

Environmental Noise

Policy Position Statement

- Key messages:** Environmental noise with particular qualities is a public health issue that requires serious attention to limit its adverse effects as urbanisation increases.
- Key policy positions:**
1. Environmental noise should be regarded as a public health issue.
 2. Clear standards are required for the prevention, assessment and management of noise.
 3. Noise assessment and mitigation measures should be included in State and Territory government planning and development frameworks.
 4. Policies and strategies to promote health by reducing adverse consequences from noise pollution should be developed and implemented.
 5. Community awareness raising and commitment to implementing the necessary policy, structural and behavioural changes for addressing adverse environmental noise are required.
- Audience:** Federal, State and Territory and local Governments, policymakers and program managers, PHAA members, media.
- Responsibility:** PHAA Ecology and Environment Special Interest Group
- Contacts:** Dr Peter Tait and Dr Lea Merone – Co-convenors, EESIG
- Date adopted:** 29 October 2020

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PHAA affirms the following principles:

1. Environmental noise is a public health issue, and is increasingly being recognised as such.¹⁻³
2. Action to ensure a safe and healthy environment is a critical public health priority.
3. When society-wide change is necessary for the common good, government's role is to lead, inform, regulate, monitor and enforce, and to motivate behaviour change by individuals and corporations.
4. Producers of pollution, including noise pollution, should incur the costs of prevention or remediation.

PHAA notes the following evidence:

5. Valid and reliable assessment of noise is technically complex, and development of noise mitigation strategies and noise management plans requires specialist expertise.
6. Noise pollution can arise from noise generators operating under different government jurisdictions with different protections, exemptions and appeal rights from applicable government regulations. This 'framework' seemingly creates flexible loopholes for noise generating activities which can give rise to health impacts on people.
7. Government planning and development frameworks must consider prevention of noise generation to noise sensitive receptors in the first instance; and provide robust protective provisions to ensure mitigation at the source where prevention cannot be incorporated.
8. Sound is created when a vibrating source causes energy to travel through the air as pressure waves. The waves may be reflected or scattered by objects so that the sound reaching the ear may be different from the sound originally generated. The sound pressure is measured in decibels (dB).
9. Common noise sources vary in sound level, for instance, normal conversation (60dB), lawnmower (90dB), chainsaw (100dB), rock drilling (120dB), and get engine at 30 metres (140dB).⁴
10. Sound can be characterised by qualities including frequency (pitch). Frequency is measured in hertz (Hz) which gives the number of cycles that occur per second.
11. The adverse effects of noise arise from intensity, its loudness measured in decibels, and qualities such as frequency, tonality, impulsivity and modulation (defined terms in legislation). Duration, repetition and time of day are also important determinants as is the interplay of these variables in the experience of noise.
12. People have varying levels of tolerance to noise. In some situations, noise may not be particularly loud, but may be distracting. Moreover, the repetitive nature of a particular noise and/or the inability of an individual to control it can cause annoyance. Examples include dogs barking and bass amplification of recreational music.

13. Vulnerable groups, such as children, older persons, people with mental health issues, may be affected by noise in different ways compared with other members of the population.²
14. Environmental noise pollution relates to ambient sound beyond comfort levels. Numerous sources including traffic, construction, aviation, industrial as well as some recreational activities exist.^{5,6}
15. Deleterious effects of noise can include hearing loss,⁷ sensory effects such as pain, annoyance⁶ and sleep disturbance.^{8,9}
16. Environmental noise can lead to environmental sleep disorder which is due to an environmental factor that causes either insomnia or daytime fatigue and drowsiness. Other effects include impairment of concentration, attention and cognitive performance, depression and irritability.¹⁰
17. The relationship between sleep and health is generally well accepted. Insufficient sleep can affect endocrine and metabolic function¹¹ or trigger inflammation, which may contribute to cardiovascular events. C-Reactive Protein (an inflammatory marker) levels have been found to linearly increase with sleep loss.¹²
18. Long-term environmental noise exposure can affect stress levels,¹³ and may increase the risk of hypertension (aircraft and road traffic noise) and elevated risk of heart attacks (road traffic noise).^{14, 15}
19. The World Health Organization (WHO) published the Night Noise Guidelines for Europe. The Guidelines present evidence of the health effects of night time noise and recommends threshold values to protect health. An annual average night exposure not exceeding 40 dB outdoors have been recommended.¹⁰
20. In Australia, each state and territory has a legislative framework for managing noise. Generally they address both environmental and occupational noise. In addition, local government can adopt local laws addressing particular noise sources and types.
21. Implementing this policy would contribute towards the achievement of [UN Sustainable Development Goals 3 – Good Health and Wellbeing](#).

PHAA seeks the following actions:

1. Competent authorities including each level of government and relevant experts should work together to clearly define parameters for noise level, exposure assessment, and measures for assessing the health effects of noise.
2. Competent authorities should draw up “Strategic noise maps” for existing major transport routes and other developments, using harmonised noise indicators L_{den} (day-evening-night equivalent level) and L_{night} (night equivalent level) as recommended in the EU policy.⁵
3. Proposed developments including upgrades to or expansion of existing infrastructure such as roads, rail lines, airport, mining, some commercial enterprise, and industry should be required to undertake a strategic noise impact assessment on existing properties and occupants before the commencement of the development, and ensure noise minimisation design and engineering is included in development proposals.
4. Local noise issues should be identified through consultation with the public and local organisations. A policy to maintain acceptable amenity in terms of environmental noise should be developed and

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implemented at a local government level. Strategies to reduce unacceptable noise should be developed in consultation with residents and implemented at a local level.

5. A burden of disease relevant to environmental noise pollution should be established within constraints of current scientific knowledge.
6. A public health strategy should be investigated to reduce the number of people adversely affected by environmental noise.
7. Innovative strategies for noise reduction in existing buildings and in development of new building materials should be explored.

PHAA resolves to:

8. Advocate for development and implementation by governments of policies and strategies to both promote health and reduce adverse human health consequences from environmental noise pollution.
9. Advocate for measures designed to raise community awareness of and commitment to implementing the necessary policy, structural, political and behavioural changes for addressing adverse environmental noise.

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