



NORSK SENTER  
FOR BEREKRAFTIG  
KLIMATILPASSING

VESTLANDSFORSKING



# Outdoor recreation as a cause, a victim, and part of the solution, to environmental degradation and runaway climate change

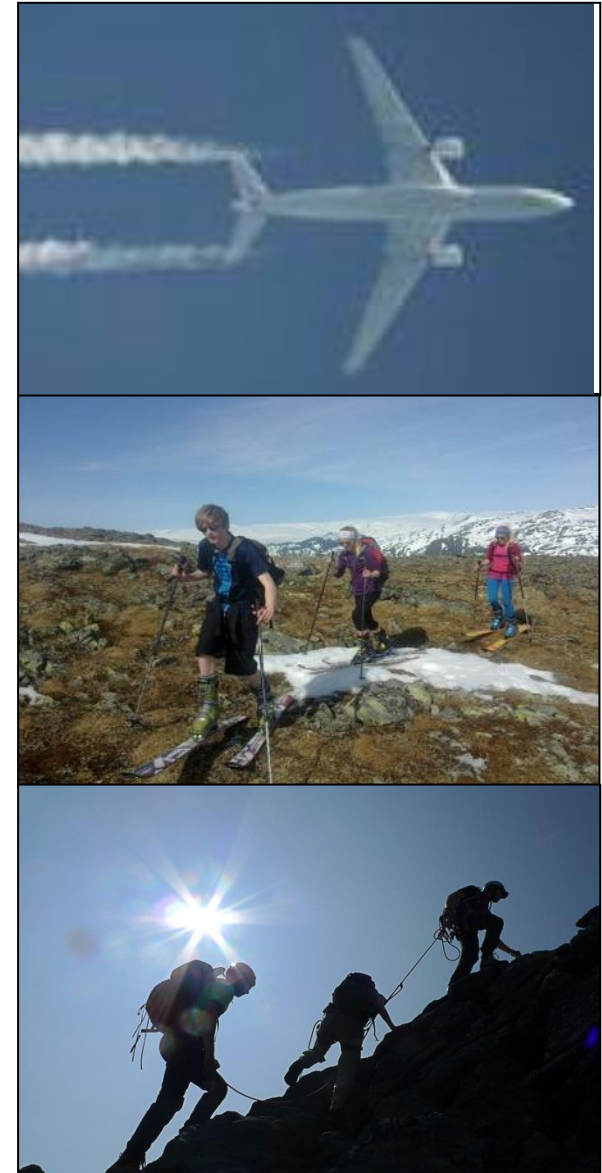
Web-lecture 26 May 2021 at the webinar series “Mountaun Talks”, organized by the IFMGA Environmental and Sustainable Access Commission in collaboration with Grid Arendal and the UIAA

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\*IFMGA Mountain guide

## Outline

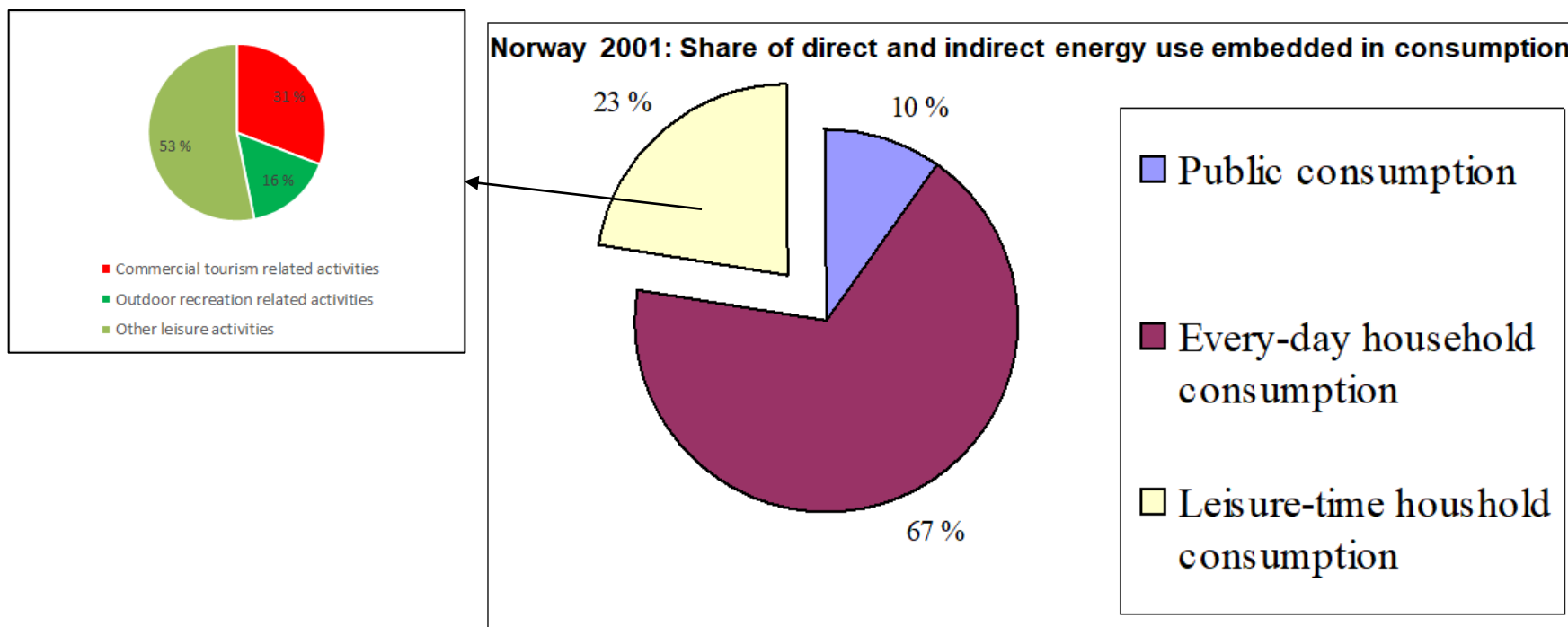
- Outdoor recreation as part of the climate problem
- Outdoor recreation as victim of climate change
- Outdoor recreation as part of the climate solution



