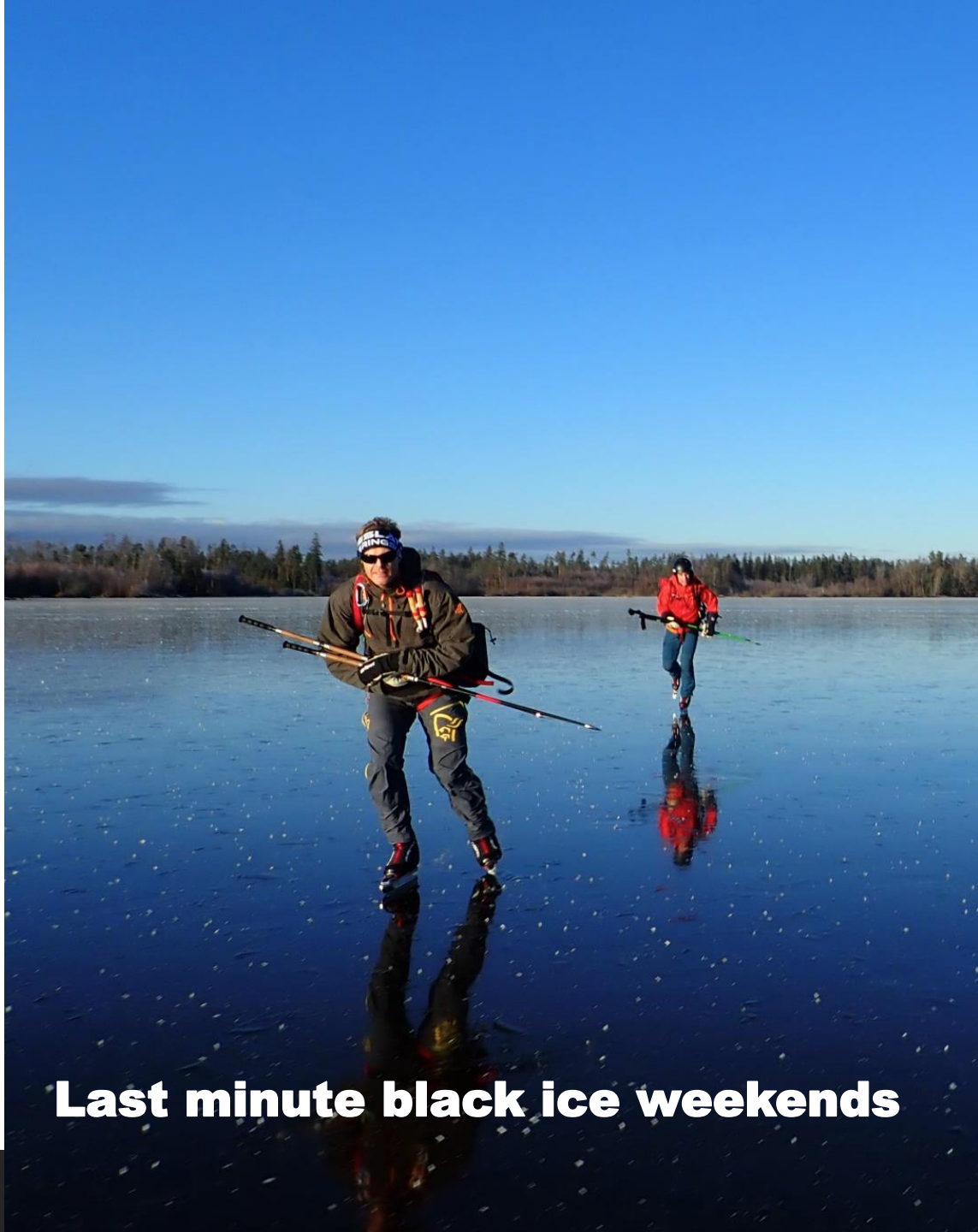




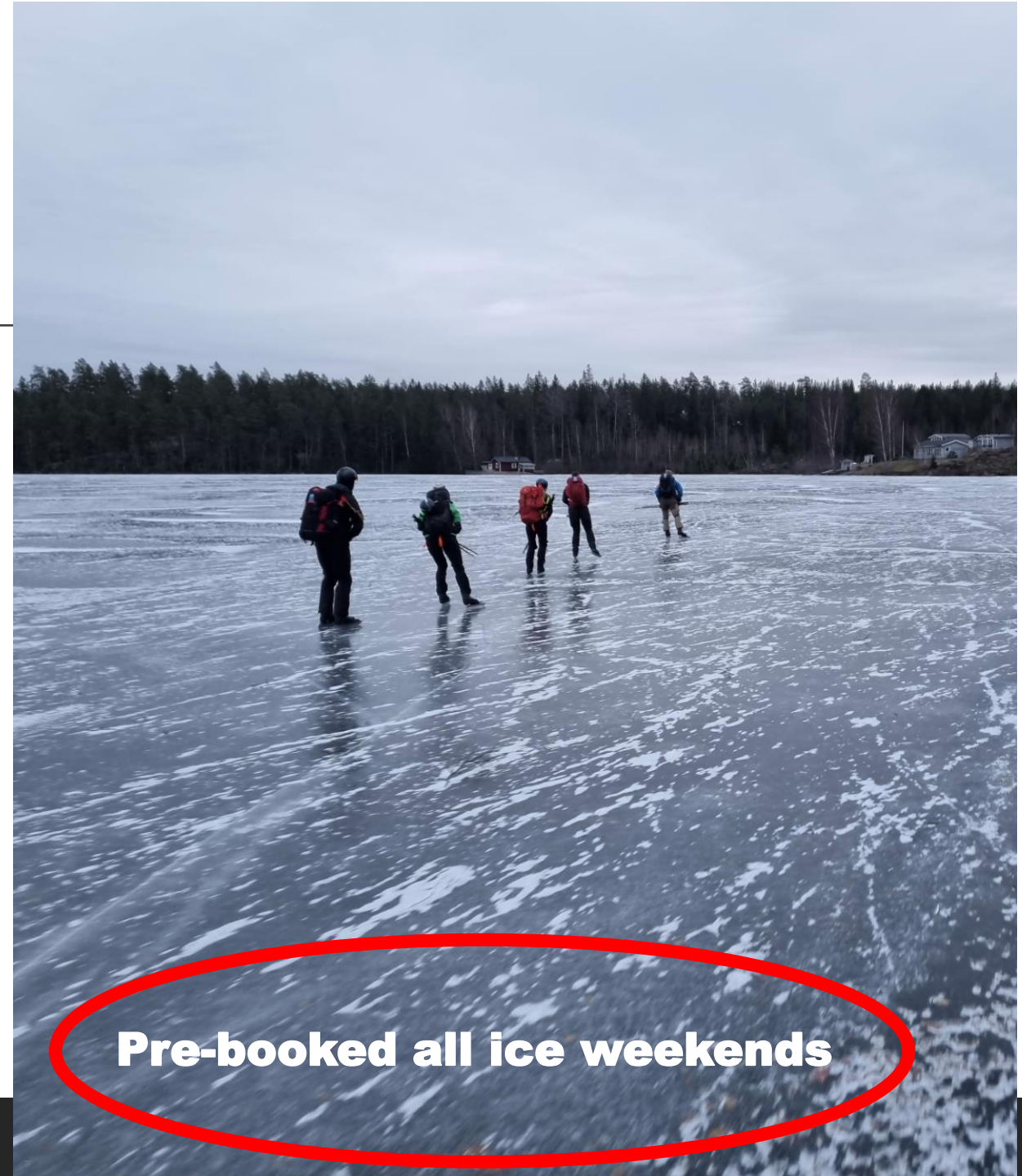
# Finding ice yourself

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THE FUTURE OF NORDIC SKATING



**Last minute black ice weekends**



**Pre-booked all ice weekends**



# Pre-booked skating trip

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Arrange all needed preconditions up-front (**ASAP**)

- Group members, decision process and risk assessment
- Tasks, roles and responsibilities for each participant
- Equipment check, maps to use, testing apps, and so on
- Transportation, internet, logistics, finance and more



Decide where to go at the last moment (**ALAP**)





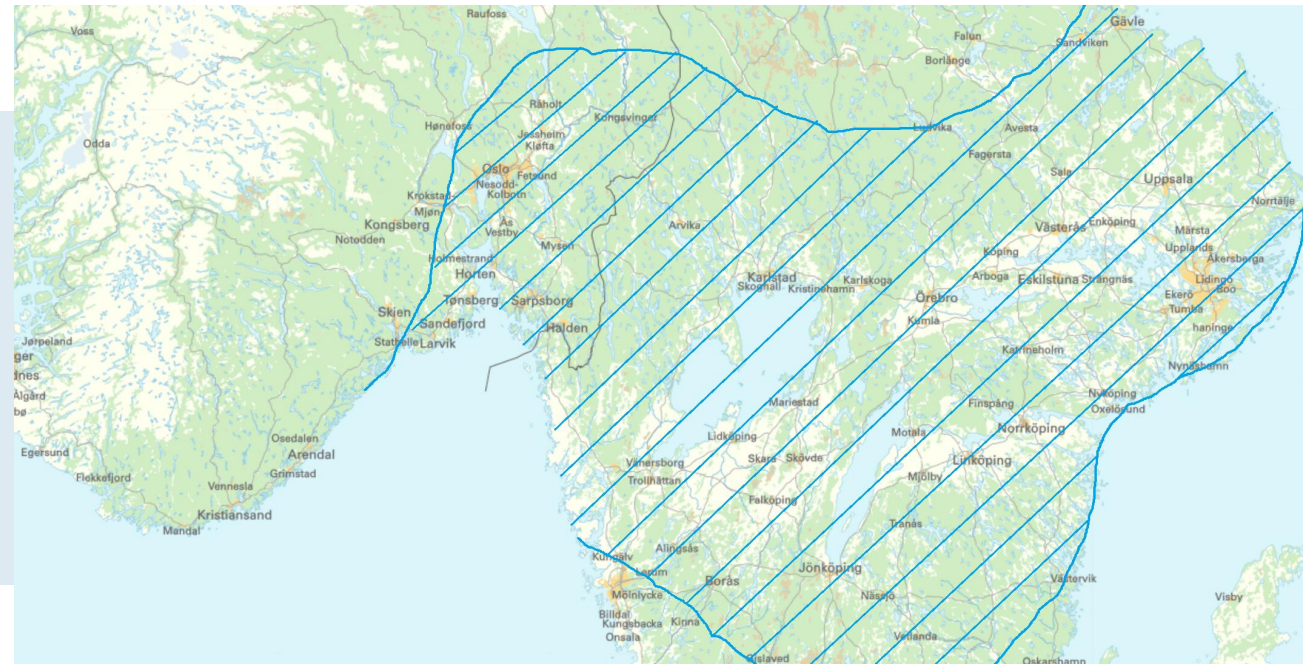




# Ice guarantee for fixed date, flexible location weekend trips

Out of last 100 RobM weekend trips:

