

The Effect of Wildlife-Protection Measures on Winter-Sports Behaviour



Marcel Hunziker

Swiss Federal Institute of Forest, Snow and Landscape Research, WSL

Social Science in in Landscape Research Group

Ch-8903 Birmensdorf

www.wsl.ch/sla

Introduction: Situation and Problem

- Winter-sport use of nature and landscape has been increasing and is expected to further increase in the future.
- Winter-sport activities can have negative impacts on nature by disturbing wildlife.
- Authorities and NGOs try to resolve such conflicts by bans and fines, on-site interventions, information and persuasive measures.
- But, what is the actual effect (not only stated acceptance!) of such measures?
- Our studies tried and still try to contribute to answer this question.

Theory: Information ≠ Persuasion

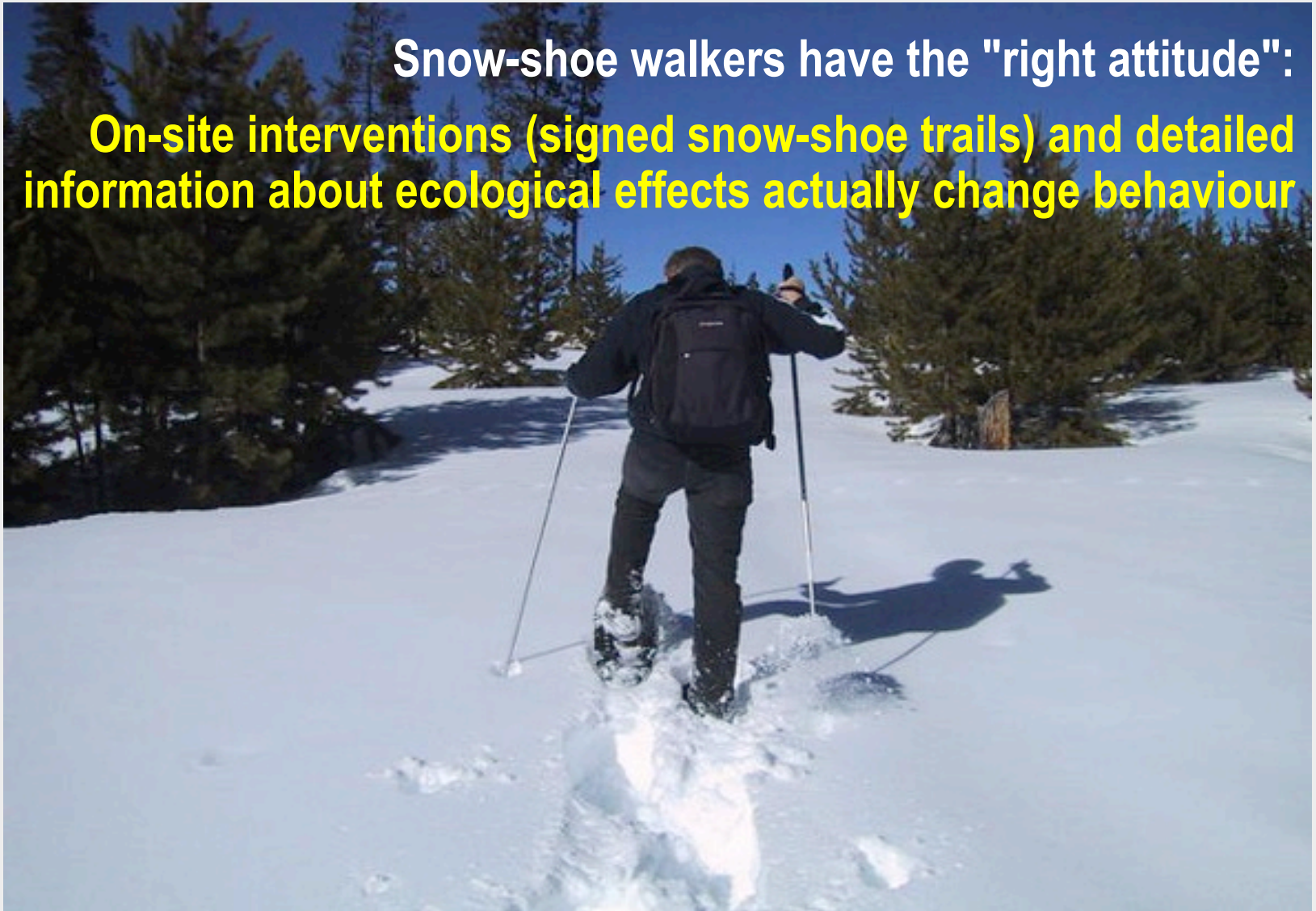
"Elaboration-Likelihood"-Approach of Petty & Cacioppo (1986)