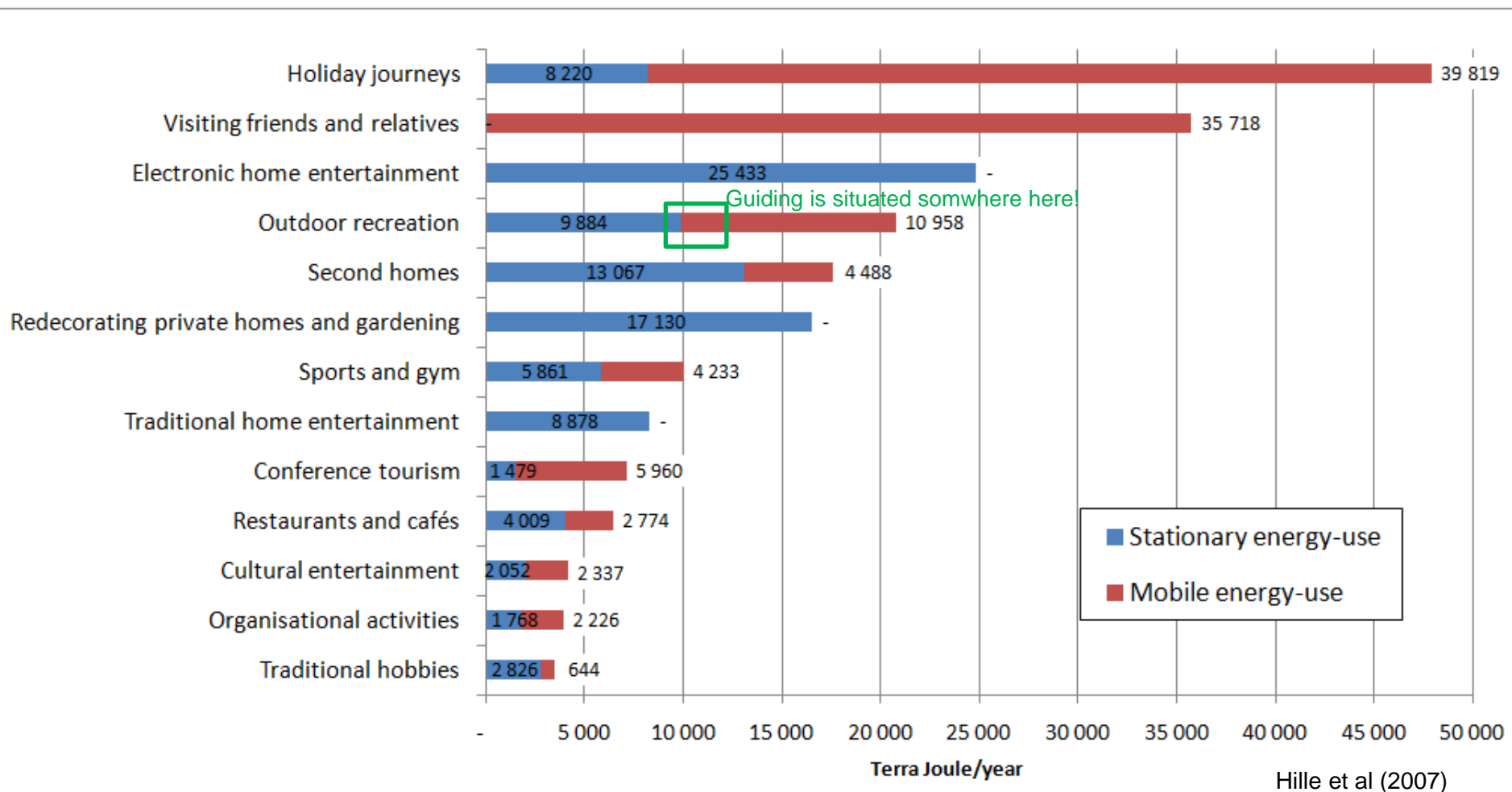
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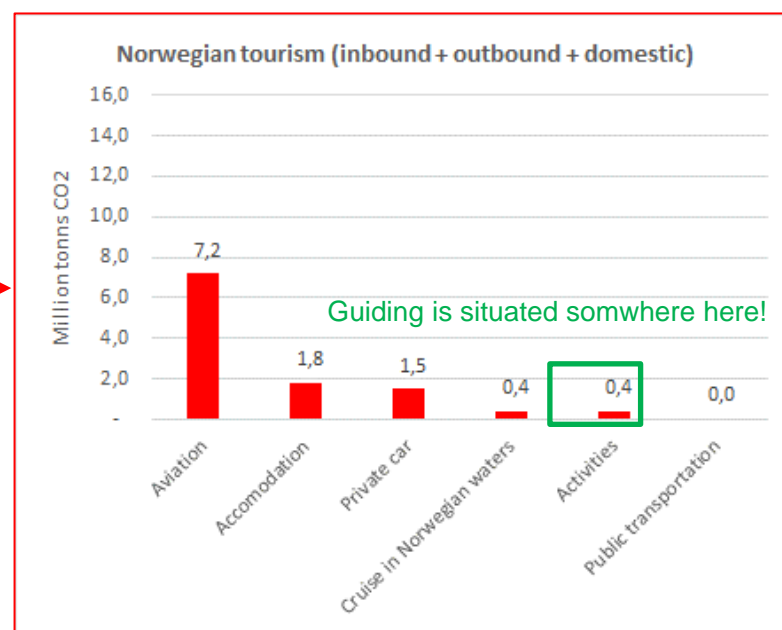