	#
● Väl åkbar	42
● Åkbar	48
● Med tvekan åkbar	6
● Oåkbar	4
● Okänd	0
	100



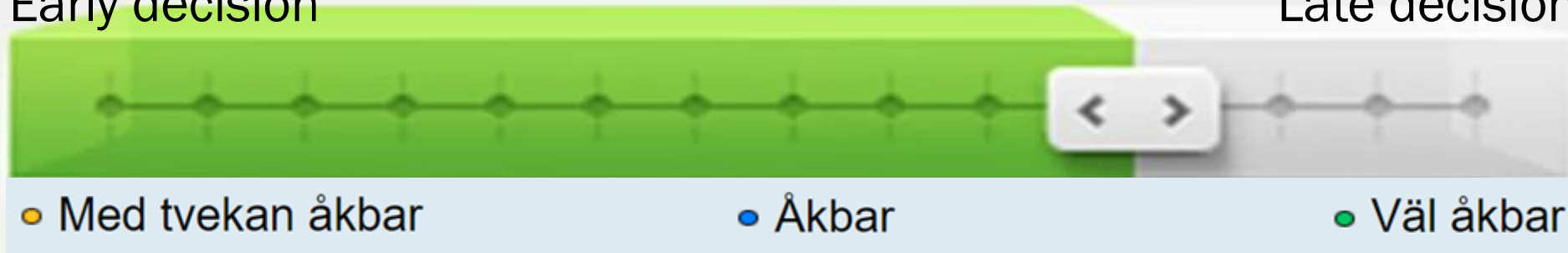
A weekend trip counts as väl åkbar when at least 2 out of 4 skating days received at least one green dot

# Freedom of movement is key

---

Early decision

Late decision



## Examples that lower your chances

We fly to Stockholm

We will use stuga of a friend

We book vandrarhem for four days

## Examples that increase your chances

We drive and decide at Hborg: E6 or E4?

We do not make appointments up front

Vandrarhem booking after skating

**Which lake to choose  
for tomorrow?**



**Lots of decision factors in  
your toolbox**

Skridsko  
nätet

Weather  
forecast

Water  
temps

Ice  
history

Micro  
climates

Weather  
patterns

Weather  
actuals

Altitudes  
of lakes

Social  
media

Contact  
persons

Skate  
and test

Stöp  
speed

Depths  
of lakes

Freezing  
orders

Winters  
history

Marine  
traffic

Sea info  
services

Shape  
of lakes

Water  
flows


Satellite  
pictures

Weather  
influence  
on ice



Skate  
and  
test





## Skate and test

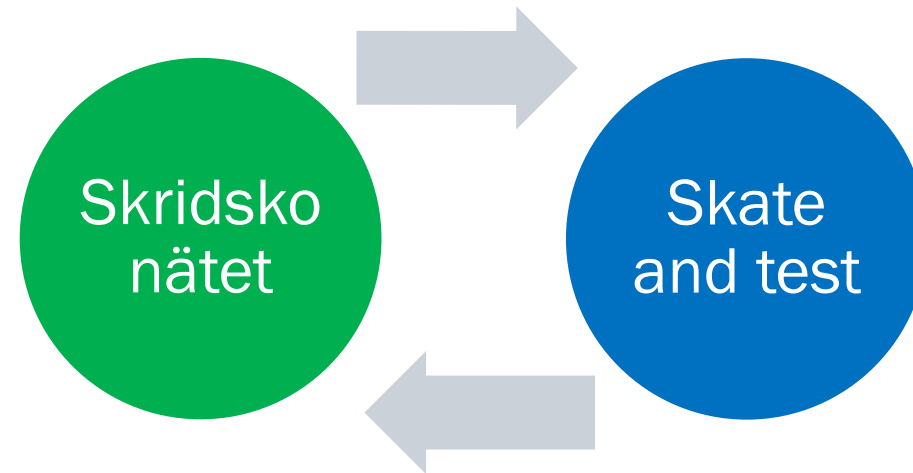
Driving to Sweden and picking a lake without information gathering is what some of us did pre-HLSK and pre-Skridskonät. It can work, but chances to find skateable ice are pretty low. In the south of Sweden, lakes are open. If you drive further north or come on higher altitudes, lakes are covered with snow. The sweet spot where ice is **strong, smooth, solid and snow free** is almost always there, but usually small.

# Finding skateable ice

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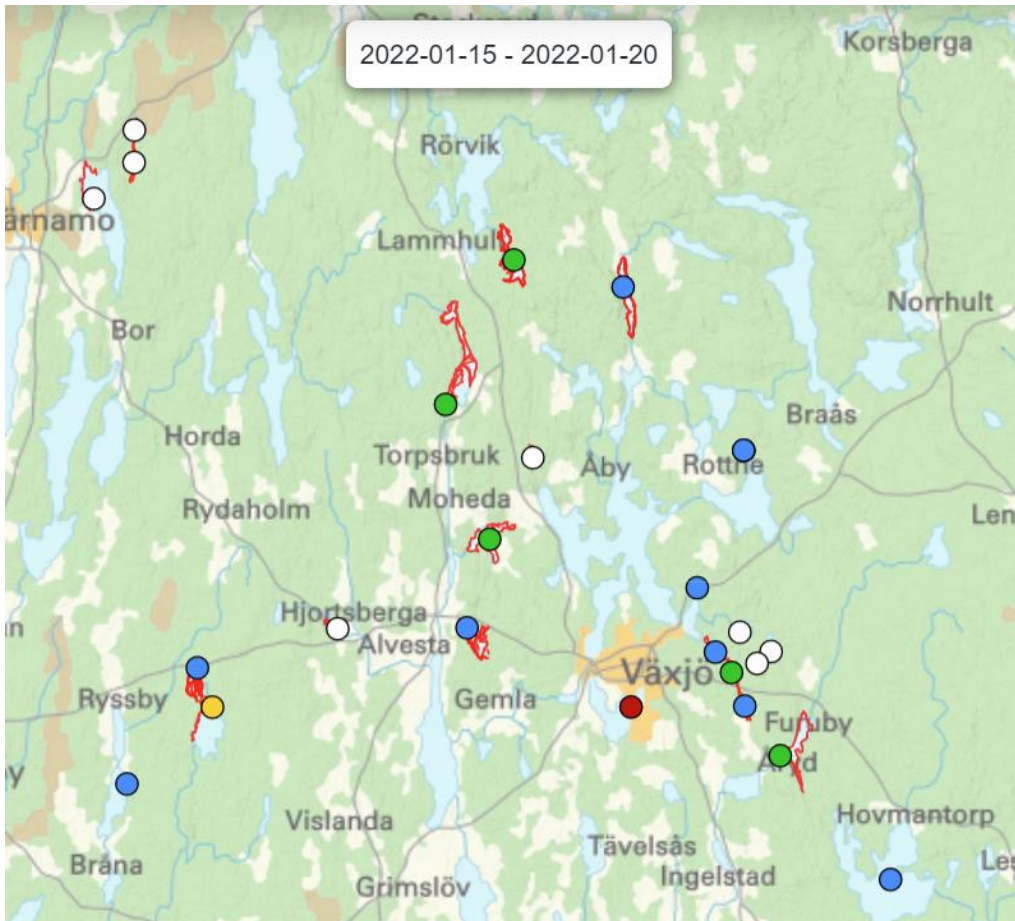
- ❑ Choose a level in which you feel comfortable (today we discuss level 1 to 5)
- ❑ Basic level is using isobs, färdrapporter and färdspår on Skridskonätet
- ❑ From there, you add decision factors for more complex situations







# Using Skridskonät



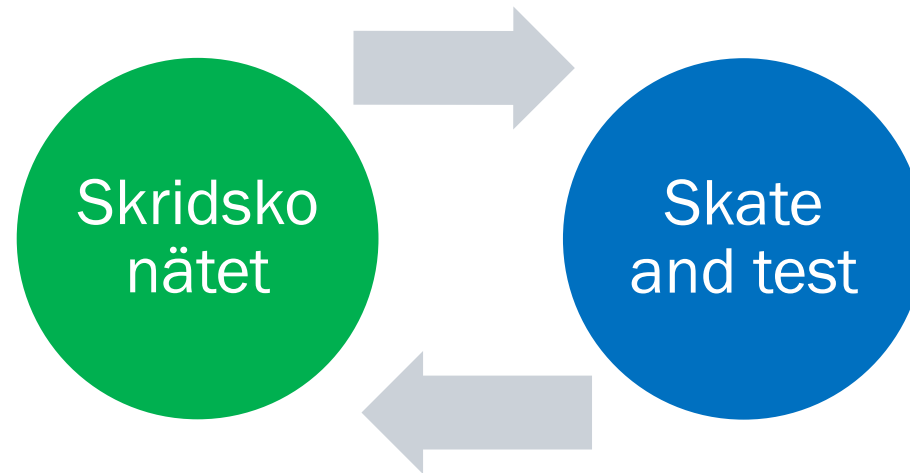
- |                    |                    |
|--------------------|--------------------|
| ● Väl åkbar        | ● Well skateable   |
| ● Åkbar            | ● Skateable        |
| ● Med tvekan åkbar | ● Barely skateable |
| ● Oåkbar           | ● Not skateable    |
| ● Okänd            | ● Unknown          |



