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# Forest-related Economic and Social Science Research

**Roland Olschewski**

Swiss Federal Institute for Forest, Snow and Landscape Research WSL

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# Research Unit: Economics and Social Sciences



Irmi Seidl

## Research Groups:

- Regional Economics and Development
- Social Sciences in Landscape Research
- Environmental and Resource Economics



Marco Pütz



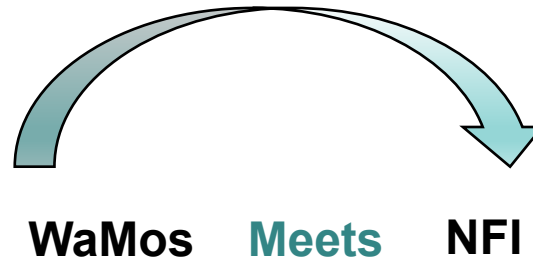
Marcel Hunziker



Roland Olschewski

# Integrating recreation into forest monitoring

Tessa Hegetschweiler, Marcel Hunziker,  
Urs-Beat Brändli, Christoph Fischer, Christian Ginzler



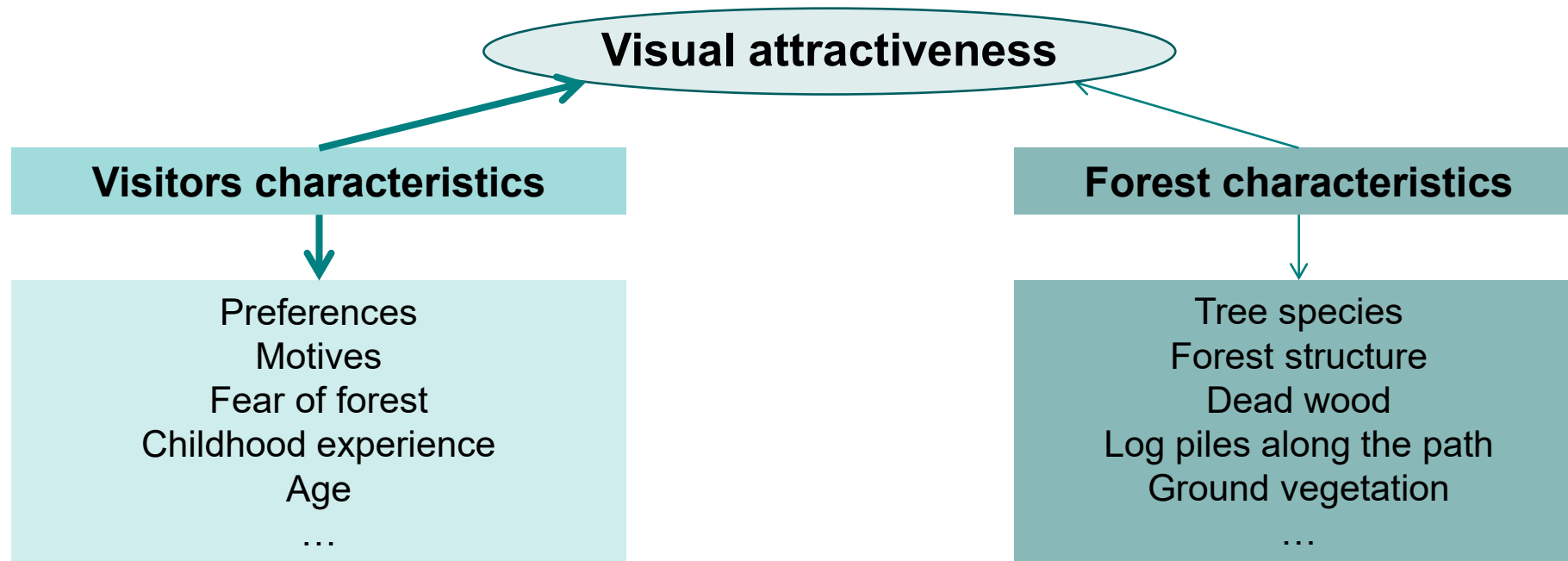
Landesforstinventar  
Inventaire forestier national  
Inventario forestale nazionale  
Inventari forestal nazional  
National forest inventory

Funding: BAFU, WSL, SERI  
Duration: 2014 – 2022

# Integrating recreation into forest monitoring

## Goals

- linking bio-physical and socio-cultural monitorings with regard to forest recreation.
- developing a model for forest recreation consisting of natural- and social-science components.