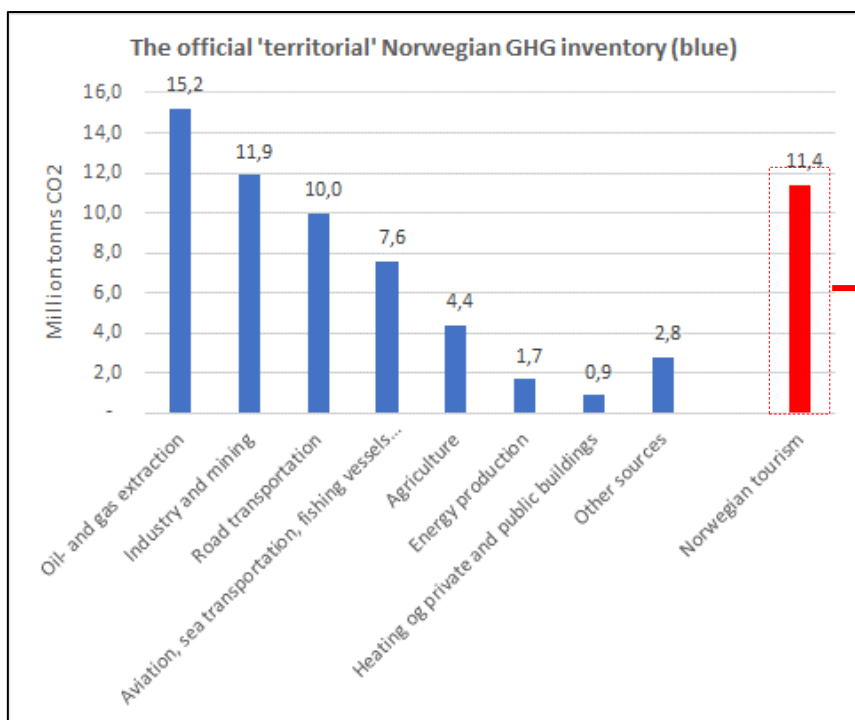
## The environmental problem when looking at it through consumption lenses



