

THE RIGHT TO QUIET SOCIETY
For Soundscape Awareness and Protection

SOUNDSCAPE NOISE LETTER: SPRING 2019

Charitable Registration BN: 11915 4680 RR 0001

Quiet Cheers for President Hans Schmid!

Please join the Right to Quiet Society in thanking our President Hans Schmid for his decades of work on our **NOISELetter** newsletter. Unfortunately, Mr. Schmid has stepped down as newsletter editor for personal reasons.

Thanks to him, our newsletter archives are a wealth of noise science and educational information. While the look of the newsletter will change a bit, it will always include the science, education, and action alert content members expect.

Article: Community Noise, Hearing Health, and Communication Limits

By Jan L. Mayes

Community noise soundscapes are a mix of soft to loud sounds at different times of day. For example, a soundscape might include voices, birds chirping, gas leaf blowers, vehicle traffic, or construction noise.

World Health Organization (WHO, 2018) internationally recommended *Environmental Noise Guidelines* prevent speech interference and protect everyone from noise-related mental, physical, and hearing health damage. This protects two basic human rights:

1. Human right to health
2. Human right to communication

Most people don't have loud non-work noise exposure every day. But even occasional indoor or outdoor noise adds up over time. This includes chronic, intermittent, and impact noise from wind turbines, aircraft, traffic, sirens, trains, transit, yard equipment, construction, restaurants, bars, cinemas, gyms, nightclubs, sports arenas, and more.

"If ears bled..." Hans Schmid

Community Noise Statistics

- People get 58% of unhealthy exposure from community noise (non-work)
- 70% of men and 65% of women have community exposure higher than recommended WHO (2018) limits

- Average noise exposures exceed community health limits around the world, e.g. soundscape noise is too loud. If ears bled, ears would be bleeding for 88% of people in Sweden, 70% in U.S., 84% in Spain, 85% in China.

Hearing safe listening limits are based on international public health guidelines meant to protect 100% of the general population from noise-related hearing health damage.

Hearing Safe Listening Limit (WHO, 2018)	Average Noise Level (equivalent continuous noise)
15 min	90 dB Leq
30 min	87 dB Leq
1 hour	84 dB Leq
2 hours	81 dB Leq
4 hours	78 dB Leq
8 hours	75 dB Leq
16 hours	72 dB Leq
Unlimited	<70 dB Leq

Noise Damage to Hearing Health

Noise damage includes hidden hearing loss, speech-noise-ratio loss, tinnitus (ringing or other ear noises), noise-induced hearing loss, and early age-related hearing loss.

Hidden hearing loss (cochlear synaptopathy) was discovered in 2009. It's called hidden hearing loss because there are no signs or symptoms. It can't be detected on current hearing tests. It is only identified after death during hearing system autopsy:

- snapped connections between inner ears (cochleas) and hearing nerves
- progressive fraying of hearing nerves for 6 or more months after noise ends

Speech noise ratio loss is when people with histories of noise exposure have problems communicating in background noise or difficult listening situations.

Tinnitus can be temporary or permanent after noise damage, with or without related hearing loss.

Noise-Induced Hearing Loss has different severity depending on the noise level and whether a person keeps having repeated unhealthy exposure over time.

- Temporary changes or muffled hearing that recovers within about 24 hours after exposure ends.
- Permanent noise-induced sensorineural hearing loss is from inner ear sensory damage plus hearing nerve damage

Preventable Early “Age-Related” Sensorineural Hearing Loss starts around age 20 to 55 years old from unprotected noise exposure. This loss is mainly hearing nerve related, so there is hearing system distortion and speech-to-noise ratio loss.

With no history of hazardous exposure, true age-related hearing loss starts around age 55 years and older. It’s part of the natural aging process, and is from metabolic and mechanical changes to inner ear sensory systems plus some hearing nerve changes.

“Even mild hearing loss can be a major disadvantage in a world of ever-faster information exchange. People who cannot hear spoken language well enough to process it quickly may find themselves cut off from others at work, at home, or in social situations.” Zahnert (2011, p. 433)

Communication Limits

WHO (2018) sets community noise limits to prevent speech interference. These limits help prevent communication breakdowns in noisy environments. People with quiet communication needs would greatly benefit if environmental noise met recommended limits, e.g. children, elderly, people with hearing loss (any cause), tinnitus, speech-noise-ratio loss, autism, history of head injury, PTSD, etc.

Speech interference noise limits also prevent risk of noise-related mental and physical health damage, e.g. delayed learning, anxiety, depression, heart disease, diabetes.

Conclusion

The goal of making environmental noise softer isn’t about silence. Soundscapes will still be mixes of healthy natural human and natural habitat or wilderness sounds.

WHO Environmental Noise Guidelines (2018, pages 105-111) recommend how experts at local, regional, and national levels should implement environmental noise control and prevention. Their target audience includes, “civil society, patients and other advocacy groups to raise awareness and encourage actions to protect the population, including vulnerable groups, from exposure to noise (p. 108).”

Healthy forward-thinking government policy and legislation must require mandatory noise abatement and control, action plans for existing noise, and thoughtful community planning, architecture, and quiet design to prevent future noise. It's time to protect our human right to communication and our human right to mental, physical, and hearing health.

