

## POSITION STATEMENT

# AIR QUALITY

Alberta and Northwest Territories aquatic facilities may experience poor air quality related to wildfire smoke.<sup>4</sup> Owners/Owner's Agents should monitor the Air Quality Health Index (AQHI) and Special Air Quality Statements to determine whether to restrict or cancel aquatic activities.

### Outdoor Aquatic Facilities:

- When the Air Quality Health Index is High Risk (7-10) consider re-scheduling strenuous activities (swim club, swim lessons, aqua-fit etc.) or closing outdoor facilities.
- When the Air Quality Health Index is Very High Risk 10+ it is recommended that outdoor facilities close.
- In areas that don't have an AQHI and/or internet access, or as an additional tool, develop a method to identify smoky conditions and changes in visibility before the wildfire season. Designate a specific landmark at various distances that can be used to estimate smoke concentrations.<sup>5</sup>

### Indoor Aquatic Facilities:

- When the Air Quality Health Index is High Risk (7-10), and Very High (10+):
  - All doors and windows should be kept closed.
    - For facilities with multiple automatic sliding doors, consider directing all traffic through a single door if possible, to reduce smoke entering the building.
  - During prolonged smoky periods, monitor air quality inside the building and consider closing the facility if visibility is affected and/or if staff/customers are experiencing respiratory concerns as a result of the accumulating smoke.
  - Owners/Owner's Agents should ensure that the heating, ventilation, and air conditioning (HVAC) systems are inspected by a qualified technician and that the filters are not dirty, damaged, dislodged, or leaking around the edges. Installation of the highest efficiency filters that do not exceed the static pressure limits of the HVAC systems should be considered. Pressure gauges should be installed across the filter to indicate when the filter needs replacing. HVAC systems should be operated continuously while buildings are occupied in order to provide the minimum quantity of outdoor air for ventilation, as required by the standards or building codes to which the building was designed.<sup>7</sup>

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#### Staff Considerations:

- Employers should educate staff on the importance of drinking water, taking regular breaks and being aware of the signs and symptoms of smoke inhalation.<sup>8</sup>
- When the Air Quality Health Index is High Risk (7-10) re-schedule any non-necessary outdoor work.
- In addition to assessing and if necessary, modifying the function of the HVAC system, employers are encouraged to take other reasonable steps to reduce employee exposure to smoke, including:
  - Alternate work assignments or relocation and telecommuting.
  - In buildings that rely on open windows, doors and vents for outdoor air, or those lacking proper filtration for their ventilation systems, consider relocating employees to safer locations.
  - Employees with asthma, other respiratory diseases, or cardiovascular conditions, should be advised to consult their physician for appropriate measures to minimize health risks.
- NIOSH-certified disposable respirators (N95 or P100), may provide additional protection to some employees against environmental smoke if they are sized and used properly. One-strap paper masks, surgical masks, or other face coverings are likely to provide far less or no protection.<sup>7</sup>

#### BACKGROUND:

Wildfire smoke is a common, seasonal health hazard in Alberta and the Northwest Territories during the spring, summer and autumn months. The hazardous ingredients of smoke include particulate matter, carbon monoxide, and chemicals such as, aldehydes, polycyclic aromatic hydrocarbons and benzene.<sup>8</sup> Windborne wildfire smoke can be a hazard for people who work at or visit aquatic facilities many miles from evacuation zones.<sup>7</sup>

Wildfires in Canada are expected to increase in size, severity and duration as a result of the changing climate. The Northwest Territories (NWT) typically experiences 245 wildfires per year on average affecting some 570,000 hectares each year. Wildfire smoke is increasingly recognized as an important health hazard.<sup>5</sup>

The Society has been approached by Affiliates, members and public with questions about air quality and when to cancel aquatic activities or close aquatic facilities. Owners/Owner's Agents should monitor the Air Quality Health Index (AQHI) and Special Air Quality Statements to determine when to cancel activities or close facilities. In addition, Owners/Owner's Agents should establish an Air Quality Response Plan which includes preventative measures and safety protocols.

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## **RATIONALE:**

Fine particles in wildfire smoke can penetrate deep into the lungs and lead to serious health effects. Wildfire smoke can irritate your eyes, nose, throat and lungs. It can make you wheeze and make it hard to breathe. If you have asthma or another lung condition, diabetes, heart conditions, or other medical conditions inhaling wildfire smoke can be especially harmful.

Who is at risk?:

1. Children, pregnant women and the elderly
2. Anyone with diabetes, lung or heart conditions
3. Anyone involved in strenuous outdoor work or sports
4. During heavy smoke conditions, everyone is at risk<sup>2</sup>

The decision to close or curtail business activities and public events will depend upon predicted smoke levels and other local conditions. In many areas it will not be practical to close businesses, although partial closures may be beneficial.

Closures and cancellations can target specific groups (e.g., the sensitive populations described earlier) or specific, high-risk activities, such as outdoor sporting events and practices. Curtailing outside activities can reduce exposures, as can encouraging people to stay inside and restrict physical activity.<sup>7</sup>

The Air Quality Health Index should be used to determine when to restrict or cancel activities.<sup>4</sup>

## **DEFINITIONS:**

**Air Quality Health Index** - The Air Quality Health Index (AQHI) is a tool that relates the air quality outside to your health, using a scale from 1 to 10. The lower the number, the lower the risk. It is used to report information about the most common ambient air pollutants, including particulate matter (PM<sub>2.5</sub> or PM<sub>10</sub>) and ozone.

**Smoke** - Smoke is a complex mixture of carbon dioxide, water vapor, carbon monoxide, particulate matter, hydrocarbons and other organic chemicals, nitrogen oxides, and trace minerals.

**Particle Matter (PM)** – Particulate matter is the principal pollutant of concern from wildfire smoke for the relatively short-term exposures (hours to weeks) often experienced by the public. Particulate matter is a generic term for particles suspended in the air, typically as a mixture of both solid particles and liquid droplets.<sup>7</sup>

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