



SCIENCE AND
EDUCATION **FOR**
SUSTAINABLE
LIFE



Forest, wellbeing and effects

Ann Dolling
SLU

Effects of nature and forest

- Two hours a week in nature is associated with good health and wellbeing (White et al 2019)
- Forest bathing



Forest Bathing – Shinrin Yoku

- The medicine of simply being in the forest
- Developed in Japan during the 1980s
- Used as preventive health care and healing in Japan
- Scientific findings
 - Reduced blood pressure
 - Reduced stress
 - Improved mood
 - Increased ability to focus
 - Increased energy level
 - Improved sleep



Why is the forest good for us?

- Evolved in and adapted to a life in nature/forest
- However
 - Today more than 50 % of the worlds population lives in the cities
 - 70 % of the Finnish people lives in the cities
- Spontaneous attention in the forest and nature
 - Few demands
 - Right amount of stimuli
 - The senses/brain can rest on natural shapes, colors, smells, sounds, tastes, and skin sensations
 - The sense of context. Nature is understandable, predictable, manageable, and meaningful
- Directed attention in the city and at work
 - Many demands
 - Many decisions



Nature-Based Research in Sweden

- Gardening therapy together with multimodal treatment improves recovery from stress (Grahm et al 2017)
- Forest walks improves rehabilitation from stress (Annerstedt et al 2010, Sahlin et 2014)
- Virtual forest pictures and sounds facilitate recovery from stress (Annerstedt et al 2010)
- Nature smell more important for stress recovery than sight and sound when tested in virtual environment (Hedblom et al 2019)



Forest and health

- Goal
- To investigate
 - whether and how spending time in the forest can improve human health
 - how forest management can be planned and pursued to promote human health.



Research questions

- Can the forest cure people with exhaustion disorder?
- How should the forest look in order to be curative?
- What do people do in a forest environment?
- Which forest environments are the most popular?
- Is a green outdoor environment better than an indoor environment?



Can the forest cure people with exhaustion disorder?

- 45 minutes in the forest lower the heart rate and blood pressure
- Improves mental state
 - Happier
 - More relaxed
 - Calmer
 - More harmonious
 - More alert
 - More clear-headed
- Improves attention capacity
- Contribute to exhausted people to take charge of their lives
- However, only visiting the forest doesn't make exhausted people able to get back to work



The healing process

- Frustration in adaptation to nature >
- Choosing a favorite place >
- Peace of mind >
- Reflective thinking >
- Desire to change



How should the forest look in order to be curative?

- Light
- Open
- Have a view
- Awaken a sense of greatness
- Contain large trees
- Offer some protection



Which forest environments are the most popular?



