



## JAMAICA ENVIRONMENT TRUST SUBMISSION ON THE REVISION OF THE NOISE ABATEMENT ACT

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### INTRODUCTION

From an unreferenced, undated and unattributed document on the website of the National Environment and Planning Agency (NEPA): “*Reliable estimates of the direct costs due to ill-health from noise pollution put this figure at as much as 2% of the gross domestic product of a country.*”

Noise pollution has significant impacts on the health and well-being of people and has also been shown to affect animals, specifically those in zoos<sup>1</sup> and marine mammals affected by rising levels of underwater sound<sup>2</sup>.

Noise pollution is generally divided into two categories:

- **Occupational noise**, which affects the health and safety of workers in the course of their jobs and is often related to the type of machinery they operate
- **Environmental noise**, which affects the health and general well-being of the general population and can occur anywhere

**This submission deals only with environmental noise.**

The main sources of environmental noise are:

- Traffic, especially unmuffled vehicles, motorcycles, trucks, large vehicles using engine braking, car horns
- Mobile sound systems, including those used for public service announcements, advertising, and personal entertainment (boom box cars)
- Stationary sound systems, associated with entertainment events, bars, restaurants, night clubs or other types of venue
- Live music stage shows
- Churches
- Political meetings
- Industrial and commercial activities, such as building and road construction, vehicle repairs, car wash operations and others
- Gardening activities using lawnmowers, leaf blowers, hedge trimmers, chainsaws and weed wackers
- Household equipment, such as air conditioners, water pumps and standby generators
- Barking dogs
- Airplanes, helicopters and motorized boats, including jet skis

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<sup>1</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0168159114001051>

<sup>2</sup> [http://dels.nas.edu/resources/static-assets/materials-based-on-reports/reports-in-brief/ocean\\_noise\\_final.pdf](http://dels.nas.edu/resources/static-assets/materials-based-on-reports/reports-in-brief/ocean_noise_final.pdf)

The NEPA study says that, in general, Jamaicans are "...largely unaware of the dangers of noise pollution and often unmindful of the annoyance that loud noises can cause, particularly in residential and commercial areas." The Jamaica Environment Trust (JET) agrees with this assessment. There are frequent reports of repeated noise nuisance caused by various enterprises which go unregulated for many years, if not decades. An example is the impact of events at the Royal Botanic Gardens at Hope in Kingston, which has caused considerable inconvenience to the residents of Hope Pastures for several years, including unknown impacts to the animals at the nearby Hope Zoo<sup>3</sup>.

## 1. ENVIRONMENTAL AND PUBLIC HEALTH IMPACTS OF NOISE

In general, while there are studies which have shown some evidence of the effects noted below, there is not enough known about the thresholds at which adverse effects occur. The effects of noise pollution are:

- Loss of hearing from frequent listening to loud music (strong evidence)
- Sleep disturbance, which causes a range of problems (strong evidence)
- Cognitive impairment in children (limited number of studies)
- Annoyance, leading to social conflict, stress, even depression (few studies)
- Cardiovascular diseases (ischemic heart disease, hypertension, relatively new research)
- Diabetes and/or endocrine disruption (few studies)
- Psychological/mental health effects (few studies)<sup>4</sup>

In order to assess the health risk of exposure to environmental noise, three factors have to be known:

- Exposure frequency (how often?)
- Exposure duration (how long?)
- Exposure intensity (how much?)

To the best of JET's knowledge, there are no data on these factors in Jamaica, although there are data available from other countries.

Regarding noise pollution in the US, the Centres for Disease Control (CDC) concluded that:

- Exposure was substantial, widespread and cumulative across sources and lifetime
- Exposure assessment was challenging
- Health impacts extended beyond noise-induced hearing impacts
- Exposure limits needed to be established and interventions were needed to improve health

## 2. THE SITUATION IN JAMAICA

The Noise Abatement Act was passed in 1997, in an effort to reduce what is often called "night noise" but has for the most part been unsuccessful. The NEPA study goes into some detail regarding the approach contemplated by the Act, which is to restrict sound to a certain decibel (dB) level at a

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<sup>3</sup> <http://jamaica-gleaner.com/article/news/20190516/williams-promises-relieve-hope-pastures-residents>

<sup>4</sup> Presentation from the Michigan School of Public Health to the Centres for Disease Control in the USA  
[https://www.cdc.gov/nceh/hearing\\_loss/docs/CDCPresentationNeitzel-508.pdf](https://www.cdc.gov/nceh/hearing_loss/docs/CDCPresentationNeitzel-508.pdf)

specified distance (100m) from the noise source. Given that the decibel is a logarithmic scale, NEPA explains:

