



Taronga Zoo Concert Events

The Taronga Zoo Noise Management Plan (NMP) Protocol applies to all concerts and other outdoor events with sound amplification equipment held at Taronga Zoo, in particular the larger scale events held on the concert lawn. This document summarises Noise Management Plan procedures for staff and promoters to minimise disturbance of residents and other noise sensitive receivers from events with sound amplification held at Taronga Zoo.

Event Timing

Amplified *event noise* shall be within the hours of 11:00 am - 10:00 pm.

Amplified noise shall be less than 5 hours in duration for an event.

Stage Arrangement

The stage and sound system layout should be similar to those of previous years unless a detailed assessment of noise breakout to the surrounding area is undertaken. The system should as far as practicable, be oriented toward the restaurant, with array speakers hanging with a downward tilt to cover the audience and reduce throw into the neighbourhood to the north, and any sub-woofer speakers located at stage level.

Operational Levels

Noise levels measured at the Front of House mixing desk position, with a direct line of sight to the stage should not exceed the following noise levels:

- $L_{Aeq,5-minute}$ 92 dB(A)
- L_{Amax} 100 dB(A)
- L_{Cmax} 112 dB(C)

Larger Scale Events

For identified larger scale events, with crowds greater than 5,000 people, or with a performer identified as desiring front of house operating levels greater than L_{Aeq} of 92 dB(A), L_{Amax} 102 dB(A), L_{Cmax} 115 dB(C), an accredited acoustical consultant will be present to perform monitoring throughout the event.

The *accredited acoustical consultant* would undertake noise measurements throughout the evening, providing technical feedback to the mixing desk operator in the case of exceedances (or potential exceedances), and aid in optimisation of the system to achieve compliance externally while maintaining best possible levels internally.

Designation of Responsibility

For each concert event, a Taronga Zoo staff member will be allocated as 'monitor' to undertake noise monitoring of event noise levels at the front of house, and nearest sensitive off-site positions. It is recommended that at least one (preferably the first in a series) concert per year is monitored and reported by an accredited acoustical consultant.

The monitor shall have direct contact with a designated contact at the front of house, or equivalent mixing desk location, with access to the main volume, or direct contact with someone who does.





At all times throughout the event, an event stage manager shall be on-site and in direct contact with the front of house sound engineer in case the noise level is required to be reduced. Event stage managers shall be authorised to override mixing desks if sound exceeds the noise limits and trigger levels (including removal of power if the music act's own sound engineer refuses to comply with direction from stage management).

The event stage manager if directed by an authorised officer, the manager on-site, the accredited acoustical consultant or the NSW Police Force, must have the authority to order the reduction of noise level, and shall comply with any such directions.

Criteria and Compliance Monitoring Checks

During amplified concert event noise, including sound checks and rehearsals, noise measurements at any sensitive receptor location must not exceed the following noise levels:

- L_{Amax} 65 dB(A)
- L_{Cmax} 85 dB(C)

Attended noise monitoring will be undertaken at sensitive receptor locations in the following manner:

- where no complaints have been received noise monitoring will be undertaken at each of the following sensitive receptor locations:
 - South West Corner of Bradleys Head Road and Whiting Beach Road;
 - South East Corner of Bradleys Head Road and Silex Road;
 - South East Corner of Burrawong Avenue and Kardinia Road.
- where complaints are received attended noise monitoring will be undertaken at a location representative of the complainant's premises as detailed in the section below (Responding to Noise Complaints).

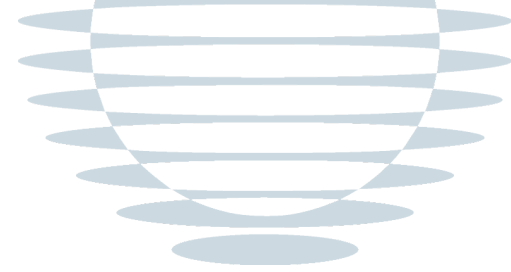
For all concert events held at Taronga Zoo, involving amplification, an allocated staff member will, where possible, perform noise monitoring during:

- sound check,
- commencement of the concert, and
- during the anticipated loudest period of the performance (typically the headline act, during a keynote song or finale).

Records shall be kept detailing the measured noise levels, monitoring location, times, subjective observations, and prevailing meteorology.