Forest at the lake



Open pine forest

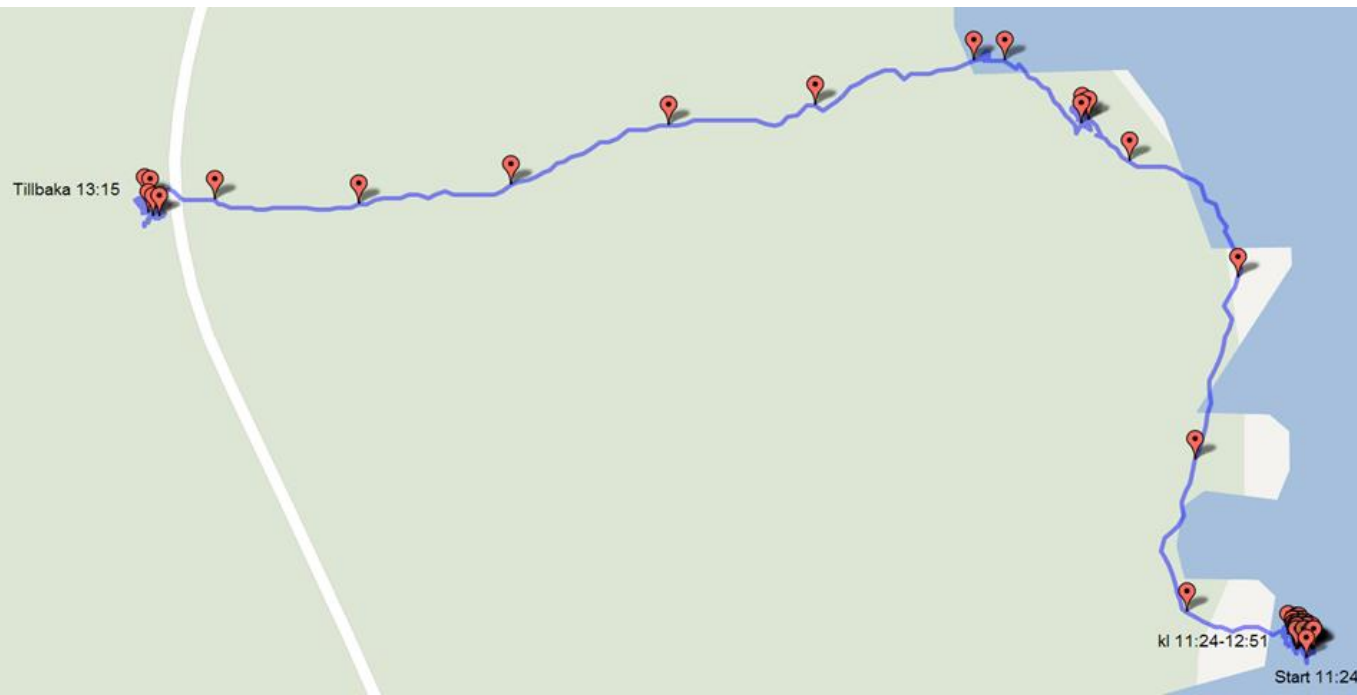


Rocky landscape with scattered trees



What do people do in a forest environment?

- Sit down in a favourite place
- Walk around



Is a green outdoor environment better than an indoor environment?

- An indoor environment with the right qualities and right activities can contribute just as much to recovery as the forest
- A restorative environment should be
 - Coherent
 - Appealing
 - Sufficiently non-demanding
- If the environment includes non-demanding nature-based activities, an indoor environment can also be restorative



Planning for Forestry and Forest Therapy

- It is possible to have more therapy forests in the forest landscape
 - If therapy forests are "moved around in the landscape" over time.
 - Therapy forest stands can not be left unmanaged and left in the same place
 - Other areas can be shifted to use for therapy.
- With proper planning, the forest can be used for multiple purposes at the same time



Forest Therapy and Integration

- The forest as arena for facilitating integration
- Sponsoring social activities in the forest
- Inclusion in social and cultural contexts
- Improving education

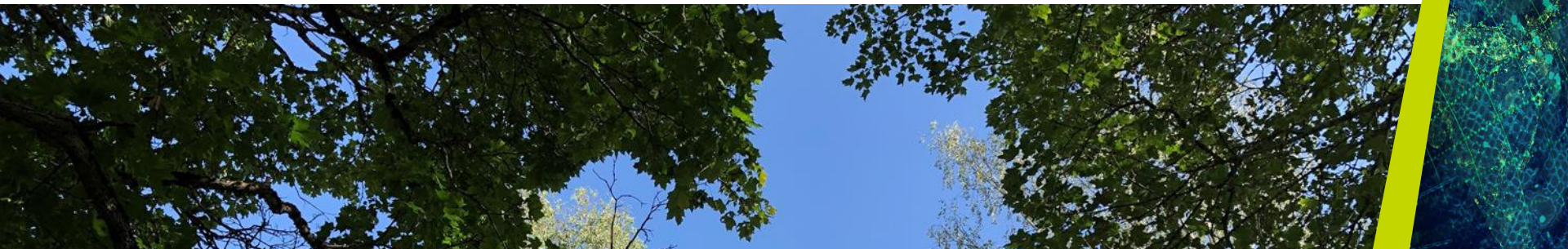


Conclusion

The forest:

- Give the brain the opportunity to restore by spontaneous attention
- Reduce blood pressure and stress
- Improves mood
- Improves health and wellbeing
- Improves recreation, restoration and rehabilitation

Forest is a place to thrive in



Thank you!

CONTACT INFORMATION

Ann Dolling
Dep of Forest Ecology and Management
SLU
901 83 Umeå
Sweden

e-mail: ann.dolling@slu.se
Phone +46 (0) 90 786 83 83
Mobile +46 (0) 070 699 74 52



SCIENCE AND
EDUCATION
FOR
FABLE
SUSTAINABLE
LIFE