Goal	Strategy	Example
1) To strengthen an attitude ($A \rightarrow A$)	direct	information about facts that support attitude A
2) To change an attitude ($X \rightarrow A$)	indirect	introduction of a highly accepted, trustable model person who holds attitude A

Former Studies (1): Snow-Shoe Walking (Freuler & Hunziker, 2005)

Snow-shoe walkers have the "right attitude":

On-site interventions (signed snow-shoe trails) and detailed information about ecological effects actually change behaviour



Former Studies (2): Freeriding (Zeidenitz & Hunziker, 2005)



Freeriders do not (yet) have the "right attitude":

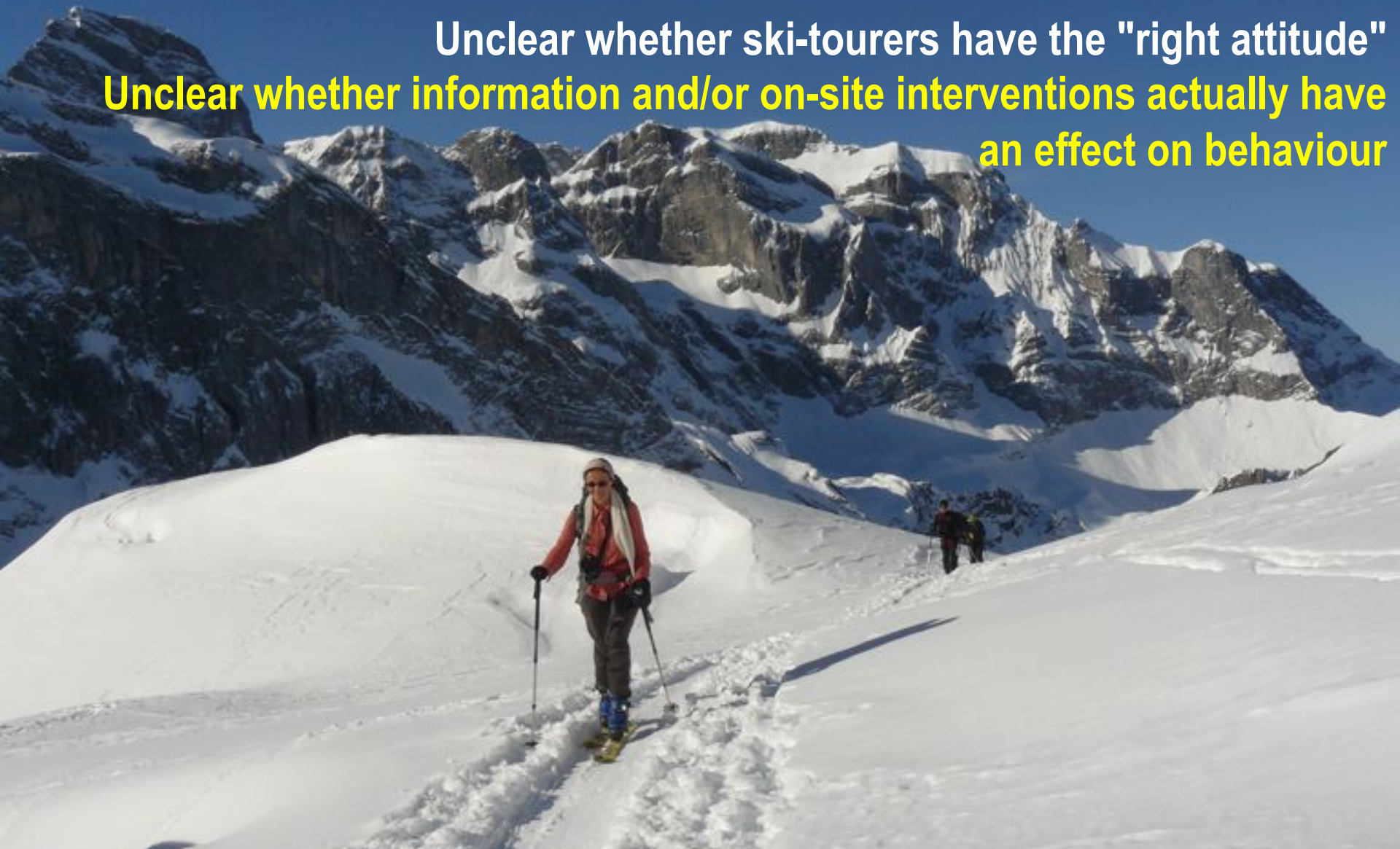
Detailed information useless

Effect of on-site interventions and persuasion
unclear (new study running: first insights in the outlook, if time)



More Recent Study: Ski-Touring (Immoos & Hunziker, 2015)

Unclear whether ski-tourers have the "right attitude"
Unclear whether information and/or on-site interventions actually have
an effect on behaviour



The "Respect-Wildlife" Campaign: Measures

General communicative measures



Source: Respektiere deine Grenzen.

Local on-site intervention measures



Source: <http://www.belop.ch/referenzen/umwelt-natur-landschaft.html>

"Respect-Wildlife": Rules communicated by the Campaign

Rule	Message
1	Respect wildlife reserves.
2	Stay on signed routes and ways within forests.
3	Avoid forests edges and snow-free areas.
4	Put dogs on leashes, especially within forests.

Research Questions

- Which factors do have influence on nature-responsible ski-touring behaviour?
- Can ski-touring behaviour actively be influenced by steering measures such as the "respect-wildlife" campaign?
- Which types of measures are (more) successful:
 - general communicative measures (flyer with information and appeals to respect rules)
 - local on-site interventions (sign posts, barrier tapes, etc.)