# Total energy-use per leisure activity, by Norwegians in 2001



# The 'tourism-emission explosion' of high-income countries – and the 'air-transport-explosion' of tourism



Adopted from:  
[https://www.vestforsk.no/sites/default/files/migrate\\_files/r-sdn-sluttrapport-endeleg-260611-2-.pdf](https://www.vestforsk.no/sites/default/files/migrate_files/r-sdn-sluttrapport-endeleg-260611-2-.pdf)

# Drivers of an un-sustainable leisure society in high consuming countries

- **Leisure activities in general**

- ▶ Leisure activities (including outdoor activities) becomes more transport-intensive and more 'materiel'
- ▶ Leisure products (including outdoor products) becomes more 'technical', containing increasing amounts of both 'old' and 'new' harmful substances
- ▶ An increase in the purchasing power of Norwegians combined with a reduction in prices of many imported products and services

- **Outdoor activities in particular**

- ▶ The idea that outdoor activities per definition is environmentally friendly remains a strong position in both the mind of people and in Norwegian environmental policy!
- ▶ At the same time there has been a shift in outdoor recreation consumption in two ways (1) an emergence of new outdoor activities (e.g. kiting) and demand for more differentiated versions of traditional outdoor activities (e.g. varieties of skiing), creating a marked increased demand for outdoor recreation products and services
- ▶ Also, there has been a marked shift in outdoor recreation ideology from achieving a 'simpler' to an 'easier' life, thus making it logical to install time-saving equipment (like a dish-washer in your cabin) to have more time for outdoor activities, and to separate the use of 'leisure infrastructure' (the boat, the cabin, the transport to and from) from the act of experiencing nature
- ▶ Thus, staying in a large and high standard cabin or leisure boat, using a Suburban Van to access your recreation spot, or taking a plane halfway around the globe to visit a national park, is by most of us not seen as contradicting that of experiencing pristine nature

- Outdoor recreation as part of the climate problem
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## How are climate change impacting mountaneering?

- **Glacial retreat and loss of summer ice and snow**
- **Increased tree line**
- **Shorter and «poorer» ski season**
- **Increased natural hazard risks**
- **Limited research on how this affected mountain tourism outside the ski industry**

▶ Climate change already affect many classic mountain routes in the Alps.

*Moreay et al. 2019.*

▶ Glacier tourism as «last chance tourism» – could signify affection for nature

*Lemieux et al. 2019; Halpenny 2010*

## Glacial retreat



Briksdalsbreen Glacier, Western Norway

- Ongoing loss of a tourist activity in Norway.
- Substituted with other [activities](#).
- Popular itineraries hampered due to glacial retreat and loss of snow fields

## Increased tree line

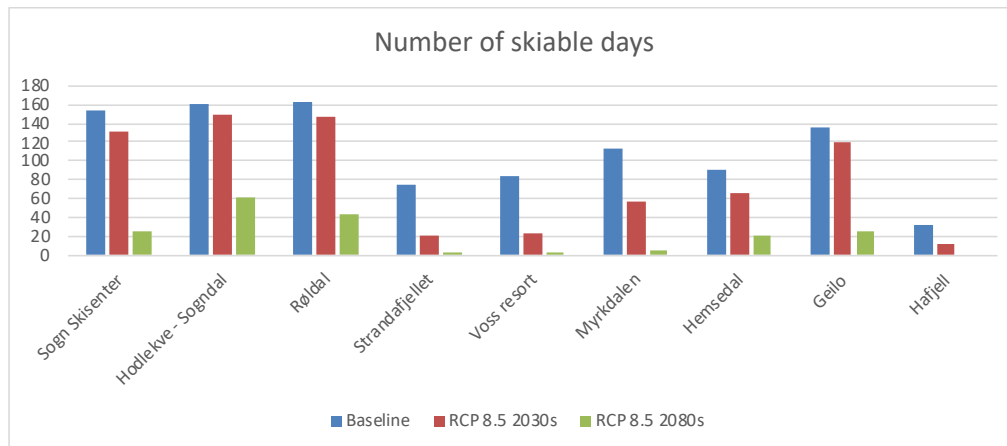
- Livestock grazing is the major determinant of the tree line, not climatic conditions.
- Threeline move upwards by **0,5-1 meters pr year**.
- Climate change will **accelerate** the forestation and hightening of threeline



*Foto: Kirstin Flynn Steinsvåg, Miljøfaglig Utredning*

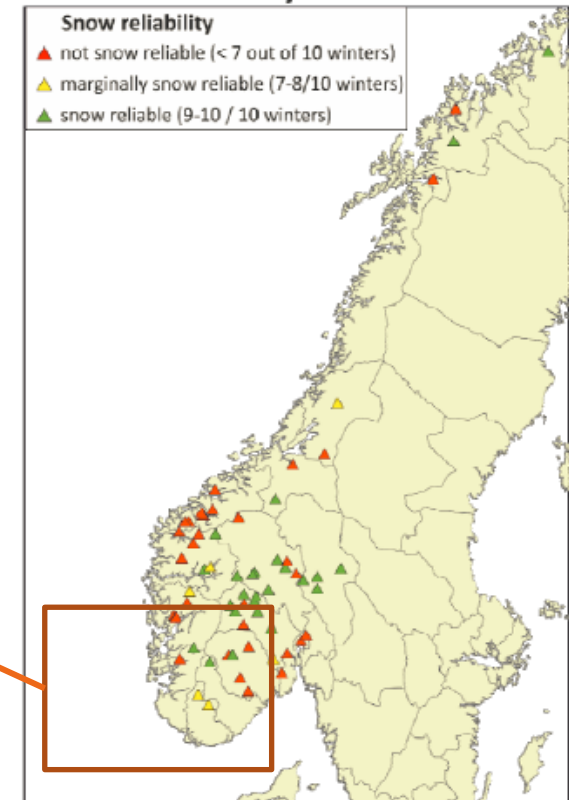
# Snow projections

## Skiable days without artificial snow



## With artificial snow 2080

100 day-season



Current Issues in Tourism

ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/doi/10.1080/13683500.2017.1368350>