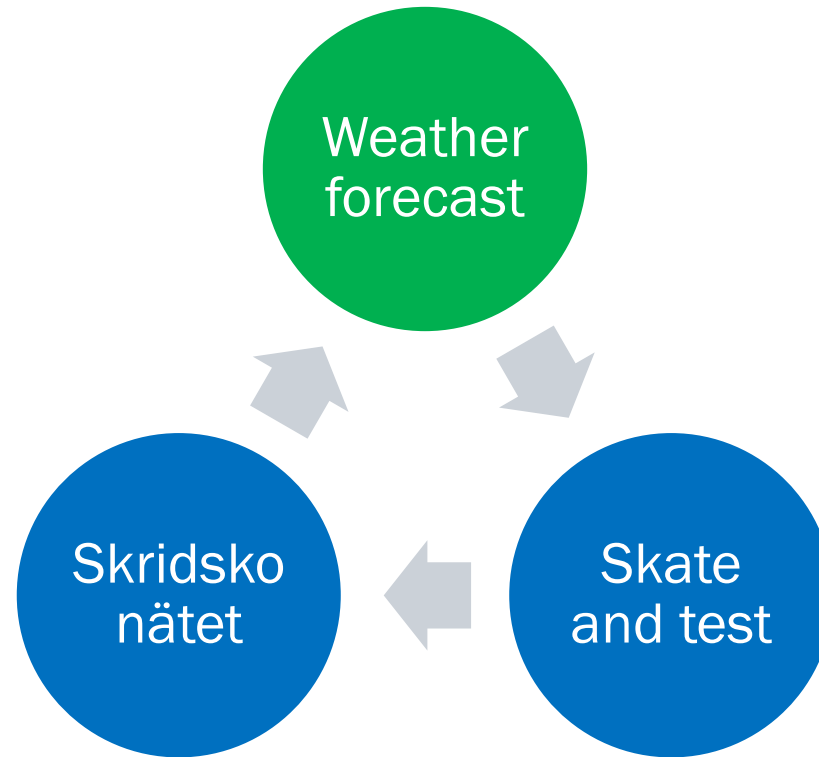
= tour report (färdrapport) without ice observations



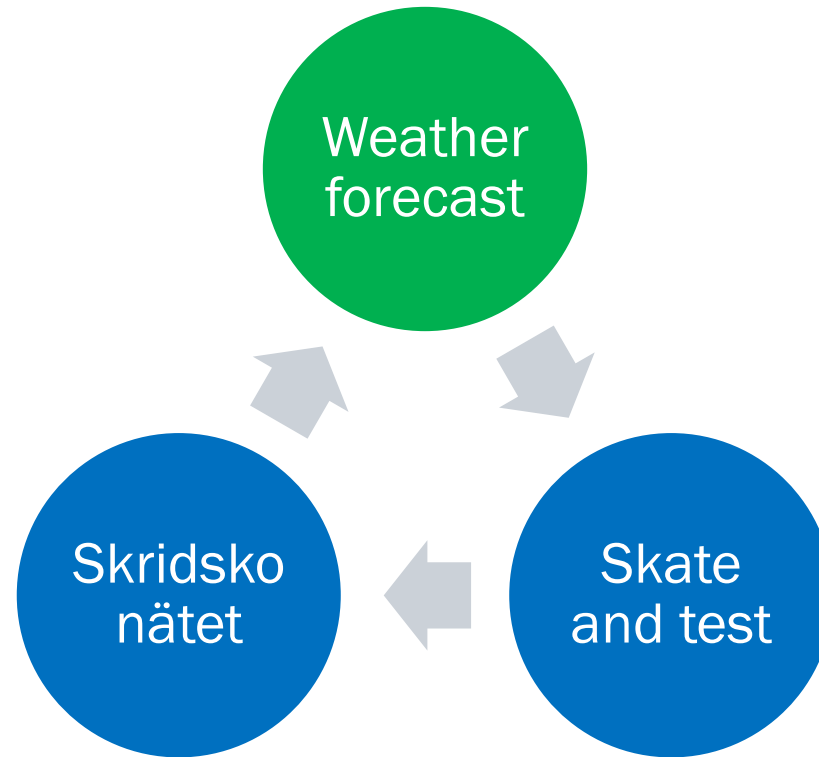
= GPS-track (färdspår)



By using Skridskonät before you decide which lake to skate tomorrow, your chance to find skateable ice increases a lot. This level might be the best to start when you are new to this.







Using the weather forecast as extra factor can be helpful. But without knowing what the effect of weather on ice is, using it might do more harm than good. The most obvious example is that people tend to choose the coldest area they can reach, while they in fact need warm weather to smoothen existing ice.

# Using the weather forecast

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- ☐ First question to ask yourself: do I look for new ice (kärnis) or old ice (stöpis)?
- ☐ Second question: is the ice already skateable or does it need a change to become skateable?

# Kärnis (new ice, black)

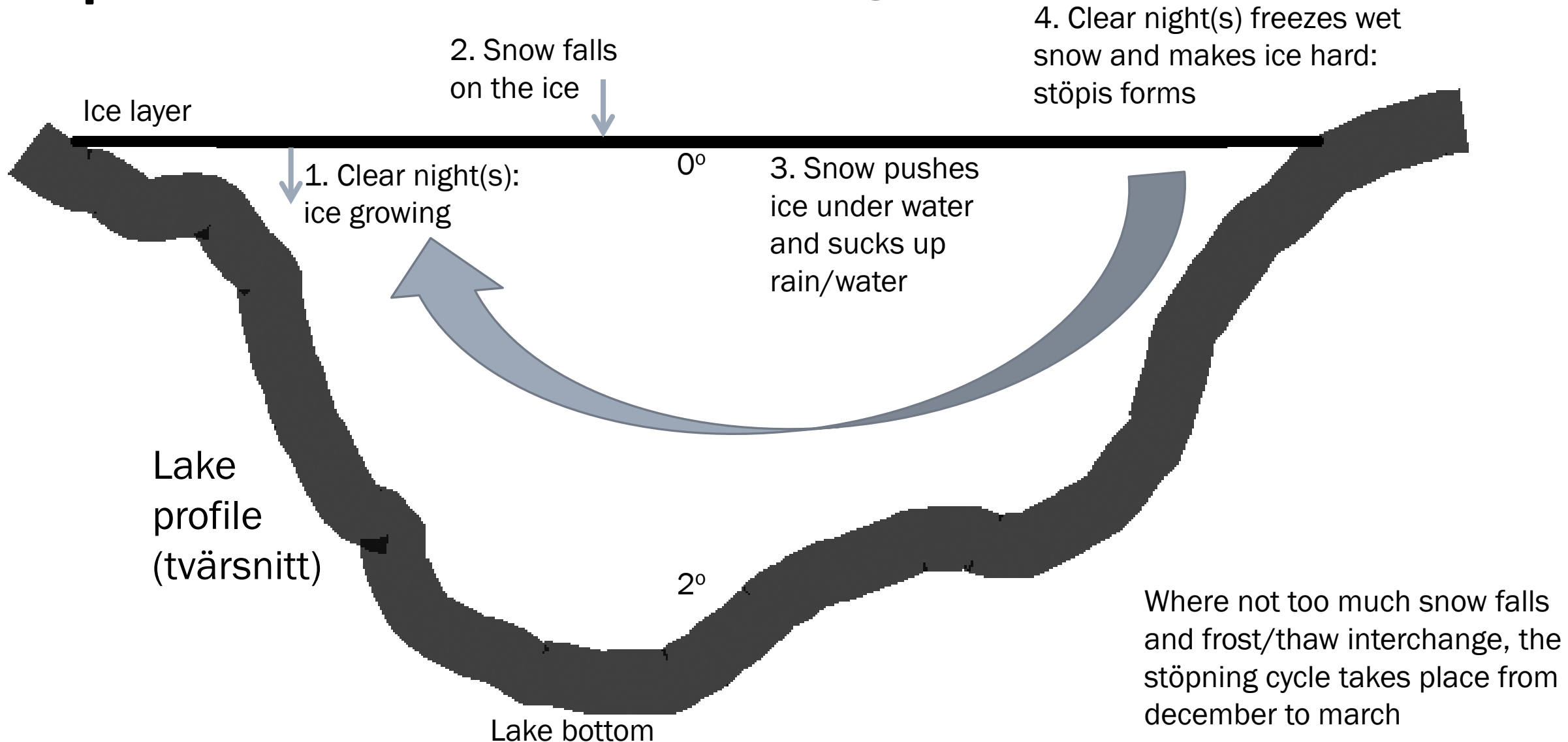


For kärnis to be created on a lake:

- The whole column of water needs to be colder than  $4^{\circ}$  Celsius and the upper layer needs to cool down to  $0^{\circ}$
- The  $0^{\circ}$  upper layer of water needs to let energy go again, as much as is needed to cool water of  $80^{\circ}$  down to  $0^{\circ}$  degrees
- The sky must be clear, because heat radiation to space lets twice as much energy go compared to low air temperature and/or water evaporation
- The wind must be low to restrict the movement in the water when the first ice crystals appear