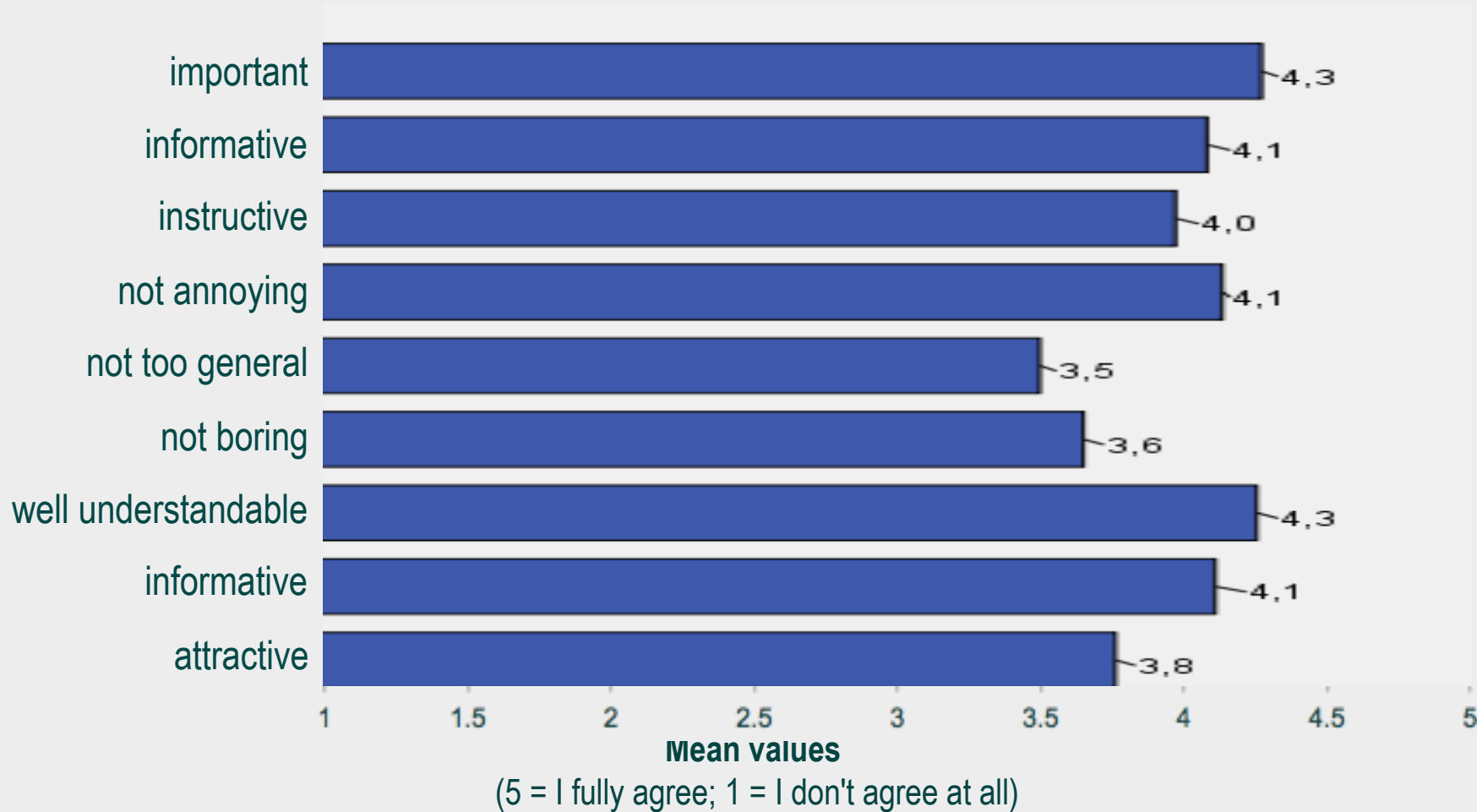
Method: Survey with "Experimental" Design

- Survey of ski-tourers (and snow-shoers) beginning 2012
- To enable evaluating the effect of local on-site interventions (sign posts, barrier tapes, etc.): survey conducted in study areas with differing density of such interventions (treatment-control-experiment)