Adaptive capacity of ski resorts in Western Norway  
to projected changes in snow conditions



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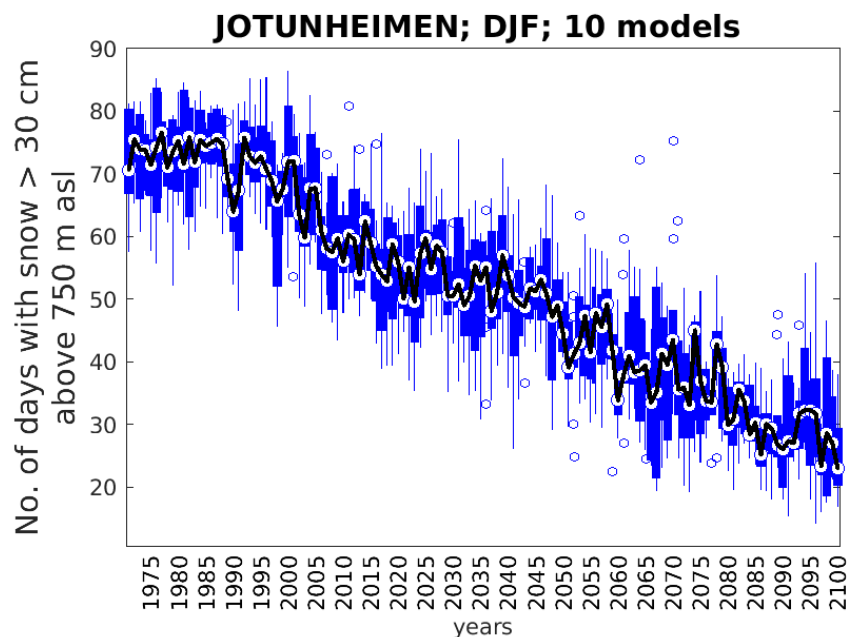
Climate change and the future of the Norwegian  
alpine ski industry



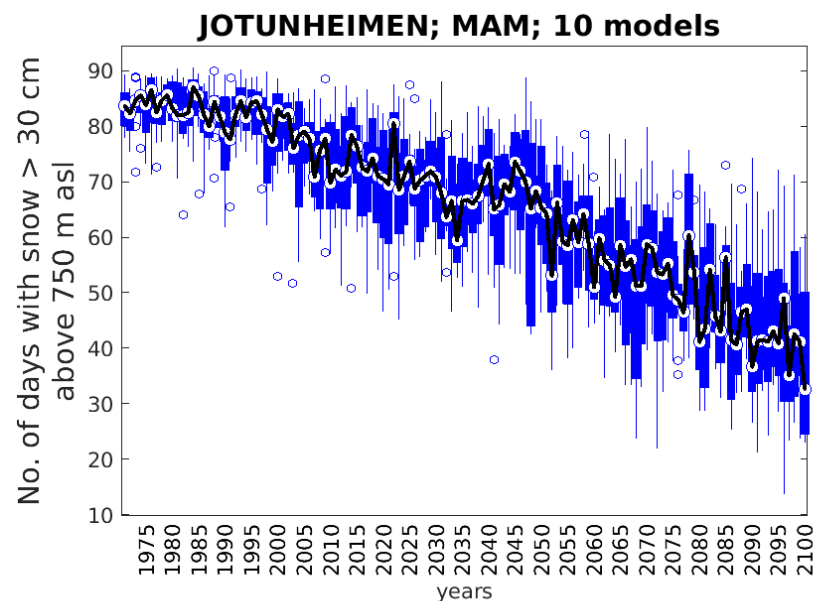
Steiger et al, 2017

# Jotunheimen – Days with >30 cm snow above 750 m altitude.

Dec-Feb



March-May



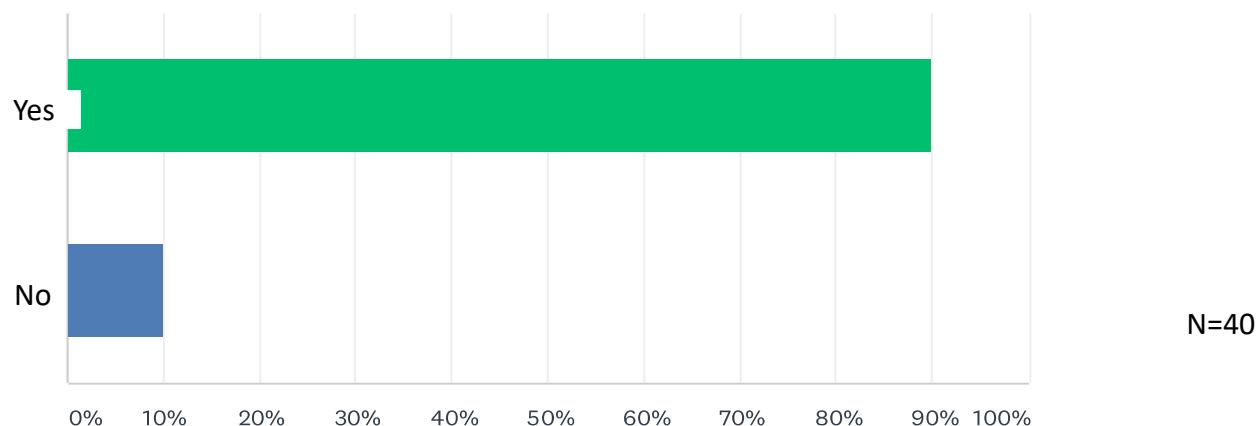
(høyt utslippsscenario, verden rundt 4°C varmere)



