

Urban woodlands and their importance for biodiversity and human well-being



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Urban woodland -definition

Urban woodland = *structurally equivalent to a natural forest stand where the field layer is not managed as in a park.*



Photo: Marcus Hedblom

Urban woodlands – cover and trend

- Average 20% cover in Swedish cities ¹
- Urban woodlands are small. < 50% smaller than 2 hectare ²
- Urban woodlands are rapidly decreasing in Sweden



Urban woodland 2014



The same area 2015

Photo: Marcus Hedblom

¹Hedblom and Söderström 2008. Landscape and Urban Planning

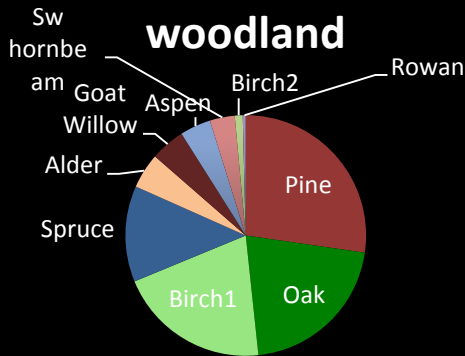
²Nielsen et al. 2017 Urban Ecosystems

Urban woodlands – biodiversity prerequisites

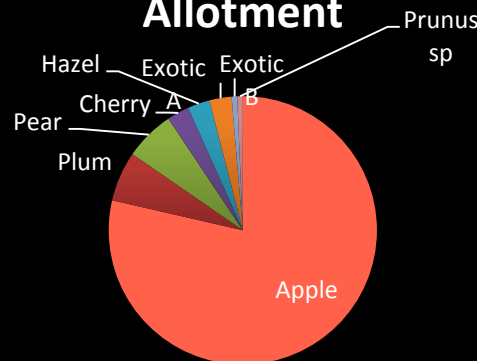
- Diversity of birds equally high in urban as in rural woodlands¹
- Higher amount dead wood in urban fringe than rural²
- Highest biodiversity in urban woodlands (tree cover) and songbirds (species) and lowest in the residential area³