# Integrating recreation into forest monitoring

## Added value for NFI?

- Identify variables contributing to visual attractiveness
- Develop method to integrate recreation and societal aspects into NFI

## Added value for WaMos?

- Determine bio-physical forest characteristics that contribute to explaining respondents' assessment of the forest

## Relevance for practice?

- Indicate which forests are particularly attractive for recreation
- Option to adapt forest management accordingly

➤ Follow-up: NFI-Module «Forest and Society»

# MoniFun

## Co-creating a blueprint of a harmonised European Forest Multifunctionality Monitoring System

- 13 partners in 11 countries
- Coordination: Natural Resource Institute Finland (LUKE)
- Task 2: Define operational indicators, information sources and assessment methods for seven indicators

Task 2.7 – Socio-economic demands on ecosystem services (Lead: Marcel Hunziker, WSL)

Funding: EU Horizon Europe  
Duration: 2024 – 2027



# SUPERB – Upscaling Forest Restoration

- 36 partners in 16 countries
- Lead: European Forest Institute; co-coordination: Wageningen Environmental Research
- aims to restore thousands of hectares of forest landscape across Europe

## WP5 – Governance and Society (Lead: Marcel Hunziker, WSL)

### Goal:

- advance forest restoration by ensuring that **policy and societal demands are known and considered** in practice

### Sub-goals:

- Assess the coherence of EU and (sub-)national policy networks governing restoration across policy sectors
- Assess **local stakeholder demands and conflicts**, and involve them in **exploring governance solutions**
- **Map the demands** of ecosystem services by landowners, managers, and community/society
- Provide a **comprehensive tool for socio-cultural monitoring and governance** of restoration projects

### Research areas:

- Forest-governance research from local & regional to (sub-)national and international level, in Europe and beyond
- Forest-preference research including interviews and surveys on regional and multi-national level in Europe

Funding: EU Horizon 2020  
Duration: 2021 – 2025



# Visitors' preferences for forest structural attributes

Isabelle Jarisch, Thomas Knoke (TU Munich),  
Roland Olschewski (WSL)

- Nation-wide survey in Germany
- Goal: Determine population's preferences for structural variation
- Method: Choice Experiment