## What hikers have observed of climate change impacts in Jotunheimen

Changes in the extent of glaciers and snow-covered areas during summertime	58
Change in the vegetation? (overgrowing, change in treeline etc)	47
Change in the amount or intensity of precipitation (rain / snow)	33
Change in snow conditions (amount / length of season etc.)	32
Change in summer / fall temperatures	29
Change in trail quality, which is not due to facilitation (quality / wear / erosion etc)	27
Change in animal-/ bird- / insect- life (diversity in species / numbers)	14
Changes in huntable species (small game / big game)	12
Change in wind conditions (frequency / strength etc)	11
Changes in streams / rivers (flow / flood etc)	11
Change in winter temperature?	9
Change in perception of risk / safety when travelling in mountain areas	8
Changes in the incidence and type of avalanches or landslides	6
Change in the amounts of wild berries and mushrooms	3
Change in freshwater fish stocks	1
Other changes?	2

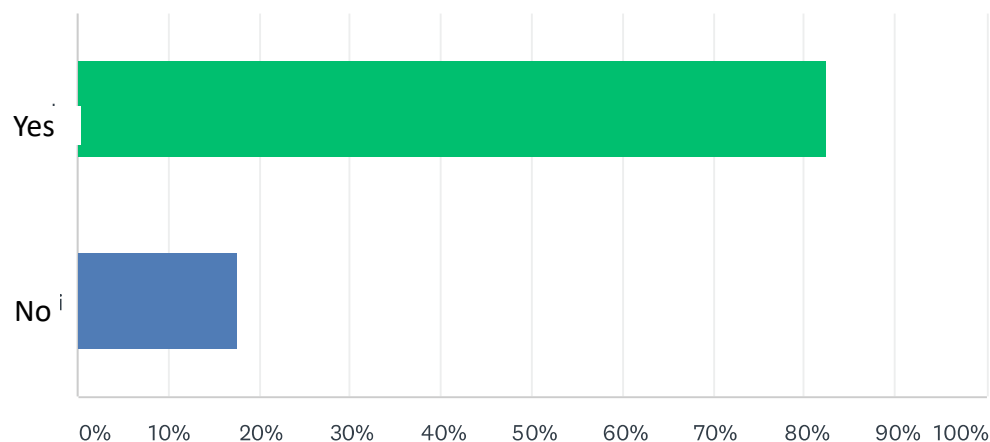
## Survey to mountain guides: Do you have to do things differently due to lack of snow and ice in summer?



*«It has major impact for all of us involved in glacier guiding. We need to think completely different about product development.»*

*«For the last 2 years there has been little snow on the glacier arms where I have worked as both guide and instructor on glacier courses. There have also been clear changes down in the glacier fall where the glacier has remarkably become thinner and the cracks available for blue-ice guiding and the theme around this have disappeared, which has meant that the plans for guided tours have had to be changed»*