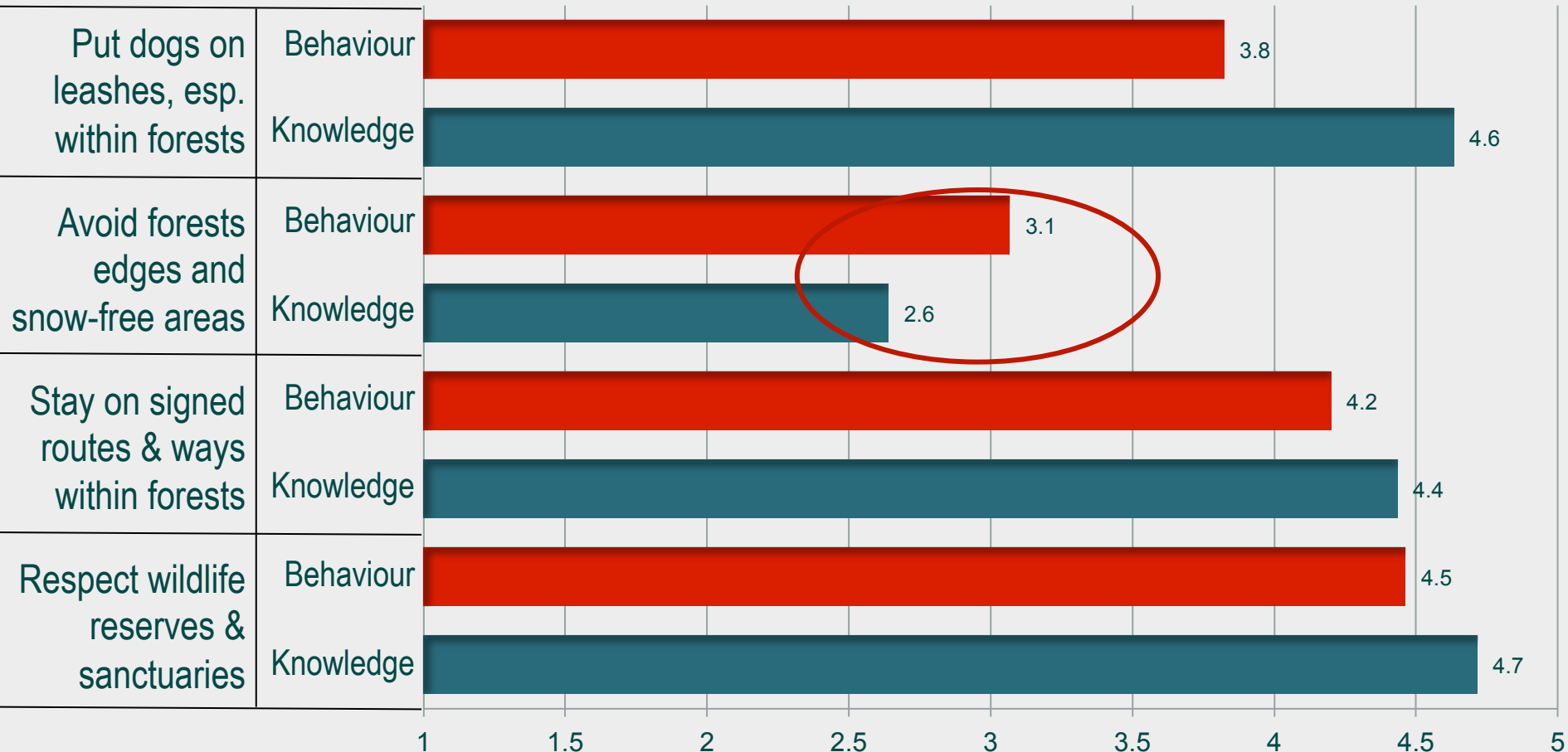
Study-area designation	Description
Treatment	<u>High</u> density of (legally binding!) protection zones and <u>high</u> level of existing on-site intervention instruments (in particular presence of barrier tapes and prohibitive signs up on the mountains and slopes)
Control-1	<u>High</u> density of (legally binding and recommended) protection zones, but very <u>low</u> level of existing on-site intervention instruments (only presence of some perimeter signs at the starting points for touring).
Control-2	<u>Very low</u> density of protected areas (only recommended ones), <u>without any</u> presence of on-site intervention instruments.

Results: Campaign Is Well Known and Well Assessed

In general: **2/3** know the campaign, they **assess it** (rather to very) **positive!**



Results: Knowledge of the Rules & resp. (Reported!) Behaviour



Mean values

(5=I know the rule / I behave according to the rule;
1=I don't know the rule / I don't behave according to the rule)

Results: Predictors of Nature-Responsible Behaviour

Significant predictors for reported nature-responsible behaviour of ski-tourers
($R^2 = 60\%$!)

	stand. beta	sig.
Attitude towards behavior	.457	.000
Subjective norm	.192	.000
Perceived behavioral control	.119	.000
Solution knowledge	.284	.000
Knowing of the campaign	.096	.010
On-site interventions	.034	.326

Results: Treatment-Control Experiment (On-Site Interventions)

Outcome of the treatment-control comparison (U-test) for stated nature-responsible behaviour

Treatment: high density of protection zones and high level of on-site interventions

Control 1: high density of protection zones, low level of on-site interventions

Control 2: low density of protection zones and no on-site interventions

	Treatment		Control-1		Control-2			
	N	mean rank	N	mean rank	N	mean rank	χ^2	sig.
Stated behavior	58	213.59	212	185.37	111	189.95	3.019	.221

Outlook: Newest Studies on Free-Riding

(MSc-thesis Erzinger 2014 & running study)



Freeriders do not (yet) have the "right attitude":
Detailed information useless
How can freeriders actually be influenced?