*“If noise is emanating from a small source such as a radio or loudspeaker the sound intensity will drop by a factor of four when the distance from the source is doubled. (This follows from a simple application of the principle of "energy conservation") Thus, from the above definition, a doubling of the distance from the source will result in a new sound level which is  $10\log(4)$  or approximately six (6) decibels lower than the previously measured sound level.”*

*“Now, for the sound from a loudspeaker to be easily audible at the edge of a crowd it would need to be perhaps 65 dB at a distance of 25 m from the speaker. So at 100 m the sound level would be 53 dB. Here lies the problem. This 53 dB is approximately the sound level of a radio or television in an average living room and at normal listening distance. So, in order for a speaker to be heard by a reasonably quiet crowd of average size, the law must be broken...there is also no doubt that, at this volume, the speaker would disturb a resident whose living room is 100 m from the source of the noise and would be easily audible even at a distance of 200 m.”*

NEPA concludes:

*“The above analysis reveals a difficulty that has our policemen in trouble from both sides and which may never be solved in Jamaica by legislating maximum noise levels. The problem is simply that Jamaica is an open-air and open-window society. The only way for any meeting or dance not to emit sounds loud enough to annoy those in nearby houses is for it to be held in an enclosed area...another alternative is simply to ban such noisy functions from anywhere near to a residential area”.*

Apart from this difficulty, other provisions of the Noise Abatement Act, such as ending times, are simply not enforced. Citizens frequently report repeated calls to the police without effect, or sound systems being started well after music events should have ended.

There is also insufficient attention paid to cumulative impacts from multiple sources of noise. Each individual source may truthfully state that they have only a limited number of events a year, but there is no overall planning framework to limit events in any given area. As an example, a family living within earshot of the Ranny Williams Entertainment Centre on Hope Road, which has frequent events with loud music, will also very likely be disturbed by Cru, 80LMR, Barbican Square, Barbican Beach, Bob Marley Museum, Twelve Tribes of Israel, and One Hundred – even events at Jamaica House or Kings House, on occasion. This gives rise to a situation where a householder cannot be sure any night will be disturbance free. Add all the other sources of noise listed earlier in this paper, and you have a country where peace and quiet is virtually impossible to find on a consistent basis.

With regard to tourist and coastal areas, there is insufficient understanding of how far sound travels over water. JET is aware there are significant conflicts in Negril, for instance, where local entrepreneurs want to hold music events as income-generating activities and these are supported by many residents and some visitors, but other visitors who have travelled to Jamaica for rest and relaxation find their vacations ruined by loud noise and demand compensation from hotels and villas, as well as post negative reviews on social media. **JET recommends that the committee ask tourism interests to quantify the impacts of noise on the tourism sector before making any decision.**

### 3. CONCLUSION

**JET recommends that the committee should not relax the provisions of the Noise Abatement Act at this time, which will only make an already bad situation worse.** People have a right to quiet enjoyment of their homes and there are undeniable adverse impacts from constant noise from multiple sources.

The committee should consider the implementation of the following:

- A proper spatial planning framework to guide where, when and how frequently outdoor music events can take place, particularly in predominantly residential areas, supported by the provision of the necessary equipment for measuring sound levels, including bass frequencies
- Zoning of areas where different types of entertainment may occur, and the frequency of events and lock off times associated with each zone
- Enforcement of zoning regulations which prohibit commercial or industrial activities which are the source of noise pollution for residents
- Stringent enforcement of existing laws regarding lock off times, construction periods and other suitable activities – for example, construction work on Sundays or after 6.30pm. (Although planning and environmental permits currently restrict construction work to certain hours and types of activity on Saturdays, this is not enforced).
- State support for either remote or indoor entertainment venues, or both
- Silence zones surrounding specific places, like hospitals, schools and courts
- Prohibition of the import, sale or possession of equipment capable of generating more than X dB at Y metres
- Technical input on the difference between the way sound travels and should be measured, depending on the frequency. For example, in general, because higher frequency (treble and midrange) notes have a shorter wavelength they use MORE energy to travel farther. Bass frequencies on the other hand, have very long wavelengths, allowing them to use less energy to travel much farther and attenuate much more slowly. This is why from even a small distance away from the source the ‘sound’ of a sound system is predominantly bass.
- Control of motor vehicle noise via the inspection and fitness regulatory system
- Requirements for prior notice to residents of specific, permitted calendar events, such as carnival, Sunfest and others
- In depth study of the impacts of noise on the Jamaican population, including cumulative impacts.

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