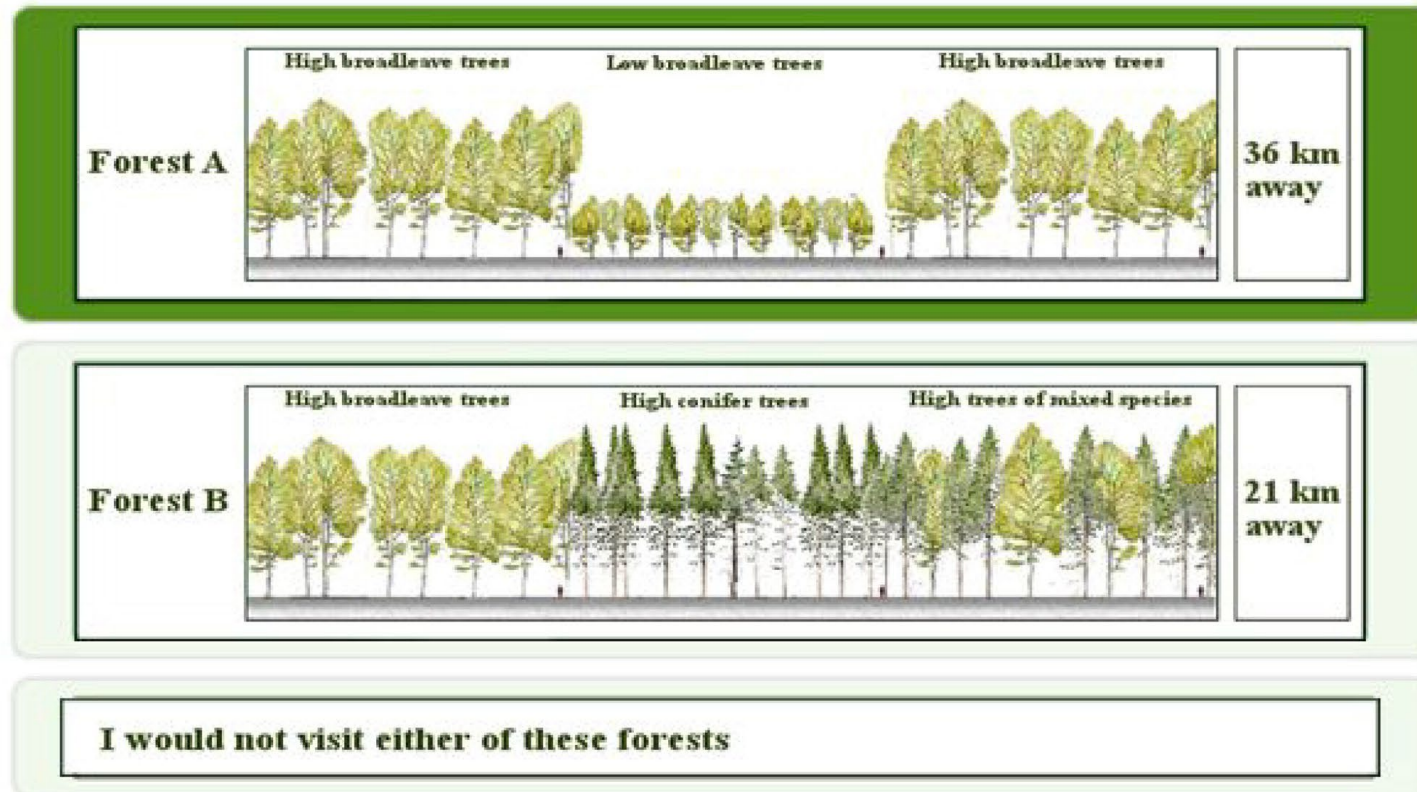
Funding: DFG (Germany)  
Duration: 2023 - 2024



## Which of these two forests you would prefer for your next visit?

If you would not visit either of them, please choose “I would not visit either of these forests”.

- Please pay attention to both how forest looks and how far it is from your point of departure
- Imagine that these two are your options for the next recreational visit to the forest, regardless of what your real options are
- Please take into account that you may want to do something different than visiting a forest, e.g. if you find forest A & B not fulfilling your expectation of a forest visit or if both of them are too far away.



Next

Filyushkina et al. 2017: Ecological Economics  
<https://doi.org/10.1016/j.ecolecon.2017.04.010>

# Strategies for climate-adapted forests:

## ”from damage-focused coping to precautionary measures”

Tobias Schulz, Dominik Braunschweiler, Tamaki Ohmura, Janine Schweier, Roland Olschewski (WSL)

- Surveys with forest owners and managers in Canton Bern
- Goal: Determine preferences for silvicultural interventions
- Method: Choice Experiment

Funding: WHFF-CH (Nr. 2021.13) &  
Cantons Aargau/Bern  
Duration: 2021-2024

# Strategies for climate-adapted forests

## Choice Experiment to analyse acceptance of adaptation measures

### Scenario:

- Climate change: increased frequency and intensity of damaging events
- Management options: proactive or reactive interventions
- Focus on vulnerable stands