The Innovative Freerider-Campaign "Respect Wildlife" in CH

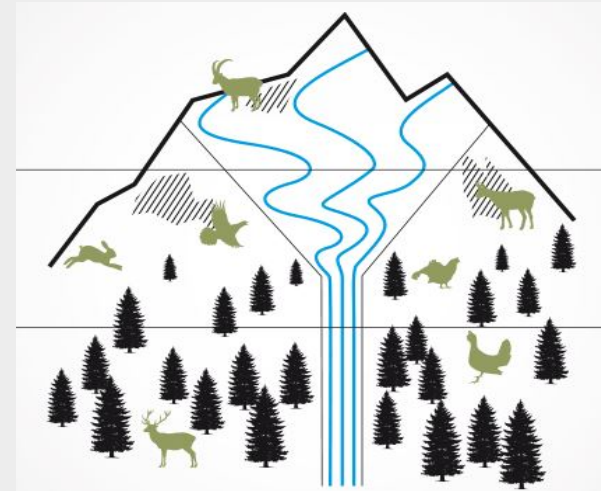
Again the four rules (only one actually relevant)

1. **Respect wildlife reserves.**
2. Stay on signed routes and ways within forests.
3. Avoid forests edges and snow-free areas.
4. Put dogs on leashes, especially within forests.

Plus: funnel rule



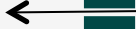
Measures since 2013/14: "convincing funny" muppets

- **Video clip** (pilot regions, Youtube, Vimeo, etc.)
- **Microsite** (www.respect-wildlife.ch)
- **Twitter**
- Respective sign posts since Feb. 2016 (one area)



Method: Survey with "Experimental" Design

- **Surveys** in winter 13/14 and 15/16 (standardised questionnaire)
- **Freerider only**, in two ski resorts
- **Experimental design**: pre-post and treatment-control

	pre (January 14 & 16)	post (end February 14 & 16)
Treatment Freerider-campaign present	Laax 	Laax 
Control Freerider-campaign <u>not</u> present	Flumserberg 	Flumserberg

Results: Effects of Freerider Campaign on Reported Behaviour

	pre	post
<i>Treatment</i> (Laax, present)		
Campaign known	65%	59%
Slogan known	40%	52%
Video spot known	--	<u>25%</u>
Wildlive reserves known	5	<u>5</u>
Rule 1 known (respect wildlife reserves)	4.3	4.6
Reported behaviour regarding rule 1	3.8	<u>4.2</u>
Funel rule known	3.0	<u>3.3</u>
Rep. behaviour funel rule	3.3	<u>3.6</u>
<i>Control</i> (Flums, not present)		
Campaign known	52%	54%
Slogan known	57%*	58%
Video spot known	--	4%
Wildlive reserves known	5	4.9
Rule1 known	4.2	<u>4.1</u>
Reported behaviour rule 1	3.8	3.6
Funel rule known	3.2	2.8
Rep. behaviour funel rule	3.5	3.2

But:

- Time periode of active campaign very short
- no good freeriding conditions

Level of significance 10%

Summarising Conclusions

- The ski-tourer and snow-shoer **campaign** was generally **successful**. Thus, continuing the campaign with a primarily **informative approach** seems to be **adequate**.
However, to **care about attitudes, peer pressure etc.** (besides information) is also promising, e.g. with measures such as "**persuasion** by opinion leaders".
- **On-site interventions** measures do not show significant influence on ski-tourer behaviour.
Thus, the efforts should primarily **focus on the tour preparation phase** when the desired behaviour is still perceived as being feasible (behaviour control...). Once on tour, people are rather not willing to change plans.
- First results indicate that the **freerider campaign with the muppets** shows **significant positive effects** on reported behaviour.
This encourages to continue with **target-group and fun oriented strategies** without (much or any) information, when the target group has not yet the "right" attitude.



Thank you for your attention!
Comments, Questions?

More Information:

www.wsl.ch/sla

Contact:

Marcel Hunziker

++ 41 44 739 24 59 marcel.hunziker@wsl.ch