# Stöpis (old ice with frozen snow on top, grey)





**Stöpis in  
the making**

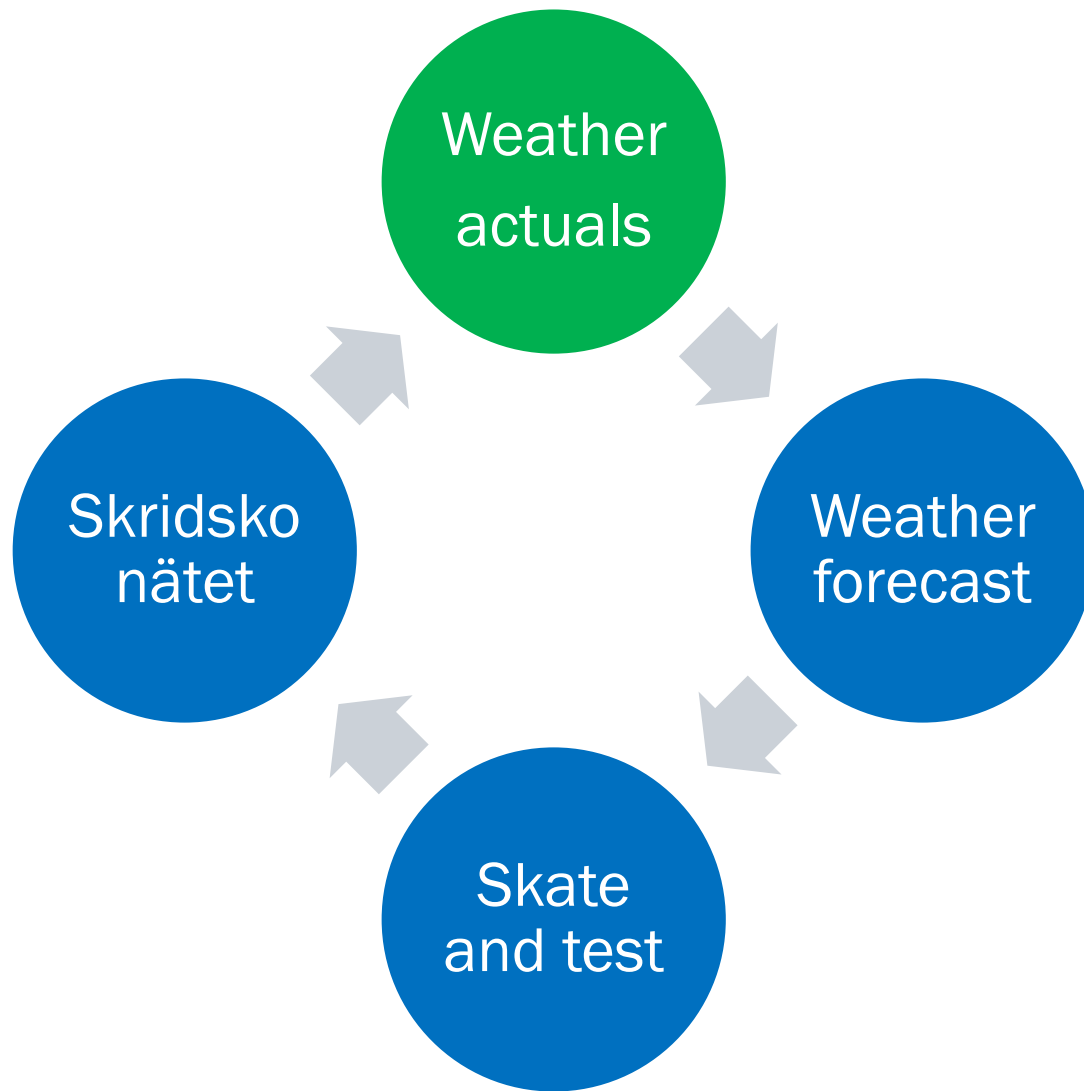
Which weather to look for?	New ice (kärnis)	Old ice (stöpis)
Already skateable	Light frost, no snow, stable weather	Light frost, no snow, stable weather
Not skateable yet <ul style="list-style-type: none"><li>• new ice too thin</li><li>• old ice under snow</li></ul>	Moderate to severe frost = clear night(s), dry air, low temp	Cloudy + warm + rain first, then clear sky