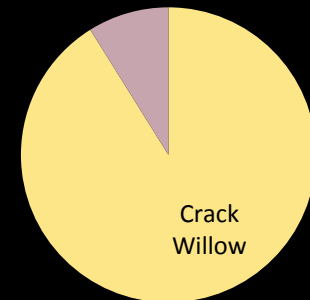
Suburban woodland



Allotment



Multifamily housing



¹Hedblom and Söderström 2010. Biogeography

²Hedblom and Söderström 2008. Landscape and Urban P

³Gunnarsson et al. 2017. Urban Ecosystems

Overview of 3 studies

- Study 1. Self evaluations. Questionnaire . N= 1347



- Study 2. Self evaluations. Visual and sound. N= 227



- Study 3. Psychophysiological . Visual, sound and smell. N= 154



STUDY 1

High naturalness = Woodlands

Low naturalness = Parks

Urban
woodland
12ha



Old park
9.8ha

Suburban
Woodland
38 ha



Multifamily
housing and
lawn area
8.5ha

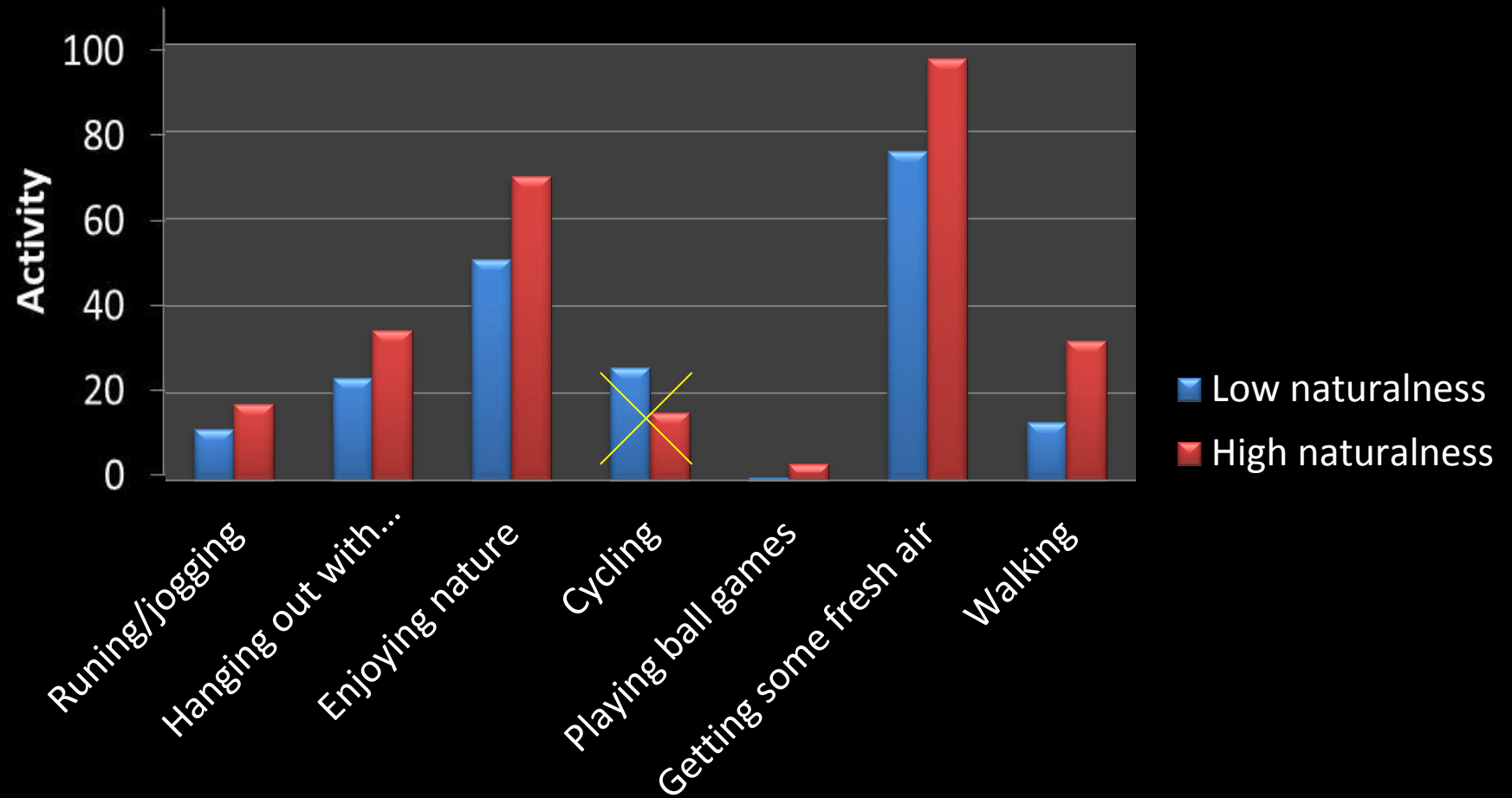
Park and
Woodland
6.4ha



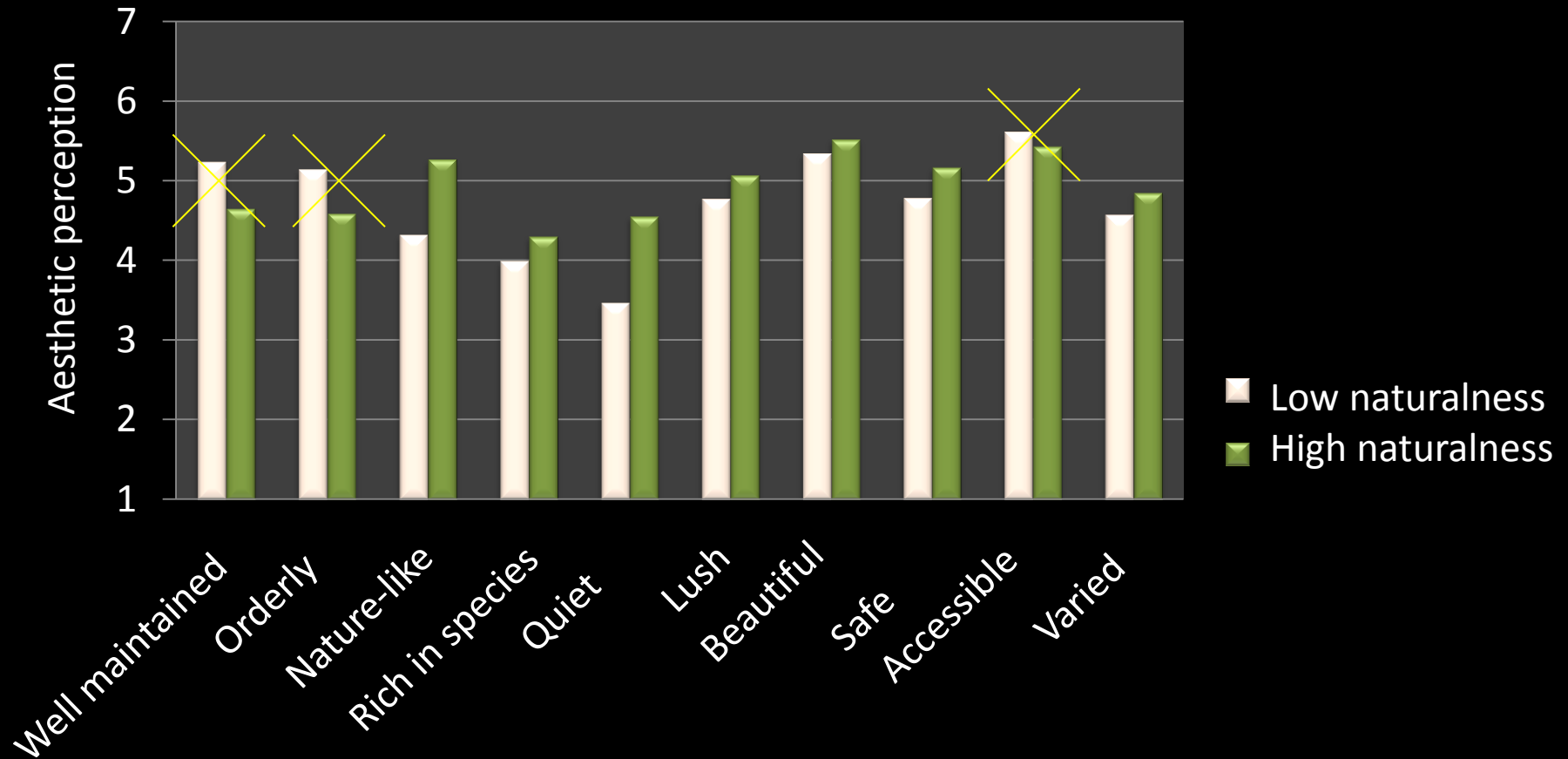
Photo. Erik Heyman

Allotment
1.9ha

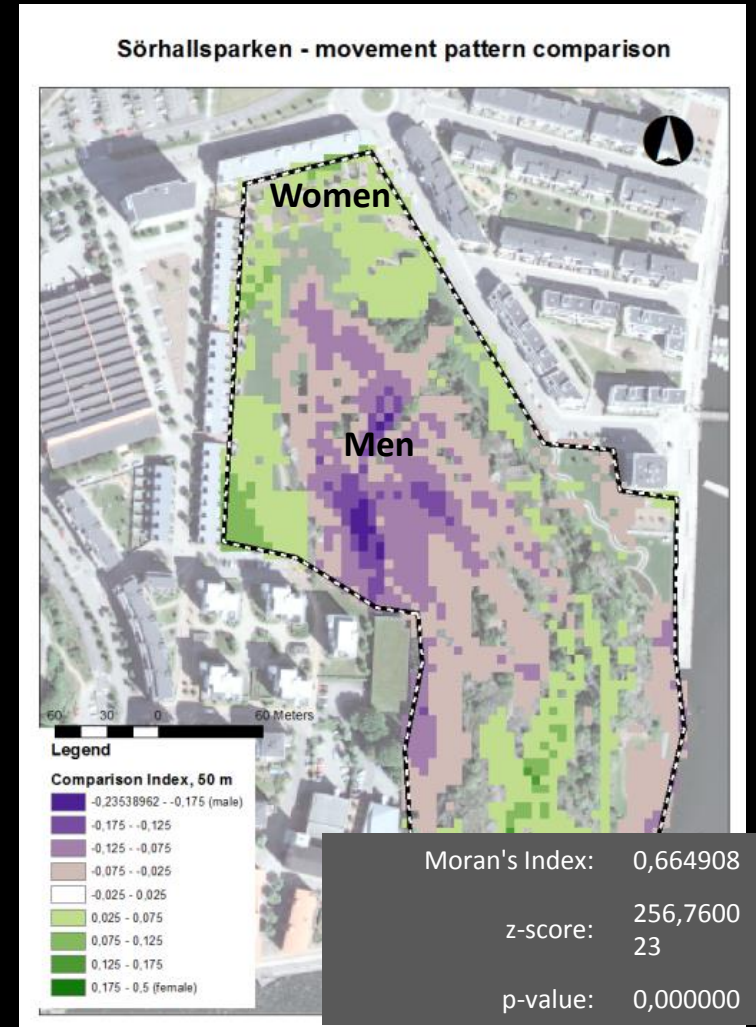
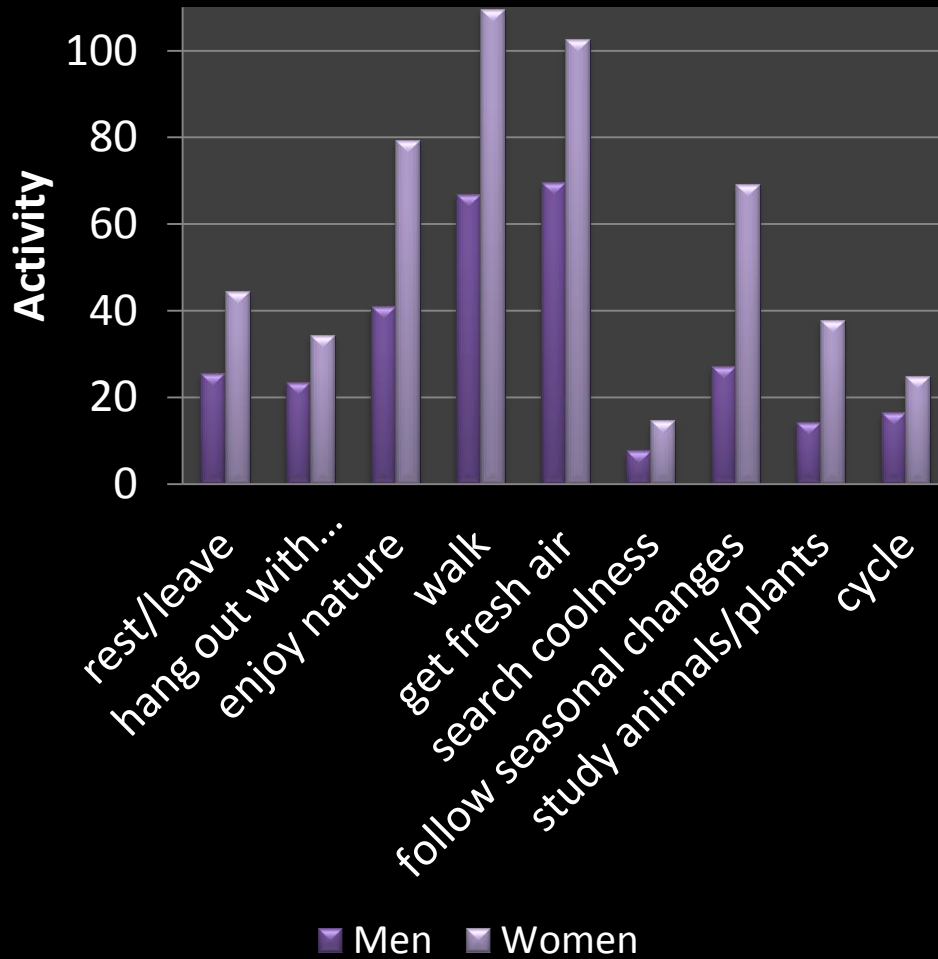
More activities in “urban woodlands” than in “parks”



