur simultaneously. This includes thresholds and trigger points for modifying or suspending activities based on measurable environmental factors such as [WBGT levels](#), [1-hour PM_{2.5} readings](#), and the [24-hour \(Pollutant Standards Index\) PSI forecast](#).
- b. Enhance pre-activity screening for all participants to establish their fitness levels and identify those, including staff, with conditions that may increase their vulnerability to heat or haze, such as respiratory or cardiovascular conditions. Ensure that staffing ratios are sufficient to manage the demands of an extended high-risk period.
- c. Strengthen staff training and awareness on haze and heat-related injuries ahead of the season. Ensure all staff are competent in preventing, identifying, and treating early signs of heat injuries, such as dizziness, cramps, or confusion. Staff should additionally be briefed on the health effects of haze exposure and the appropriate responses for individuals showing signs of respiratory distress.
- d. Have an Emergency Action Plan (EAP) in place in preparation for any heat- or respiratory-related emergency. This should include pre-, during- and post-emergency procedures. Programme providers should reference the [EAP Best Practice Guide](#) published by the OAE Council.

During Programme

- a. Monitor and respond proactively to changes in WBGT and Heat Stress Level through NEA's real-time website or myENV mobile app. Develop and implement practical plans through a thorough risk assessment and by

referencing the Seasonal Heat Stress Advisory by the OAE Council. For air quality, refer to NEA's website and the myENV app for the latest haze updates and forecasts.

- b. Keep a close watch on staff and participants throughout the programme and introduce pre-emptive measures before conditions deteriorate. Recognise non-verbal cues of heat strain or respiratory discomfort, enforce routine hydration, and ensure periodic health checks.
- c. Apply clear no-go criteria when conditions reach established trigger points. Where air quality is poor or heat stress levels are elevated, be prepared to modify activities, relocate sessions indoors, or suspend the programme entirely until conditions improve. The safety and well-being of individuals must take precedence over programme continuity.

Post-Programme

- a. Debrief staff and review decisions made during the programme, particularly where trigger points were activated or conditions changed rapidly. Document observations on participant responses to heat and haze conditions to strengthen future risk assessments and planning.
- b. Inspect and maintain equipment used during the programme, as prolonged exposure to heat and dry conditions can accelerate wear on gear. Ensure that any equipment used in haze conditions — including air purifiers at base facilities — is checked and in proper working order before the next programme.
- c. Update Risk Management Plans based on lessons learnt, and share relevant observations with the OAE Council to support collective preparedness for the remainder of the El Niño period.

CONCLUSION

7. The OAE Council urges OAE programme providers and educators to remain vigilant against the dual risks of haze and heat stress over the coming months. Providers should factor the impact of prolonged dry and hot conditions into programme design and maintain a comprehensive haze and heat stress management plan throughout. With El Niño conditions expected to persist and potentially intensify through August to September 2026, and haze risk elevated through to October, this is an extended high-risk period — one that calls for sustained vigilance and proactive planning to ensure a safe and positive experience for all participants.

8. Programme providers are reminded of their obligations under the Workplace Safety and Health (WSH) Act to maintain a safe working environment for all staff and contractors. This includes ensuring that adequate measures are in place to protect their health and well-being, especially during this high-risk period.

9. For queries, please email the OAE Council at OAE_Council@mccy.gov.sg.

Annex A – Resources

Agency / Body	Resources	Link
National Environment Agency (NEA)	Air Quality • 24-hr PSI reading • 1-hr PM_{2.5} reading • Regional hotspots • Health Advisory	Haze Microsite
Metrological Service Singapore (MSS)	Heat Stress Map and Heat Stress Advisory	MSS Heat Stress Advisory
	Learn about Heat Stress	Learn about Heat Stress
Ministry of Education (MOE)	Haze management measures for schools	Haze Management MOE
Sport Singapore (SportSG)	Haze management measures for sport	Haze Management SportSG
	Heat stress management measures for sport	Heat Stress Management SportSG
Workplace Safety and Health Council	Preparing for Adverse Weather (Strong winds, heavy rainfall, flooding, lightning strikes, heat stress and haze)	WSH Guidelines on Adverse Weather
Outdoor Adventure Education (OAE) Council	Guideline and Advisories • Seasonal Heat Stress Management • Managing Effects of Adverse Weather • Emergency Action Plan	Resources from OAE Council

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