## Do clients react to cryosphere change?



*«They get upset when they see the extent of glacial retreat»*

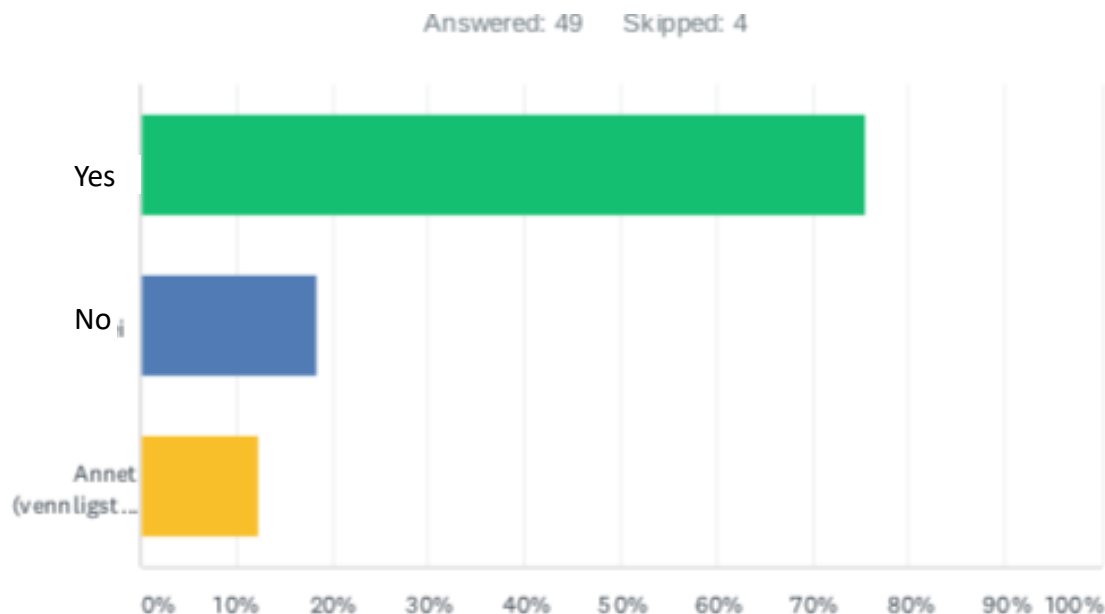


*«Most clients know that a changing climate leads to shrinking glaciers, and find that it is a negative development»*



## Would you book if bad weather gets more frequent?

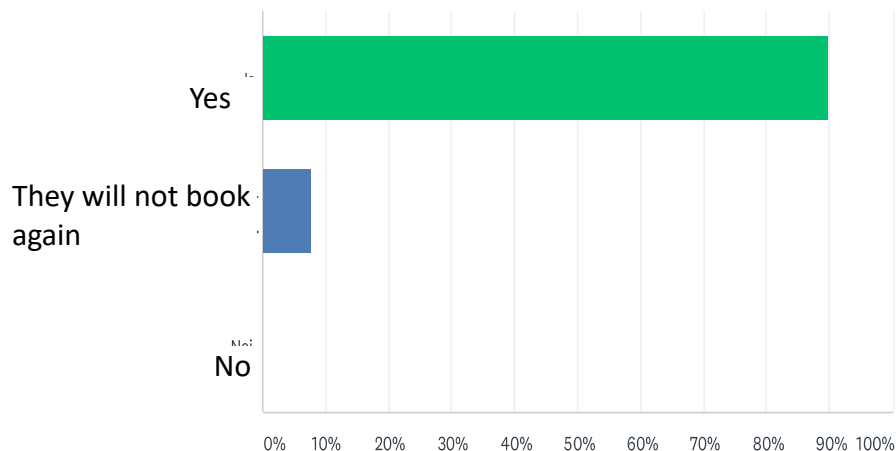
«Would you still book a climb of «Store Skagastølstind» or «Romsdalshorn» if the occurrence of bad weather days increases with 30%



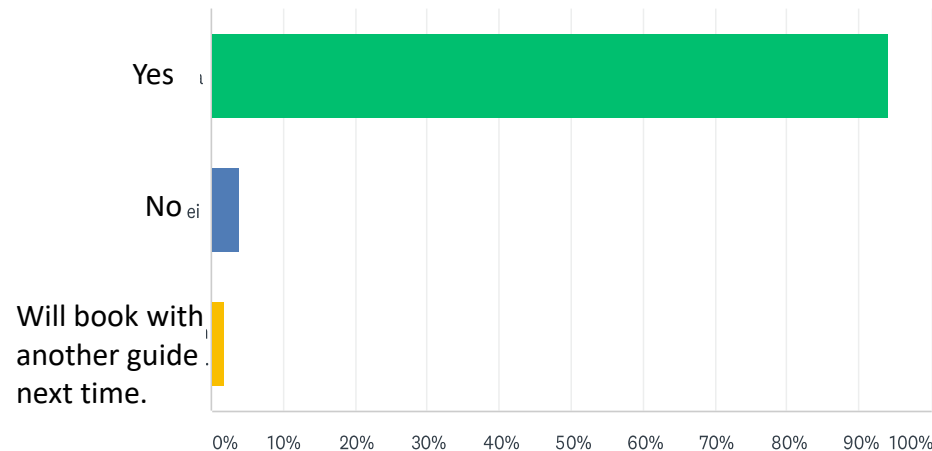
## Adaptive capacity of mountain guiding from survey

Survey to **guides**: Do clients accept change of plans due to challenging weather or snow conditions?

Survey to **clients**: Do you find it OK to change the objective of your tour due to challenging weather or snow condition?



N= 40



N= 70

## Impacts and adaptations – mountain guides

- Guides and their clients are flexible – high adaptive capacity
- Guides fear that increase in bad weather over several years in a row would decrease demand
- Loss of suitable glaciers for guiding is severely threatening glacier guiding as a tourist activity.