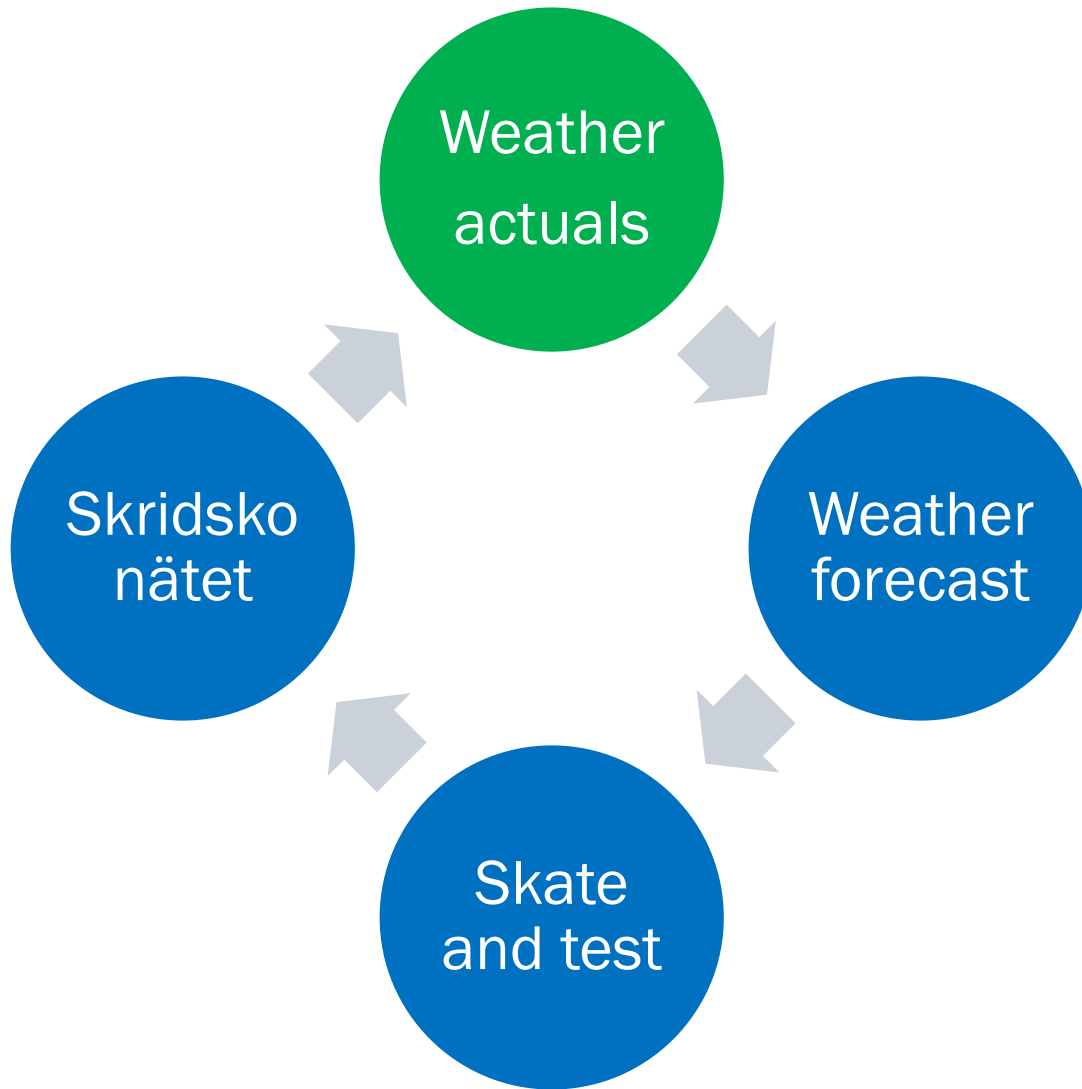
# Weather forecast

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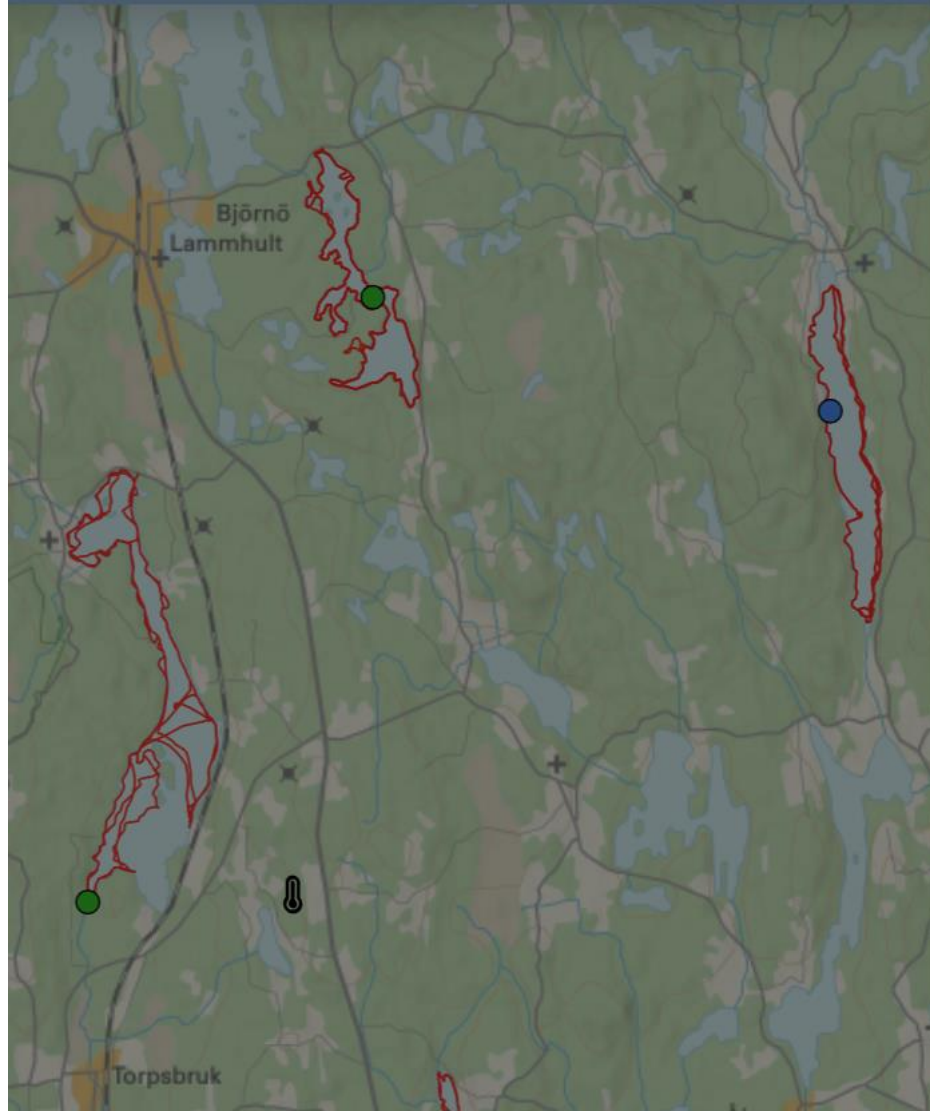
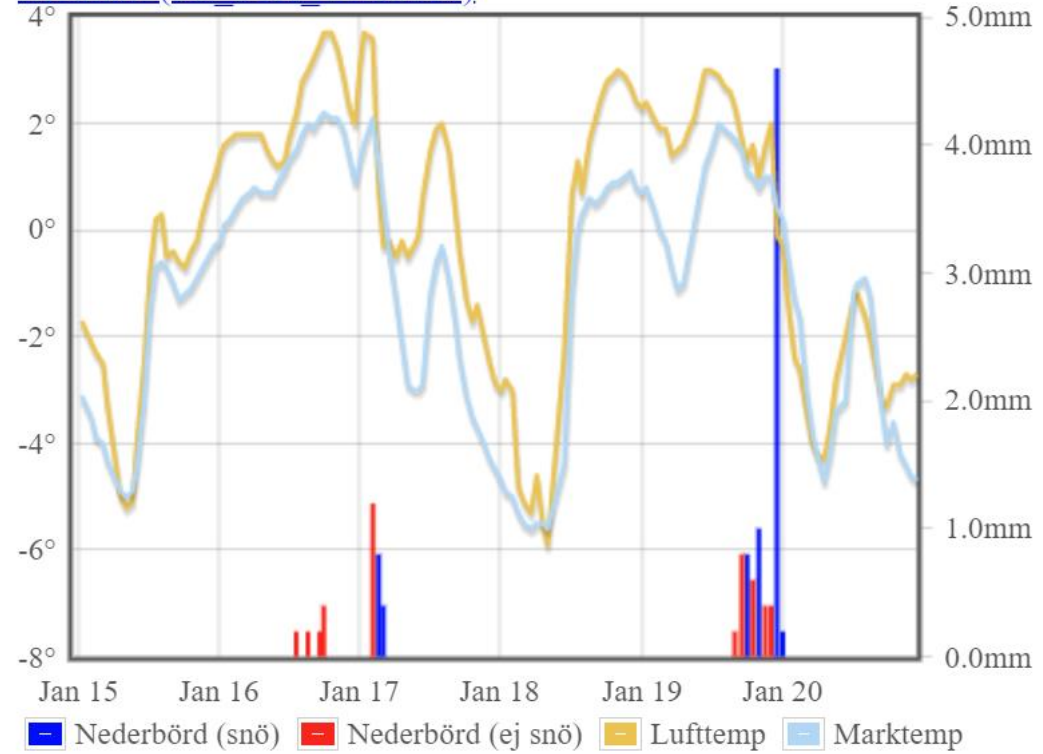
- Over-estimated, waste of time to spend hours on forecast
- SMHI and YR show only one scenario out of 50 (!) possible scenarios
- Using weather actuals increases your success rate significantly







**By shifting your attention from weather forecast to weather actuals, on average you skate on better ice.**

 ReportBredhult (SE\_STA\_VVIS710)

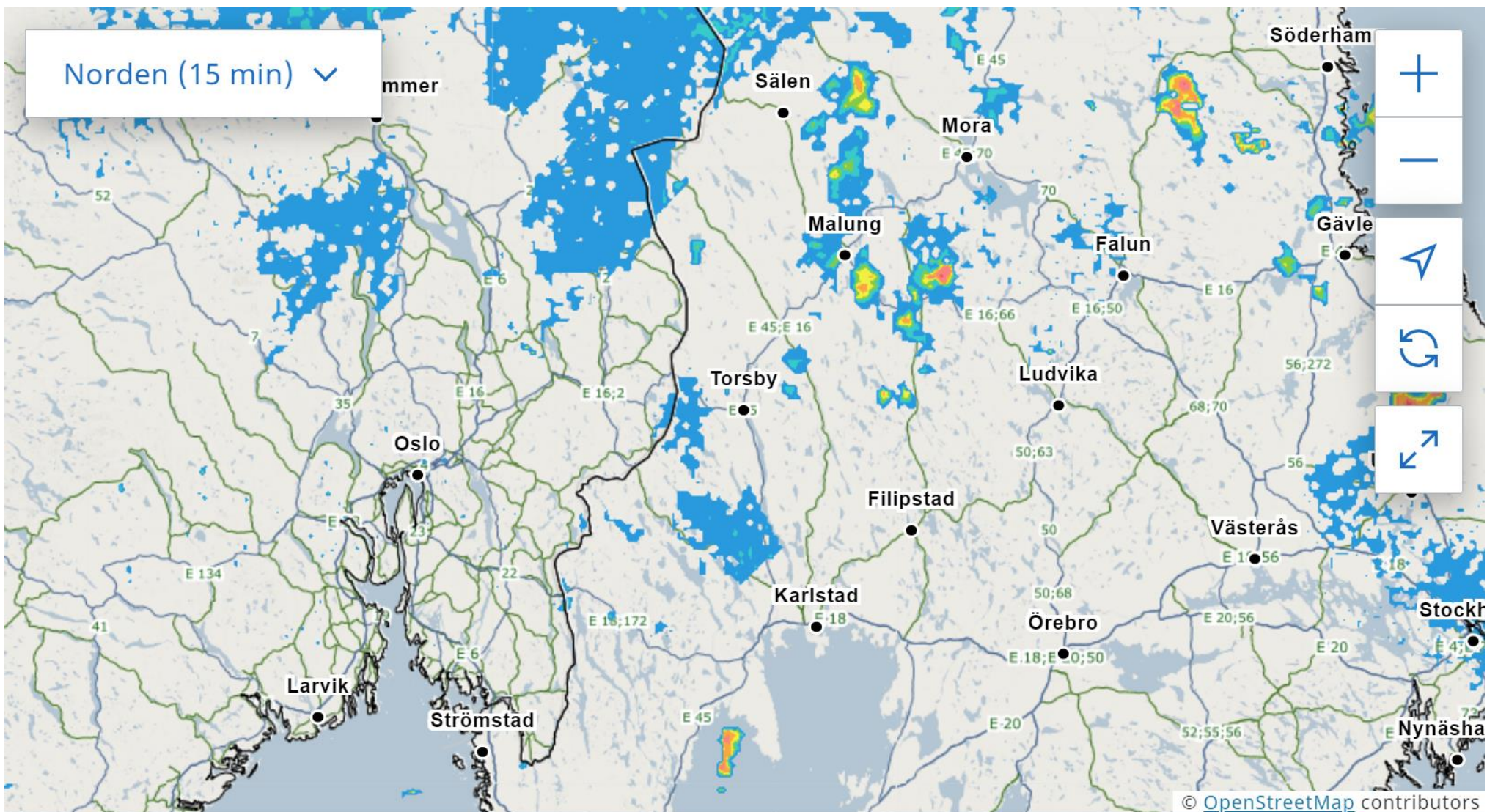
(Antal mm snö i osmält form)

[Data från Trafikverket](#)