### Choice situation:

- 2 options defined by 4 attributes
- 12 repetitions with varying combinations

# Strategies for climate-adapted forests

## Attributes and their levels

<b>Timing of action:</b>	- proactive (before event)	- reactive (after event)
<b>Type of intervention:</b>	- pre-regeneration* - planting after harvests	- natural regeneration* - planting
<b>Tree species:</b>	native / non-native	
<b>Amount of one-time payment (SFr./ha):</b>	3'000 / 6'000 / 9'000 / 12'000 / 15'000	

\*) combined with supplementary planting case-by-case

# Strategies for climate-adapted forests

## Survey Canton Bern:

- Postal invitation sent out to 3032 people
- Link to online survey platform
- 558 completed questionnaires (response rate: 18.5%)

Welche dieser Alternativen würden Sie für Ihre gefährdeten Waldflächen wählen?

(1 of 12)

Zeitpunkt	Massnahme <b>vor</b> einem Schadensereignis	Massnahme <b>nach</b> einem Schadensereignis
Massnahme	Vorverjüngung mit fallweiser Ergänzungspflanzung	Pflanzung
Baumart	heimische Baumarten	Gastbaumarten
Einmaliger Beitrag in CHF pro ha für 15 Jahre	15'000	9'000
	<input type="button" value="Wählen"/>	<input type="button" value="Wählen"/>

# Strategies for climate-adapted forests

Choice Experiment Results Canton Bern:

Timing of intervention	
Proactive (before event)	4.2380
Reactive (after event)	-4.2380
Type of intervention	
Pre-regeneration	3.1538
Planting after harvest	-3.1538
Natural regeneration	39.6728***
Planting	-39.6728***
Tree species	
Native	66.7022***
Non-native	-66.7022***
One-time payment (SFr./ha)	
3'000	-155.3014***
6'000	-53.1424***
9'000	14.0842
12'000	77.1950***
15'000	117.1645***

- No significant preference
- No significant preference
- Natural regeneration preferred
- Native species preferred
- High payments preferred

Braunschweiger et al. (in prep.)

# Strategies for climate-adapted forests

Latent class analysis Canton Bern:

	«Proactive & payment-motivated»	«Reactive & payment-motivated»	«Conservative»
<b>Timing of intervention:</b> Before (+) vs. after (-) event	++++	-	--
<b>Type of intervention:</b> Pre-regener. (+) vs. planting (-)		++	
<b>Type of intervention:</b> Natural regener. (+) vs. planting (-)		++	++
<b>Tree species:</b> Native (+) vs. non-native (-)	-	++	++++
<b>One-time payment:</b> High (+) vs. low (-)	++++	++++	++

Braunschweiler et al. (in prep.)

# Strategies for climate-adapted forests

## Conclusions Canton Bern

- 1/3 of respondents prefer proactive measures and accept non-native tree species
- 2/3 of respondents are reluctant
  - raise awareness of proactive interventions through information campaigns/trainings
  - promote climate-adaptive measures after events (including native tree species)
- Financial support is important and can have a leverage effect
  - but needs to be complemented by a mix of further instruments

Braunschweiger et al. (in prep.)



# Mainstreaming Forest Ecosystem Services

Tobias Schulz, Tamaki Ohmura, Esther Thürig, Roland Olschewski (WSL)