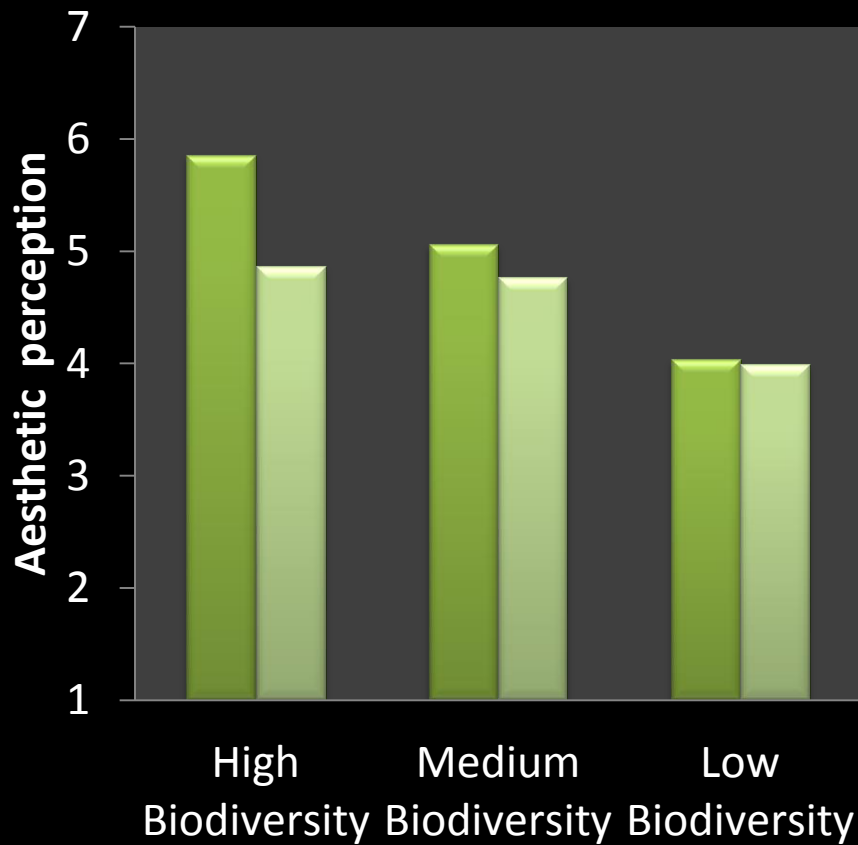
Higher aesthetical preferences for “urban woodlands” than “parks”



Gender (and age)



Environment –related attitude do influence perception.
“High Nature oriented persons” rate perception higher
than “Low Nature oriented persons”