OK



Norden (15 min) ▾

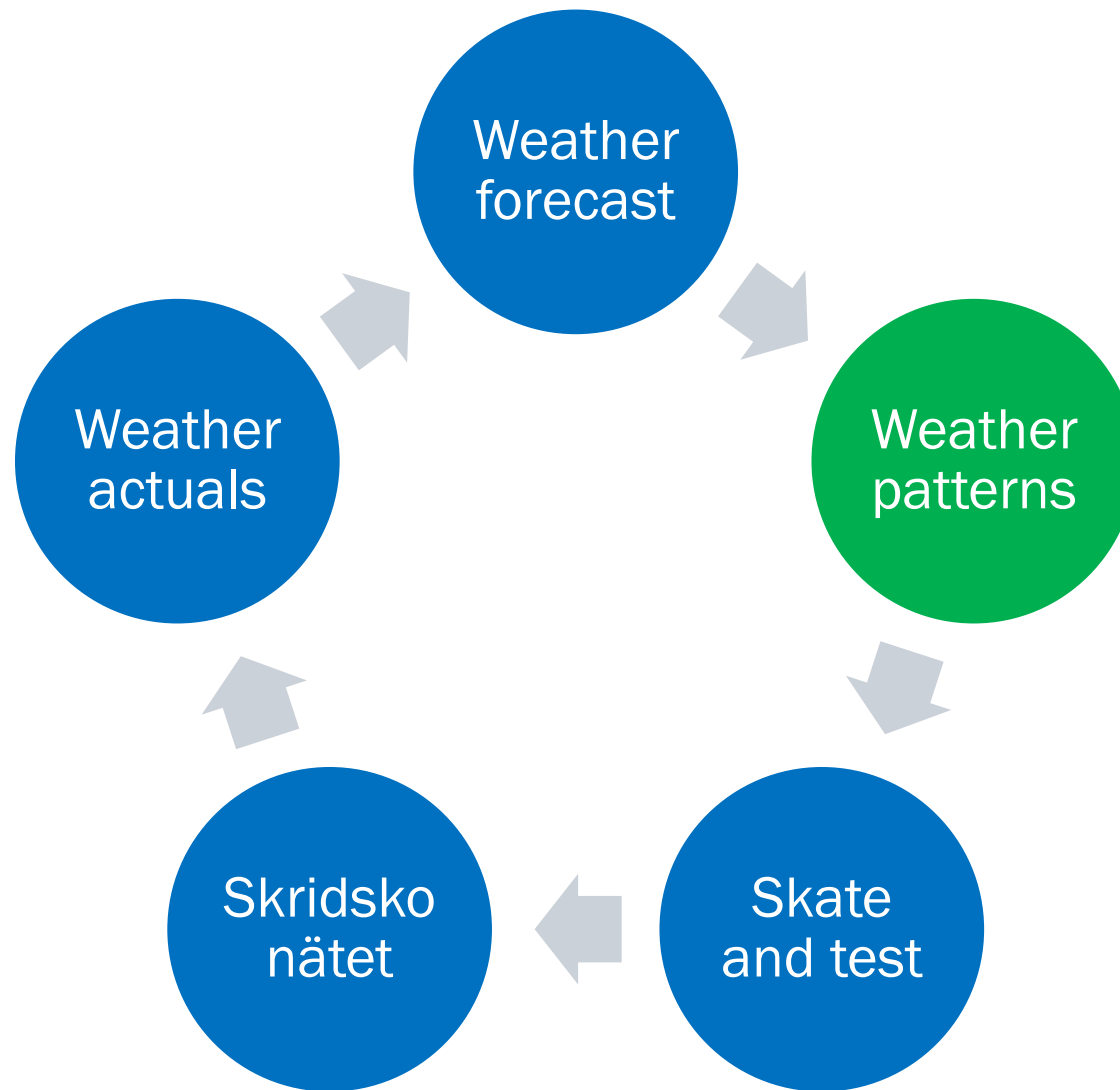


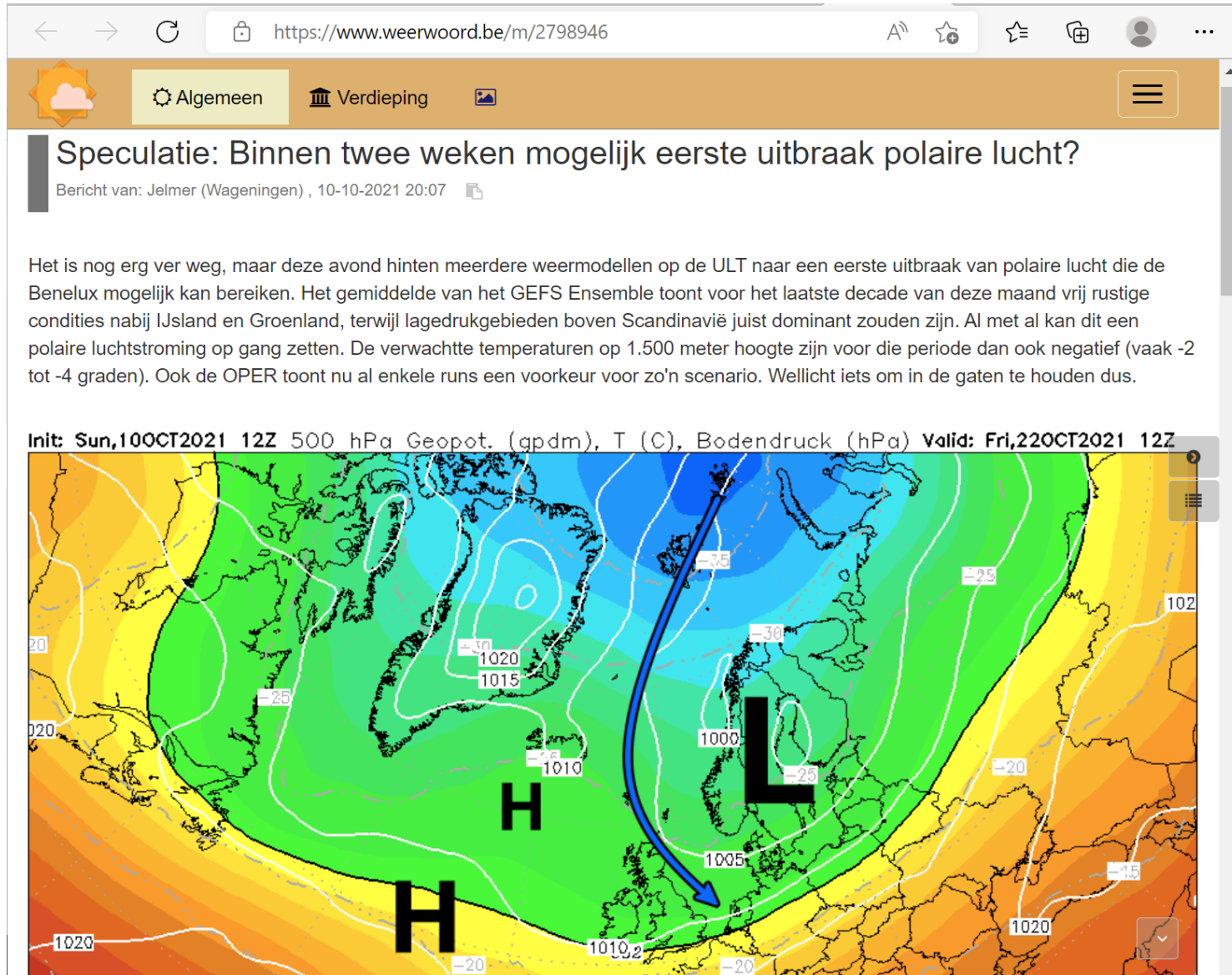
Torsdag 19.30

Ons

Tor



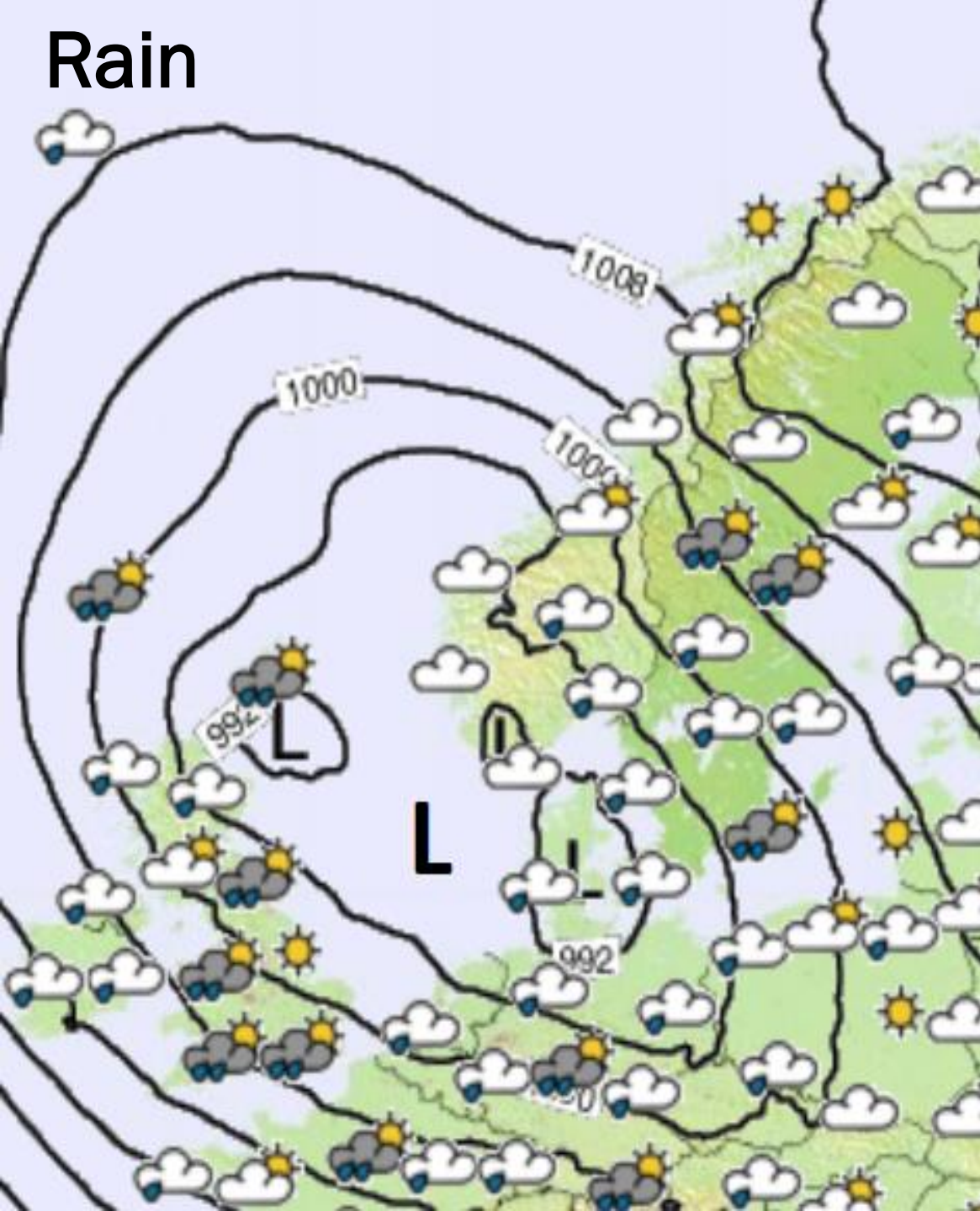




For understanding (winter) weather patterns, following the site [www.weerwoord.be](https://www.weerwoord.be) helps!

