

Abstract ASA Jacksonville Nov. 2015

Acoustical Impact of Wind Turbines on Soundscape

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It is well known that wind turbines have a negative impact on the landscape. But what is their impact on soundscape? Is this independent from the visual perception? Increasing research efforts are made to explain annoyance and complaints caused by wind turbines in detail, but still several questions are unanswered. The acoustical contribution of wind turbines depends on the technical design of the generator and of the blades. All of them produce low frequencies; some of them produce noise in the middle and higher frequencies with tones and modulations. It is clear that the A-weighted sound pressure level is not the appropriate indicator to predict resulting annoyance. The question is what must be considered to understand the perceived sound quality within the context of soundscape? Are psycho-acoustical parameters able to describe the sound character of wind turbines in a better way? To get an improved understanding of the complex interactions of the sound produced by wind turbines and the existing sounds of a given soundscape basic studies were performed and the results will be presented.

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