



# Green Care - Nature and Mental Health

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Case Study

Biosphärenregion  
Berchtesgadener Land



# Green Care – Nature and Mental Health

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# Framework conditions of the research project

**Duration:** 11.2018-09.2023

**Financing:** Bavarian State Ministry of Environment and Consumer Protection & Bavarian State Ministry of Health and Care

**Partner:** UNESCO Biosphere Reserve Rhön, bavarian part (Government of Lower Franconia)

**Biosphärenreservat  
Rhön**



**Biosphärenregion  
Berchtesgadener Land**





## Biosphere Region Berchtesgadener Land, Upper Bavaria





# Pre-alpine & alpine landscapes

- Administrative Office of the Government of Upper Bavaria
- The only alpine and pre-alpine biosphere reserve in Germany
- Near Austria, Salzburg
- The area is about 840 km<sup>2</sup> in size
- and has around 100,000 inhabitants in 15 towns, markets & municipalities
- The altitude is between 380 meters in the Alpine Foreland to 2,713 meters (Watzmann) in the Northern Limestone Alps



# The Naturebased Mindfulness Training

**Goal: Supporting mindfulness, relaxation and emotional attachment to nature**

Training was developed by M. Krebs-Fehrmann and is based on exercises from the MBSR (Mindfulness-Based Stress Reduction) combined with exercises from nature education:

- Perceptual exercises with all senses: experiencing nature & anchoring to the present
- Building a forest sofa / small camp
- Body awareness exercises, e.g. body scan, walking barefoot, walking meditation, mindful yoga
- Reading animal tracks
- Watching and getting in contact with animals and plants
- Breathing Meditation, Loving Kindness Meditation
- Psychological reflections of the exercises in the group



Discover nature as a resource for your own everyday life

# Research questions and monitoring

**How can the “Naturebased Mindfulness Training” be used in the psychosomatic rehabilitation with patients with depression? And how can the training be used for the prevention of stress disorders and burnout in the general population?**

- Is the “Naturebased Mindfulness Training” effective in the short term and is it subjectively experienced as effective by the participants?
- Is the “Naturebased Mindfulness Training” effective in the long term and do the participants incorporate what they have learned into their everyday lives?

Quantitative survey by questionnaires

Additional 15 qualitative expert interviews

**Independent scientific monitoring:**

Catholic University of Eichstätt-Ingolstadt, Evaluation Team of the Chair of Work and Organizational Psychology

# Scales of questionnaires used

## Central criterion variable

Positive and Negative Affect Schedule (PANAS; Breyer & Blümke, 2016) for the measurement of emotional state

## Additional criterion variables

- Mindful Attention and Awareness Scale (MAAS; Michalak, Heidenreich, Ströhle & Nachtigall, 2008)
- State Self-Compassion Scale (SSCS-S; Neff et al.)
- Measurement of Depression (PHQ-D; Löwe, Spitzer, Zipfel & Herzog, 2002)
- Naturebased Mindfulness (Wastlhuber, 2019)
- Emotional connection with nature (Wastlhuber, 2019)

And others

## Survey times

- T1 = before the intervention
- T2 = directly after the intervention
- T3 = three months after the intervention (follow-up)



# Probands & groups

## Clinical groups (Rhön & Berchtesgadener Land)

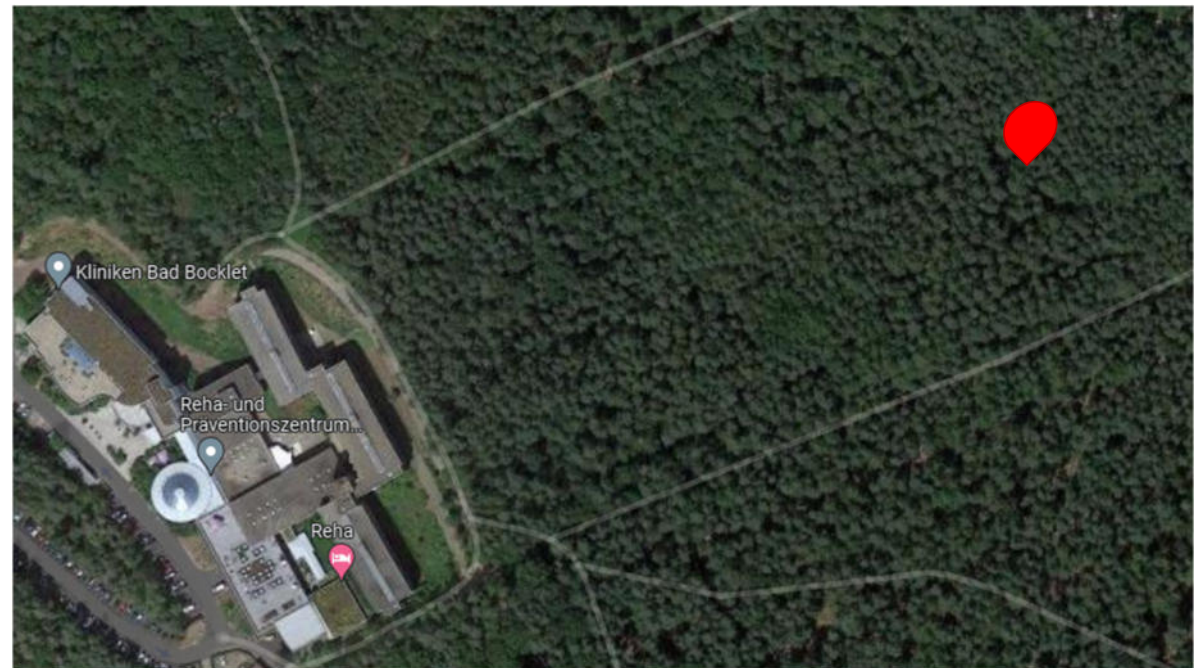
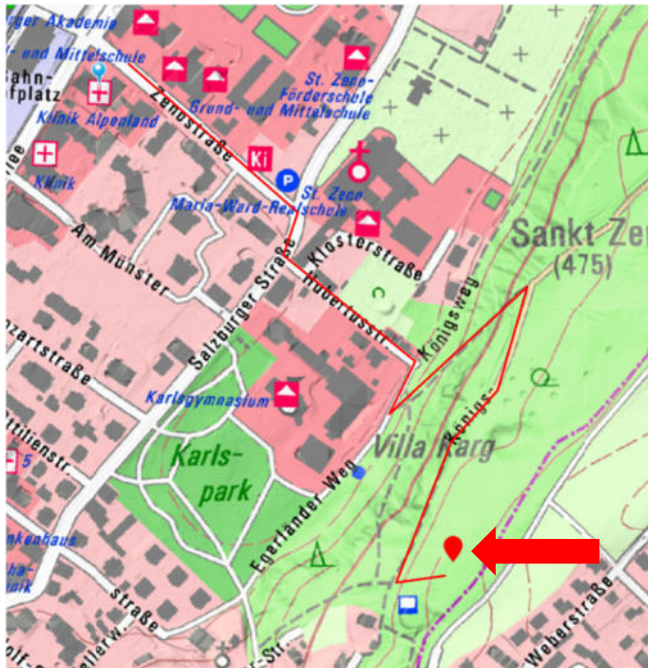
- 2 Departments of Psychosomatic Rehabilitation
- Patients with diagnosed depression (n=96 experimental group, n=96 control group)
- 3 x 4 hours, once a week
- Small groups with 4-8 probands
- Head trainer: M. Krebs-Fehrmann, accompanied by a clinic therapist
- in any weather, except for severe storm warnings