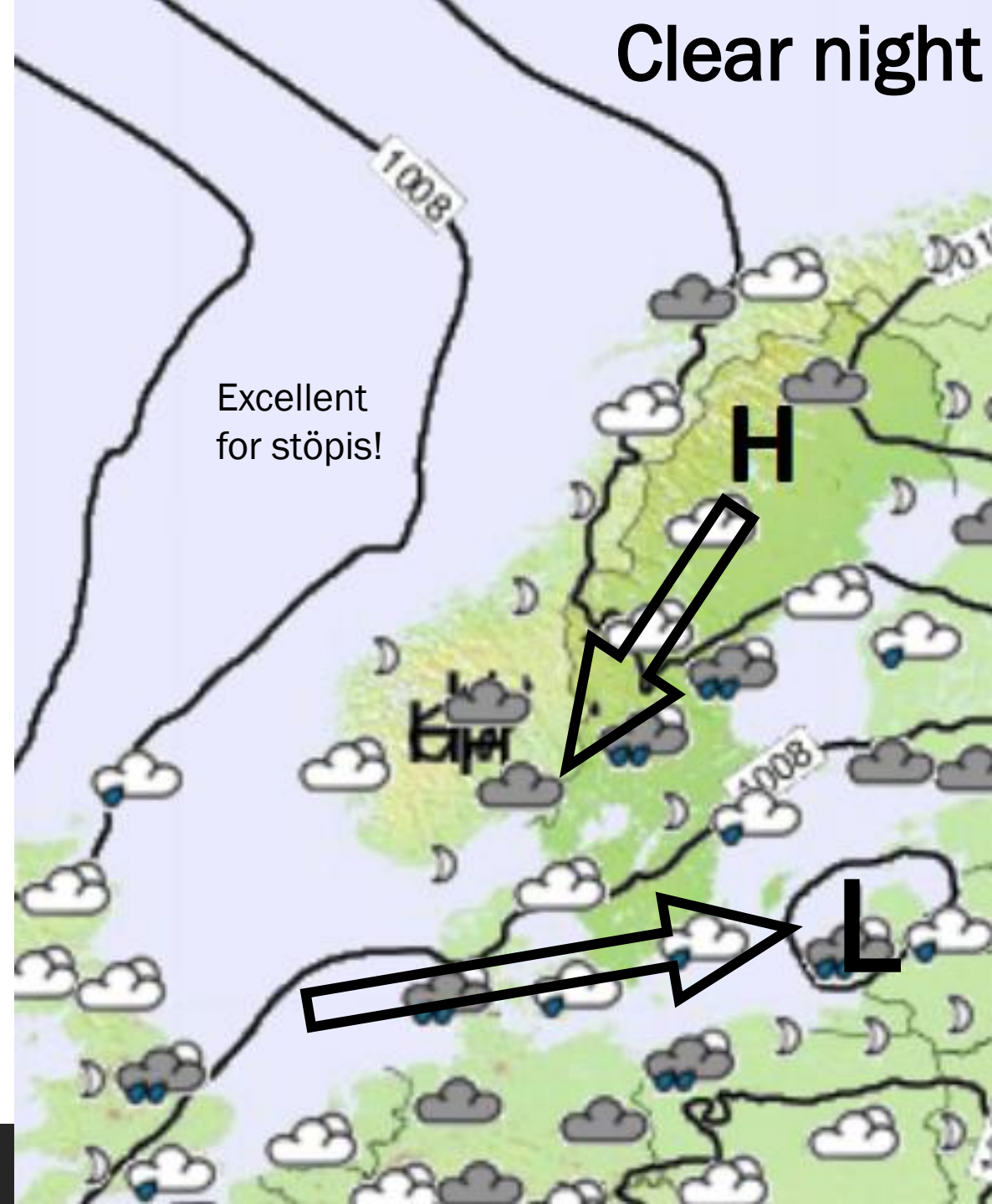
Lots of weather freaks are there, explaining what happens on a global level.