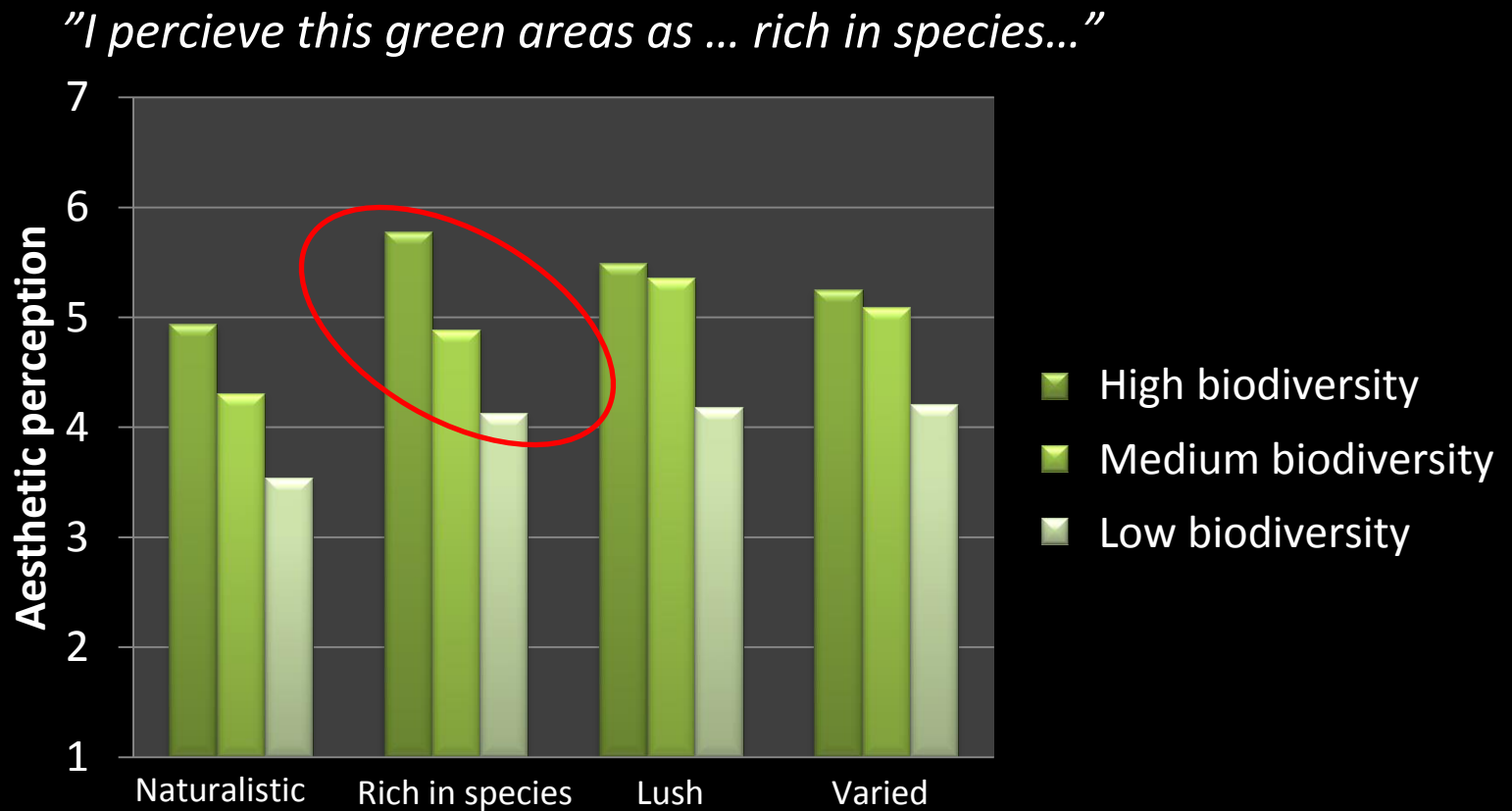


■ H-Nature person

■ L-Nature person



Areas “objectively” measured had higher “subjectively”
perceived aesthetical values



Study 2. Soundscape and biodiversity



Urban settings were ranked higher if respondents heard bird song - independent of species



The more species heard the higher positive perceptions

Indicating perception of biodiversity

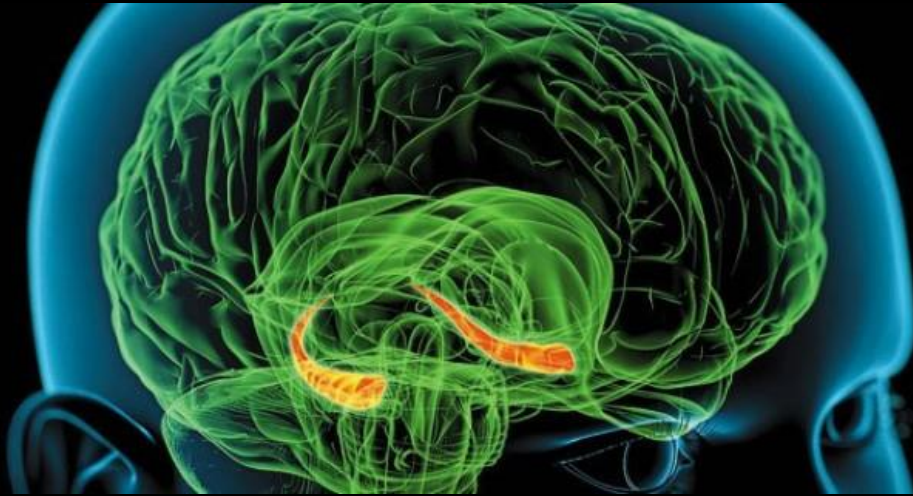
Urban woodland species



Hedblom et al. 2014. Urban Forest & Urban Greening
Hedblom et al. 2017. Springer Book chapter 15. Urban bird ecology
(Hedblom et al. 2017. Royal Society of Open science)

Why is higher aesthetical estimations linked to naturalness and biodiversity?