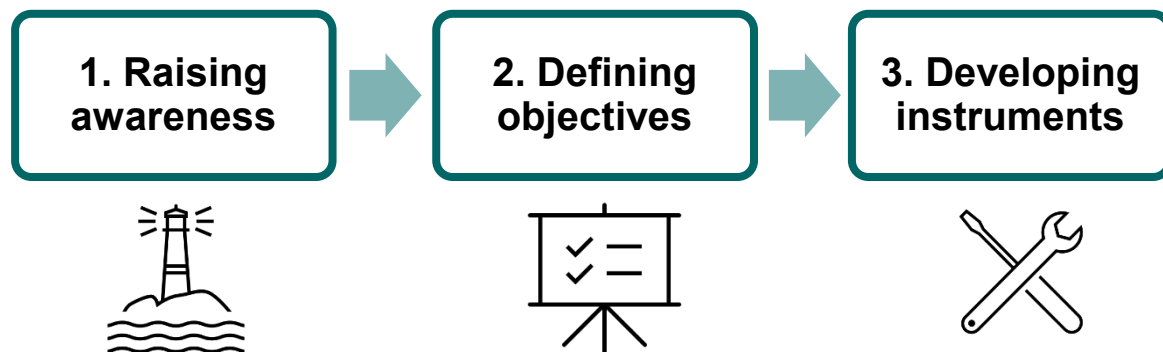
## Synthesis of three NRP 73 research projects (2018 - 2022)

- Decision support system for forest management (SessFor, E. Thürig)
- Acceptance of biodiversity offsetting & carbon sequestration in forests (ATREE, T. Schulz & T. Ohmura)
- Insurance value of forest ecosystem services (DIVES, R. Olschewski)

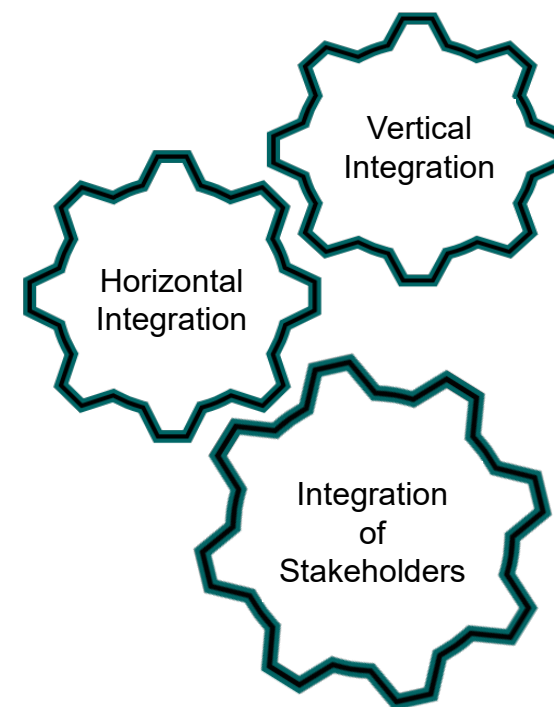
Funding: SNF - NRP 73  
Duration: 2022 - 2023

# Mainstreaming Forest Ecosystem Services

## Key steps in mainstreaming FES



- ... aims at the wider consideration of FES
- ... in strategies, policies, programmes and practices
- ... of public and private actors
- ... across all sectors that benefit from or influence FES
- ... requires an integrative approach



(based on Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, IPBES 2018)