Rain

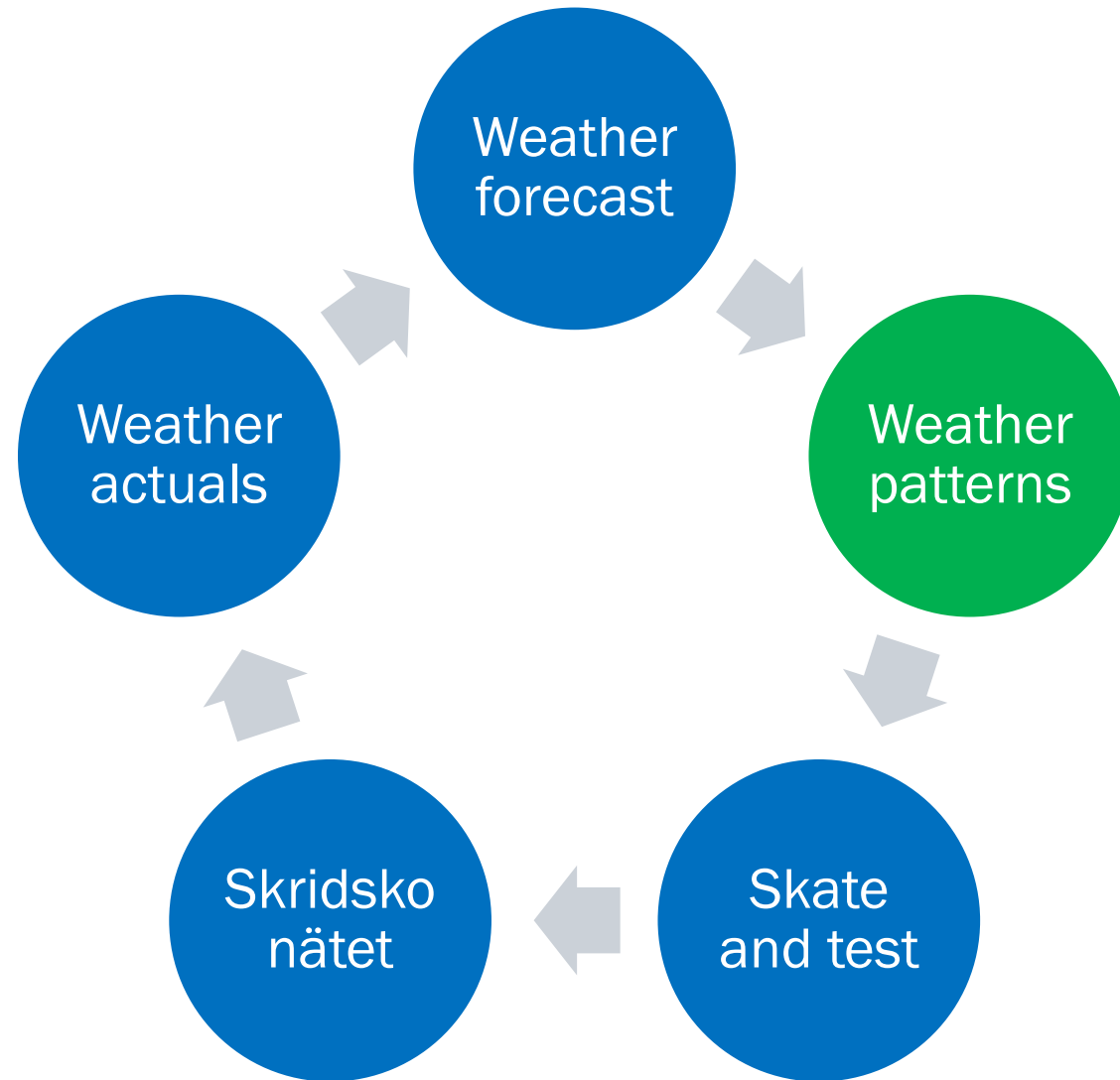


F  
O  
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B  
Y

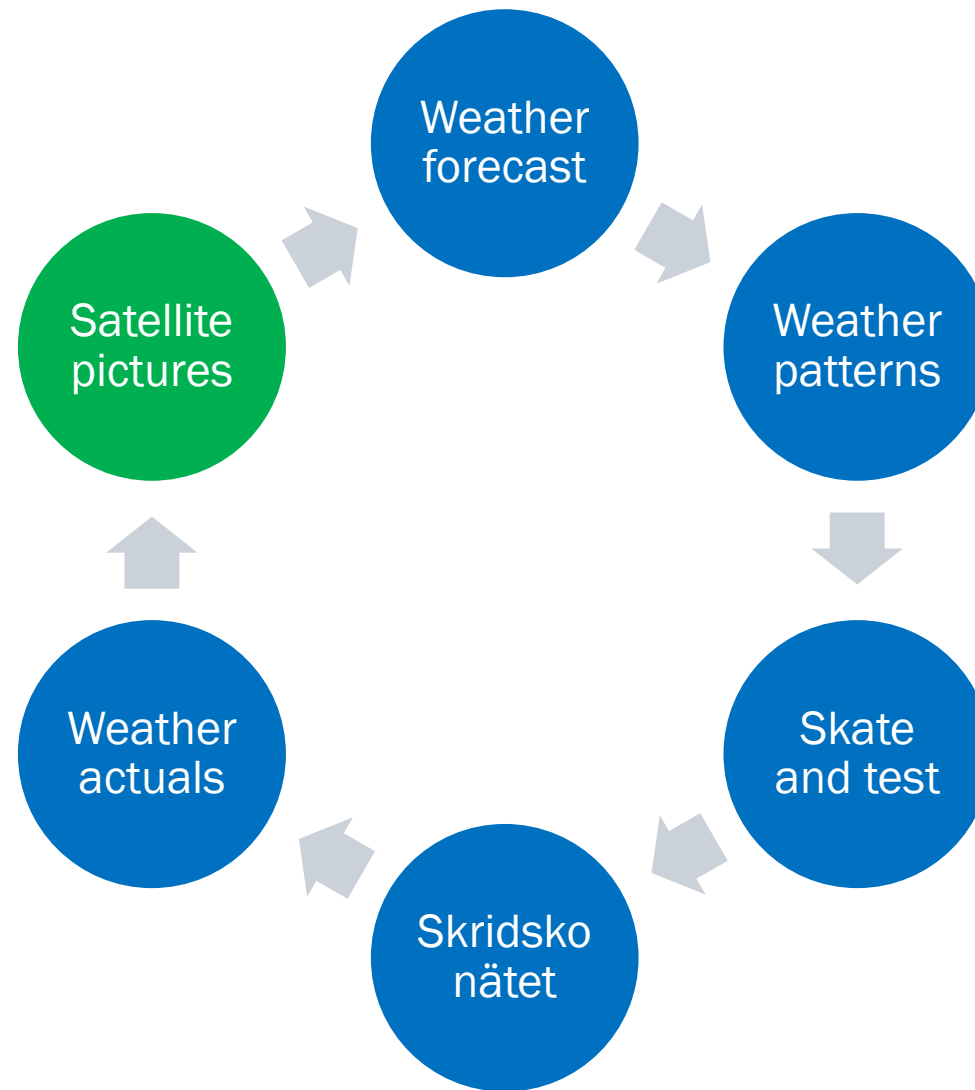
Clear night



By looking at the weather patterns for a (larger) region, instead of the forecast for a particular (smaller) area, it is easier to understand if next weeks weather will do good (or bad) to the ice.

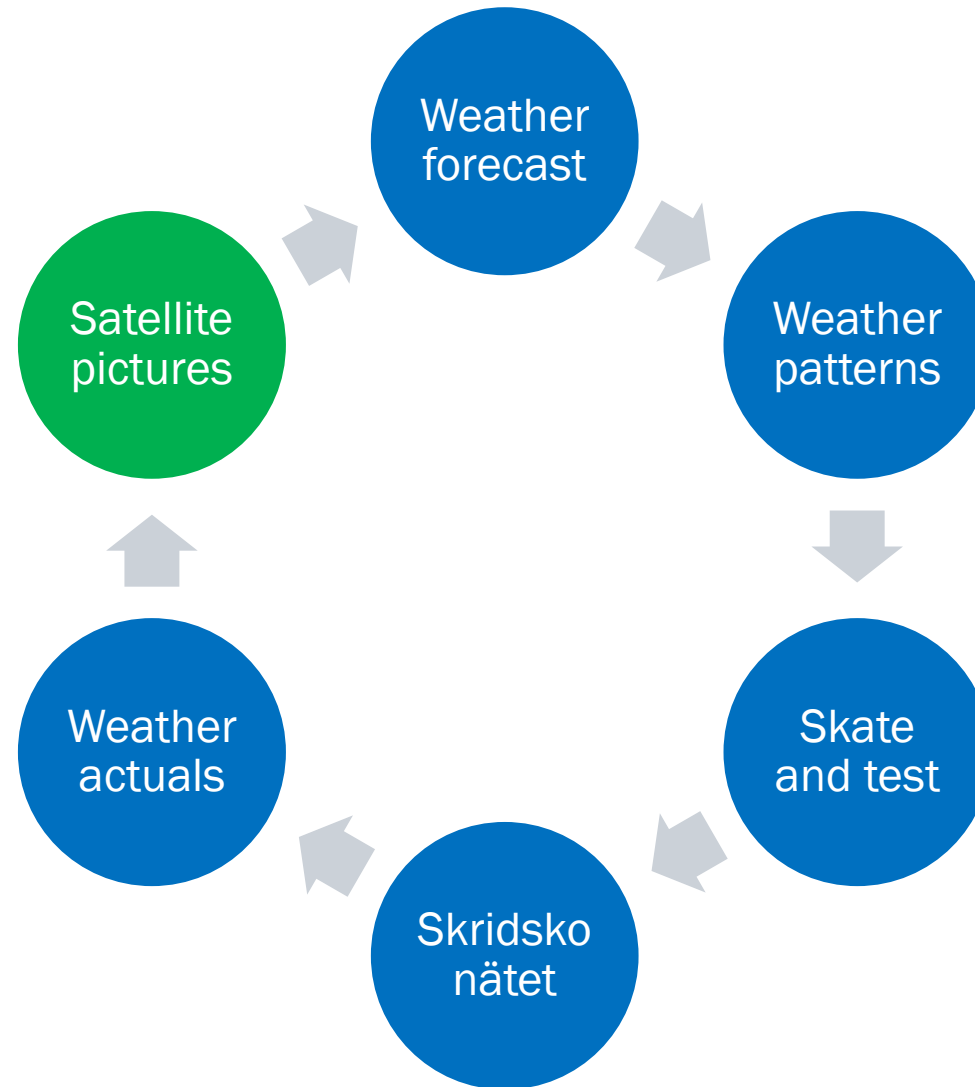






Satellite pictures will increase your chance to find skateable ice dramatically, especially if you want to skate where nobody skated before.

Will be explained and discussed on the HLSK Academy evening.



2019-01-09 - 2019-01-14

## Hokkaido, Japan

# The system works everywhere

If you find the **sweet spot** where snow is moderate and frost and thaw interchange the whole winter, than you can book your skating trip!

Too much snow

Too little ice

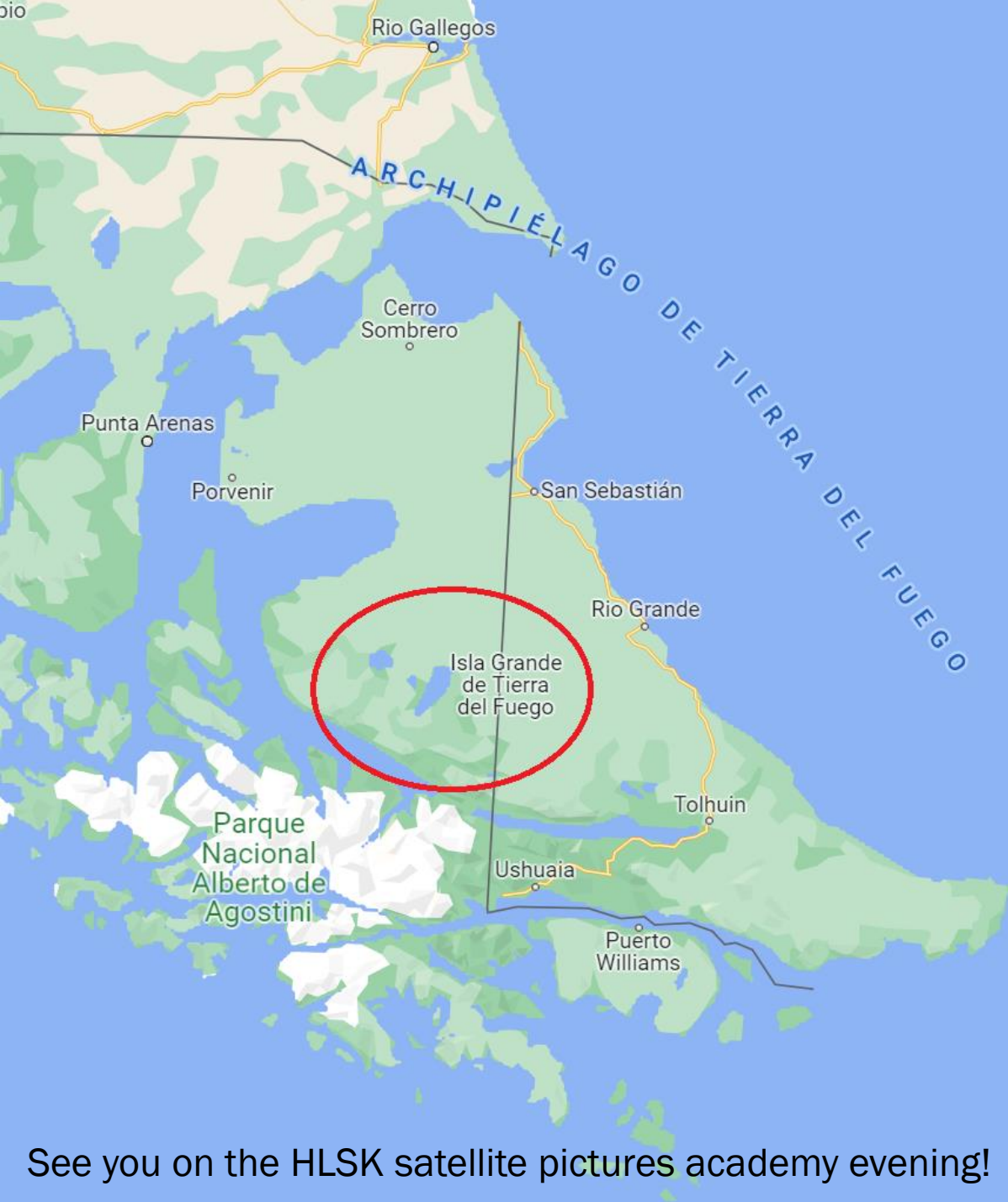
Sweet spot



*“There is always skateable ice,  
somewhere”*

- KRISTER VALTONEN, LLK





Patagonia, July 23<sup>rd</sup>, 2022



See you on the HLSK satellite pictures academy evening!