The mechanisms behind are rather unstudied



Study 3. Psychophysiological responses from Multisensory tests



Posted by **Extrakt**
782 Views

Photo: Elin Viksten

Sight = Virtual Reality (VR)

- City
- Park
- Forest

Sound = Bird songs

- City = no species
- Park = one species
- Forest = 9 species

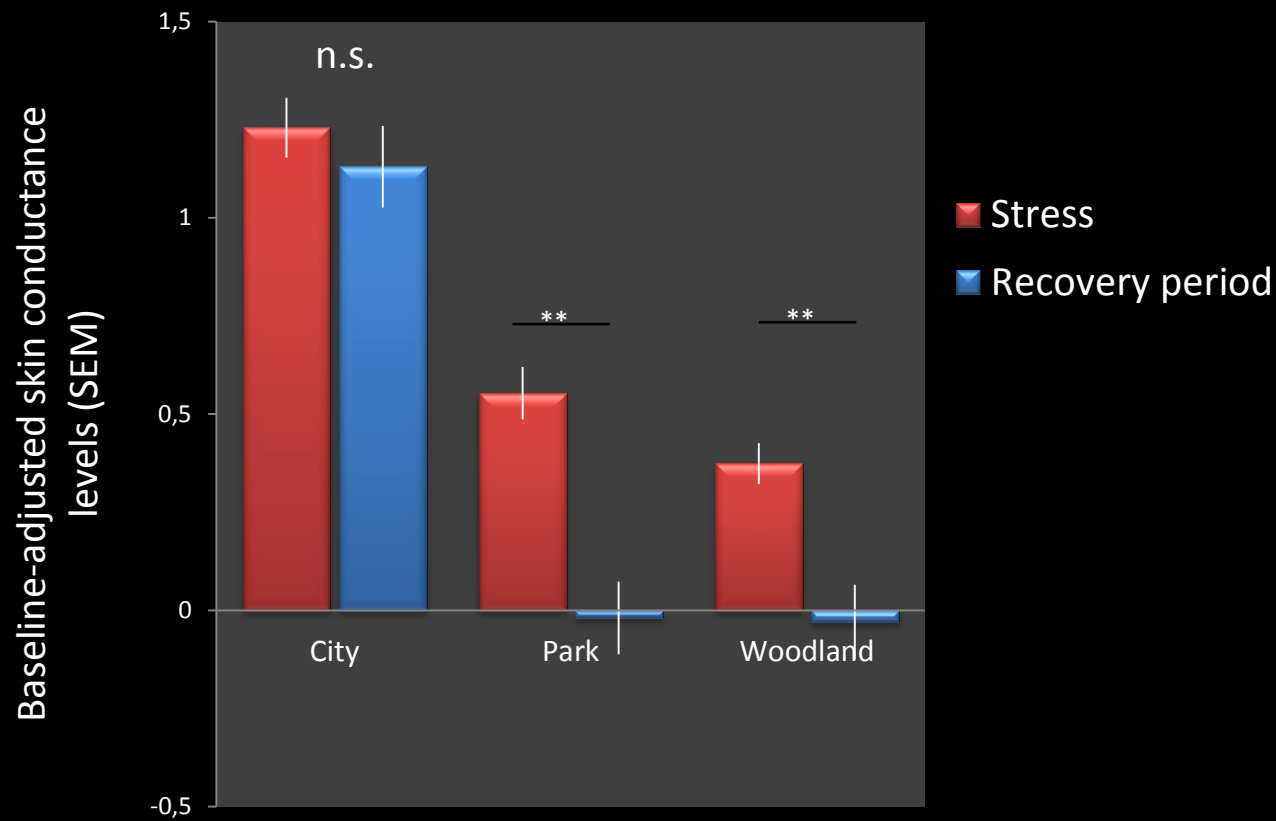


Smell = Different smells

- City = rubber, tar, diesel
- Park = grass
- Forest = spruce, mushroom, pine needle



Recovery does not occur in urban environments



Thank you



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