How much acoustic space do we leave to the birds?

Hans Slabbeekoor
Urbanization leads to homogenization of avian fauna

Impact of anthropogenic noise?
Highway noise, birdsong, and density

Rheindt: J. Orn. 2003

More abundant near road

Less species near road

Correlation with pitch: due to masking noise?

Less abundant near road

Song frequency (DF)
Industrial noise without confounding factors

Pairing success lower in noisy compressor sites (77% vs 92%)

Less inexperienced birds at noiseless wellpads (48% vs 30%)

Fig. 1. Study design for ovenbird capture in northern Alberta, Canada, in 2004 and 2005.

(Habib et al.: J. Appl. Ecol. 2006)
Ambient noise
Urban jungle

Great tit (Parus major)
Leiden - quiet territory

Time (seconds)

Frequency (kHz)

Ambient noise
Urban jungle
Leiden - noisy territory

Time (seconds)
Frequency (kHz)

Ambient noise
Urban jungle
Pearson’s $r = 0.377$, $n = 32$ & $p < 0.05$

(Slabbekoorn & Peet: Nature 2003)
Sampling across Europe

Ambient noise

Urban jungle
Ten cities and ten forest sites
Liesbos 01

Frequency (kHz)

Time (seconds)

Ambient noise
Urban jungle
London 18

Time (seconds)

Frequency (kHz)

Ambient noise
Urban jungle
City birds sing with higher minimum frequency

(Slabbekoorn & den Boer-Visser: Current Biology 2006)
Does traffic noise affect the division in urban survivors and loosers?

1. Great tits depend on song and are very successful in noisy urban areas

2. Correlation between song frequencies and ambient noise at two scales

3. Having a wide frequency range, a songtype repertoire, and post-dispersal learning makes great tits less vulnerable to noise pollution

Next: Do all urban survivors fit in with these abilities and are urban loosers lacking these features?
Does traffic noise affect the division in urban survivors and loosers?

Conclusions
And if so, what can we do?

Conservation applications
Thank you!

Herman Berkhoudt