Trigger Levels

At any time where the noise measurements are within 3 dB(A) of the noise goals, or the levels established at the mixing desk during sound check (or varied throughout the event due to variations in meteorological



conditions); the event stage manager is to acknowledge the noise levels are approaching the limits, and implement adequate strategies to reduce the further increase in noise level such that the noise limits do not exceeded at the sensitive receptors.

Community Notification

Prior to the commencement of any series of events, the community shall be notified via:

- a letterbox drop (hand delivered information leaflets) to all local residents and businesses directly affected by the traffic management arrangements advising the details of the events. An outline of the hours of the events, traffic management arrangements and the contact details for the complaints hotline are to be provided to these parties; and
- provision of event details including timing, duration and complaint management procedures to the Police, Local Council and EPA State Pollution Hotline such that any complaints received by them can be forwarded to the event manager in a timely manner.

Complaint Handling Procedure

A member of event staff shall be available throughout the event and responsible for managing and recording all calls and emails received. It is important that the event staff member responsible for managing complaints is providing sufficient resources to effectively manage complaints including:

- access to noise monitoring personnel; and
- access to site security and Police representatives responsible for event security.

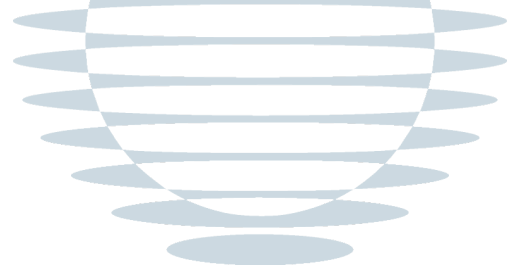
Responding to Noise Complaints

Where a complainant believes that noise from the event is adversely impacting their acoustic amenity, event personnel will contact the monitoring personnel and inform them of the complaint. Following receipt of the complaint, the allocated monitoring personnel will (as soon as practicable):

- 1 Undertake attended monitoring of noise levels at the boundary of the complainant's property;
- 2 If the noise is found to be exceeding the trigger levels, the allocated monitor will contact the event stage manager(s) and request that noise levels be reduced. In instances where there are a number of complaints in the same street or general location logged, the allocated monitor will monitor the noise at a location deemed to be representative of those affected residents;
- 3 Monitoring will continue at the complainant location until compliance with the event noise limits has been confirmed;
- 4 Details of the measured noise levels and action taken will be provided to the staff member responsible for the complaints hotline.

Details of the complaint and response taken will be recorded and reviewed in accordance with Section 8 of the NMP.





Ecological Receptors

No specific noise goals are applicable to the animals within the zoological park.

Any changes to animal behaviour observed as a result of the event noise should be recorded, to ensure the elevated noise at irregular times, specifically the very high, and very low-frequency content is not adversely disrupting their normal behaviour.

GLOSSARY OF ACOUSTIC TERMINOLOGY

Accredited Acoustical Consultant means an acoustical consultant who is a member of one or more of the following organisations: The Association of Australian Acoustical Consultants; The Australian Acoustical Society; or the Institution of Engineers Australia.

dB(A) is a measure of the overall noise level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.

dB(C) is a measure of the overall noise level of sound across the audible spectrum with a frequency weighting (i.e. 'C' weighting) that places an increased focus on low frequency (bass) noise.

Ecological Sensitive Receptors means the animals within Taronga Zoo.

Event means an outdoor performance whose primary purpose is entertainment involving continuous amplified musical performance taking place within a single 24 hour period.

Event Noise means noise from amplified entertainment measured as one of L_{Aeq} , L_{Amax} , or L_{Cmax} .

Event Stage Manager means the person at the sound mixing console (or sound desk), who is in control of the volume of noise emanating from the speakers installed at an event;

L_{Aeq} is the equivalent steady sound level in dB(A) containing the same acoustic energy as the actual fluctuating sound level over the given period.

L_{Amax} means A - weighted maximum RMS sound pressure level measured over a one (1) second interval with the meter set to Fast response time. During noise measurements, this is the absolute highest (maximum) noise level for a given time period.

L_{Cmax} means C - weighted maximum RMS sound pressure level measured over a one (1) second interval with the meter set to Fast response time. During noise measurements, this is the absolute highest (maximum) noise level for a given time period. The 'C' frequency weighting scale is relatively flat or contains little adjustment to the linear or Z weighted, dB(Z) noise level.

Sensitive Receiver means places such as residences, schools, childcare centres, hospitals and churches.

Sound Check means a test of the sound amplification equipment for an outdoor concert .