# Mainstreaming of Forest Ecosystem Services

## 1. Awareness

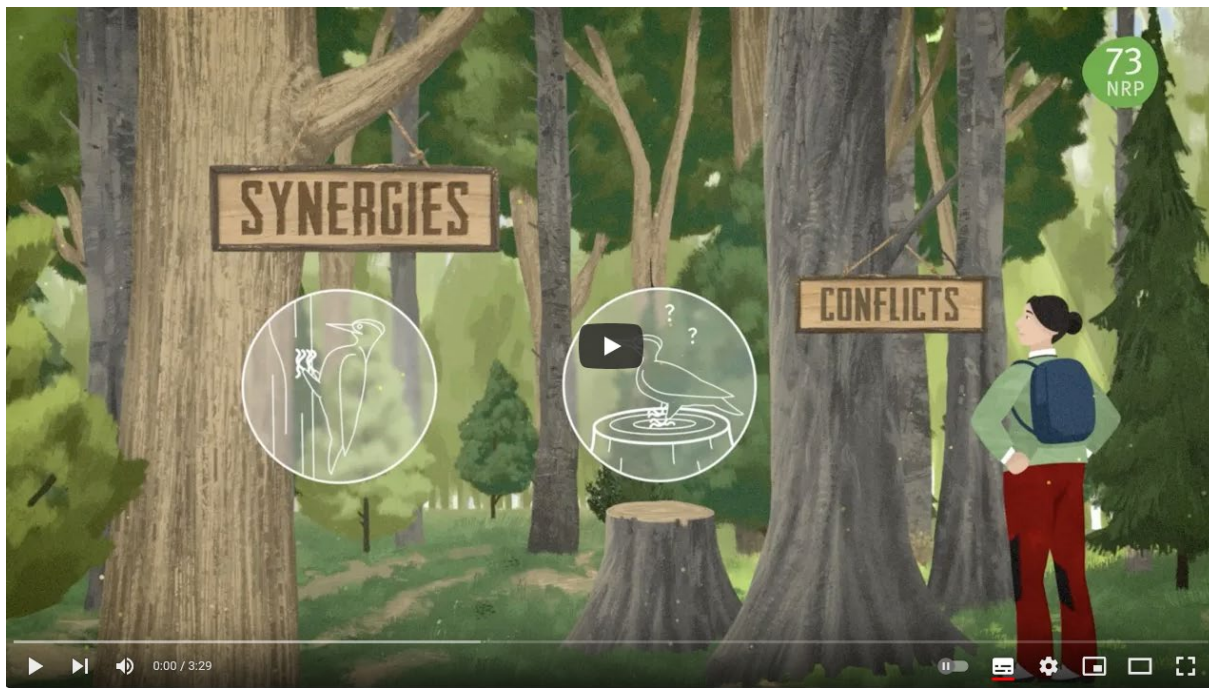
- Opportunities to diversify income sources in the forest sector
- Pressure through additional demand and limited capacity

## 2. Objectives

- Identifying and prioritising objectives
- Coordination across sectoral boundaries

## 3. Instruments

- Legal, regulating instruments as backbone of forest policy
- Options for developing market-based instruments



Video: Forests and their services for people



Policy Brief: Mainstreaming Forest Ecosystem Services

(Available at: <https://nfp73.ch/en/mediacenter>)



# Outlook (I)

## ETH-Joint Initiative SCENE (Swiss Center of Excellence on Net Zero Emissions)

### WP 3: Biomass carbon cycle (Lead: Esther Thürig)

Goal: demonstrate optimization pathways of

- forest and landscape management
- the utilization of woody biomass
- substitution effects to mitigate climate change.



Annina Guthauser, Roland Olschewski (WSL):

- Identify economic, political, and societal opportunities and obstacles of a net-zero transformation
- Develop forest and wood use scenarios in cooperation with stakeholders

Funding: ETH/WSL  
Duration: 2023 - 2025

# Outlook (II)

## ETH-Joint Initiative MainWood (Mainstreaming Wood Construction)

WP B: Forest growth and wood production (Lead: Harald Bugmann/Andreas Rigling)

Goals:

- Develop forest management scenarios relevant to net zero (particularly in case study regions)
- Model effects on forest growth, ecosystem services and biodiversity
- Survey of forest owners/interest groups on implications of modeling results

Tobias Schulz, Eugénie Paul-Limoges, Frank Krumm (WSL):

- Survey focusing on stakeholders' acceptance of forest management scenarios

Funding: ETH/WSL  
Duration: 2023 - 2025

# Outlook (III)

## Policy Instruments to foster the 3S Climate Services of Forest and Wood

Eva Lieberherr (Lead, ETH), Astrid Zabel (Uni Bern/CBD),  
Tamaki Ohmura (Uni Zurich), Tobias Schulz (WSL)

### Goals:

- Develop goal system for 3S climate services (sequestration, storage, substitution)
- Identify crucial actors and respective barriers along the wood value chain
- Suggest targeted policy instruments/mix to overcome barriers
- Assess instruments through stakeholder workshops and surveys

Funding: BAFU  
Duration: 2023 - 2024



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# Thanks for your attention