## Preventive groups (Berchtesgadener Land)

- N=48 experimental group, n=48 control group
- General population: Healthy people without diagnosed mental illness
- Groups with 4-12 probands
- Head trainer: M. Krebs-Fehrmann, accompanied by a behavioral therapist

# Different locations / clinical groups

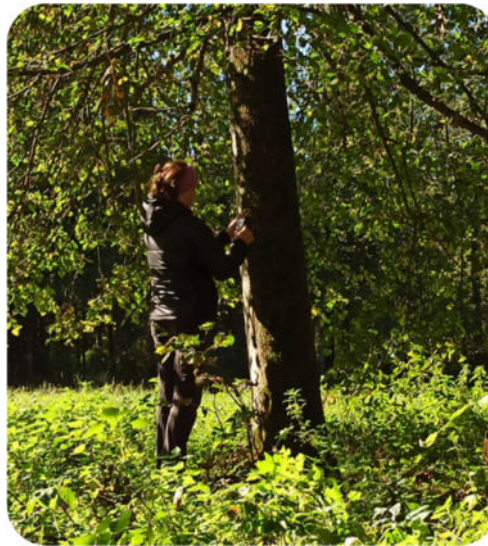
City forest (Berchtesgadener Land) in comparison to „wilderness“ (Rhön)











# First results

**Final report of the university is expected in March 2023**

## Clinical research:

- A significant, positive influence of the interventions on the criterion variable **affect**, as well as on the construct of **self-compassion** and the construct **closeness to nature** could be demonstrated
- In addition, tendencies were found in the **constructs of depression, mindfulness, nature-related mindfulness, nature-protecting readiness** and **nature-protecting behaviors**

No differences were found whether a group was in the “wilderness” or in the city forest.

## Preventive research:

- A significant, positive influence of the interventions on the criterion variable **affect**, as well as on the constructs of **nature-related mindfulness, emotional closeness to nature** and **internal attribution of responsibility for the protection of nature** could be demonstrated
- In addition, tendencies were found in the constructs of **mindfulness, self-compassion** and **nature-protecting behaviors**

The mentioned effects weakened slightly after 3 months (follow-up), but were nevertheless stable (compared to the t1 survey) so a long-term effectiveness of the training could be statistically proven.

# Challenges posed by the corona pandemic

## **Lockdown, delays and higher stress level**

### **Clinical area:**

- Temporarily reduced bed capacity in the clinic
- High stress situation at the clinics due to illness absences in the staff and hygiene measures
- Sickness absences in patients (reduced group size, drop-out)
- FFP2 masks make communication more difficult at information events

### **Preventive area:**

- Cancellation of six groups between spring 2020 and autumn 2021
- High stress situation of the participants, especially for parents with primary school pupil or preschooler



# Further questions that have arisen from our research

## **Differences between men & women**

- Further research is needed to understand more precisely what the differences in the experience of nature and the experiential content of mindfulness exercises between men and women are and whether this has consequences for practical work. To what extent do military experiences in the field influence the experience of nature?

## **Growing up in nature**

- To what extent do childhood experiences in nature influence the chances of well-being in nature in adulthood? In the future, we will meet more and more adults who have not had any experience of nature in their childhood. What are the chances that these adults can experience nature as a boost for their mental health?



I think it's a question of breathing technique!

**Thank you for your attention!**

Cartoon: ©P.Gaymann

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