Sources

This article was derived in part from Mayes, Jan L. (2019, Feb 18). Urban noise levels are high enough to damage auditory sensorineural health. *Sound and the Healthy City*, special issue of the *Cities and Health Journal*, Routledge. Copyright Taylor & Francis, [DOI 10.1080/23748834.2019.1577204](https://doi.org/10.1080/23748834.2019.1577204)

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WHO, 2018. Environmental noise guidelines for the European region. WHO Regional Office for Europe.

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Simon Fraser University: Noise in the City Panel Discussion

On February 28, 2019, the SFU Institute for Humanities held a Noise in the City educational event featuring scholars Barry Truax and Hugh Davies. Right to Quiet Society members Hans Schmidt and Karl Raab presented on **The Soundscape - too often neglected and poorly understood**.

Noise was defined as unwanted or unhealthy sound, with the top disturbing sources including wind turbines, aircraft, traffic, and railway noise. Key points included:

- health damage starting with adverse birth effects (low birthweight babies)
- importance of noise education and citizen activism
- consumer product noise level labelling
- quiet remote keyless entry and efforts of The Silence the Horns Project
- CANUE (The Canadian Environmental Health Research Consortium) project to map noise in Canada.

Link to YouTube video of talk: <https://www.youtube.com/watch?v=Vc0t6k07S-8&feature=youtu.be>

Citizen Science App Updates

hearWHO app for mobile devices was launched by the World Health Organization on World Hearing Day 2019. Use it to check your hearing and help WHO gather global citizen science data. <https://www.who.int/deafness/hearWHO/en/>

SoundPrint app has added new venues including stores, gyms, and movie theatres. Make sure to download the latest version. Help measure and add data so people can easily find quiet versus noisy locations. <https://www.soundprint.co/>

Event: Noise and Citizen Science April 20, 2019: If you're in the New York City area, join the [noise and citizen science](#) talk at Clarendon Library in Brooklyn. Presenters include RTQS member Jeanine Botta and [Hush City app](#) developer Antonella Radicchi. The talk will feature demonstrations of mobile phone apps that measure and describe sound in different settings. www.quiet.org/documents/INAD2019.pdf

Climate Change and Unhealthy Wind Turbine Noise

Experts recommend fighting climate change with clean energy including wind turbines. The World Health Organization has identified health risks from low frequency components of wind turbine noise that are more felt than heard. Current wind turbine recommended limits are <45 dB avg day/evening (WHO Environmental Noise Guidelines, 2018). Night noise risk is still being investigated. Night limits may end up the same or softer than day/evening limits. Clean energy policy decisions must consider noise-related health risks and abate or control noise to meet international public health guidelines. Roberts stated low frequency noise is common in communities, and more importance must be placed on preventing related health impacts (Proceedings of 20th International Congress on Acoustics, 2010). https://www.acoustics.asn.au/conference_proceedings/ICA2010/cdrom.../p987.pdf

Action Alert: Noisy Oil Port Planned for Fraser River Estuary Ecosystem

The Canadian government is proposing Roberts Bank Deltaport Terminal 2 as the new Trans Mountain Pipeline Oil Port. A manmade island oil terminal will involve dredge-and-fill, anchorage sites, spills, disposal at sea, noise, light, and air pollution. After development, a new oil port will double transportation congestion, air pollution, and noise with truck traffic estimated to increase from 4500 trips daily to 9,600.

Scientists report development of the site and increased shipping in the Fraser estuary and Salish Sea will destroy internationally significant wildlife ecosystems including home to millions of migrating salmon, migrating birds of the Pacific Flyway, and Southern Resident Killer whale population—now down to 75 whales—listed as endangered under Canada's Species at Risk Act.

Public hearings start May 14, 2019 in Delta, British Columbia although the deadline to register written submissions or to speak was March 22, 2019. Questions can be directed to the Project Manager [Tel: 1-866-582-1884](tel:1-866-582-1884). Outside of public hearings, to

give your opinion on the proposed Terminal 2 project, email info@againstportexpansion.org or check the website www.againstportexpansion.org.

Interesting Links

- Best of 2018: Articles on noise and acoustics. <https://soundproofist.com/2019/01/12/best-of-2018-articles-on-noise-and-acoustics/>
- The quietest places on earth to travel to. Will they be quiet for long? <https://www.telegraph.co.uk/travel/lists/the-quietest-places-on-earth/>
- City of Calgary (Alberta, Canada) is installing noise sensor network to help monitor and enforce noise ordinance issues. <https://efficientgov.com/blog/2019/03/01/calgarys-sensor-network-will-monitor-noise-ordinances-more/>
- Tesla's new car anti-theft mode using Bach's Toccata and Fugue <https://www.classicfm.com/music-news/latest-news/tesla-anti-theft-car-classical-music/>
- Article on leaf blower ban <https://www.theatlantic.com/magazine/archive/2019/04/james-fallows-leaf-blower-ban/583210/> (Editor's note: cars are not as quiet as suggested).

Upcoming 2019 Events

April 22 = Earth Day

April 24 = International Noise Awareness Day

May 1-31 = Speech & Hearing Month

July 18: World Listening Day

For the latest news and event info, visit the RTQS website www.quiet.org or **follow our twitter @RightToQuiet**.

Right To Quiet Society News Updates

Jan L. Mayes has volunteered as newsletter editor. Her background includes writing, audiology, noise damage risk, and adult education. She looks forward to sharing noise news, science, and educational info.

We welcome your suggestions and contributions at any time for articles or information that can be included in our news. Please contact education@quiet.org. For general questions, please contact info@quiet.org.

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