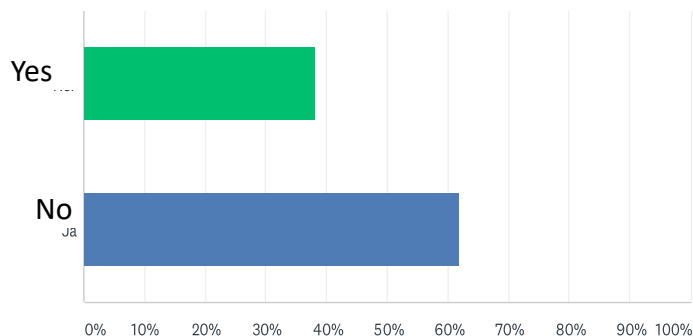


Foto: Halvor Dannevig

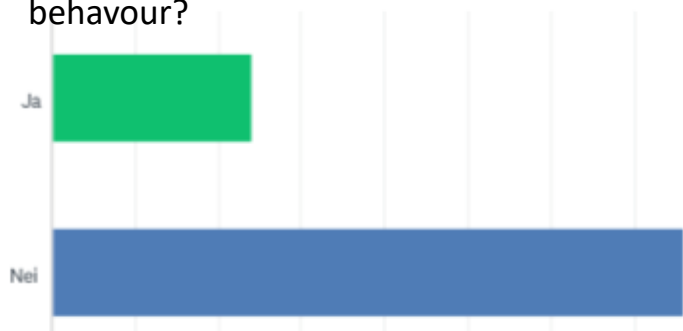
## Does being with mountain guides influence clients environmental behaviour ?

«Does your interest in outdoor recreation affect your behaviour in relation to making pro-environmental choices? For example dietary choices, ways of travel, purchase of equipment?

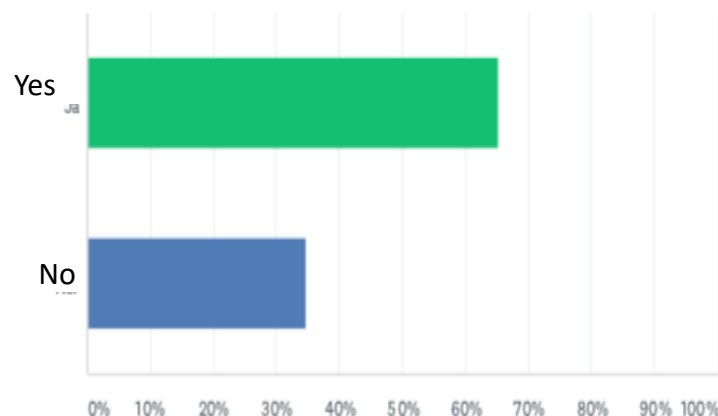
N=71



Have your experience with guided trips had an affect on your behaviour?



Have you experienced that the guide has shared his thoughts on sustainability and climate change?



«We talked about how we travel, to leave no trace, and visible climate change impact during the trip»

«When you see what is happening your awareness is raised and you try to take care»

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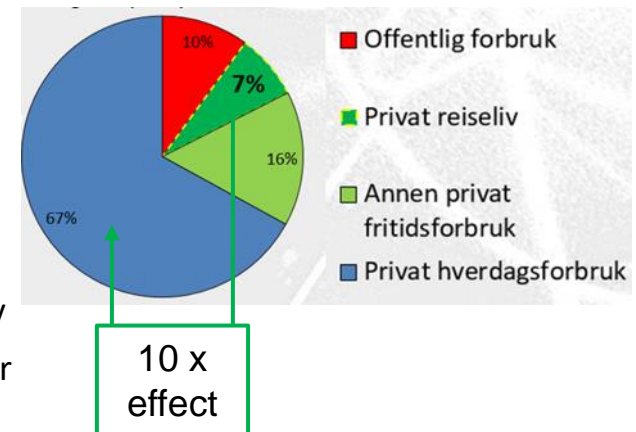


## Two competing hypothesis on the relationship between outdoor recreation and sustainability

- **More outdoor recreation will lead to more environmental pressure**
  - ▶ Directly:
  - ▶ During leisure time people take time “off” from their environmental attitudes → unsustainable consumption
  - ▶ Indirectly:
  - ▶ → learning less sustainable consumption habits → into everyday consumption
- **More outdoor recreation will lead to less environmental pressure**
  - ▶ Directly
  - ▶ → less working time → less income → less consumption
  - ▶ Indirectly:
  - ▶ → more fond of nature → more support for an ambitious environmental policy
  - ▶ → learning sustainable consumption habits → brought back into everyday consumption

# Outdoor recreation as a learning-arena for sustainable lifestyles

- **What if we – during our vacation time – is particularly open to pick up new values and practices**
  - ▶ Norwegians learned to like yoghurt during holliday....
- **10 x effect**
  - ▶ If a tourism consumer brings back home a more climate friendly practise the climate effect can in theory be multiplied by a factor 10
- **For this to happen.....**
  - ▶ The tourism industry have to be a societal front-runner in climate friendly practice
  - ▶ The tourism industry must include «sustainability training» of their costumers as part of their product
  - ▶ The government must facilitate that a more climate friendly practice can be implemented



## Relevant literature

- Aall, C. (2011): The Energy Use of Leisure consumption in Norway: Analysis and Reduction Strategy, *Journal of Sustainable Tourism*, Vol. 19, No. 6, 729–745
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# Thanks for listening!

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