

# Micrometeorological and anthropogenic effects on acoustic background noise levels

*Wednesday, November 6, 2024 3:00 PM (10 minutes)*

Acoustic networks often record background noise from both natural and man-made sources. Most of the time, wind and anthropogenic noise are higher during the day. A permanent acoustic network at the Nevada National Security Site (NNSS) captured background noise from a variety of sources over several months. These stations were deployed on canyon bottoms, hillsides, and mesas, each of which have distinct topographically-driven micrometeorology. In addition, some were close to roads and buildings, but others were more remote. We examine how background noise on infrasound sensors varies across diverse topography and proximity to anthropogenic activity. We identify a pattern of activities across the site based on natural and anthropogenic acoustic signals. We found that timing and frequency content of noisy periods varied across topography and proximity to human activity – they did not always peak during the day. Understanding these acoustic “site effects” are important when selecting sensor deployment locations and assessing event detection thresholds.

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