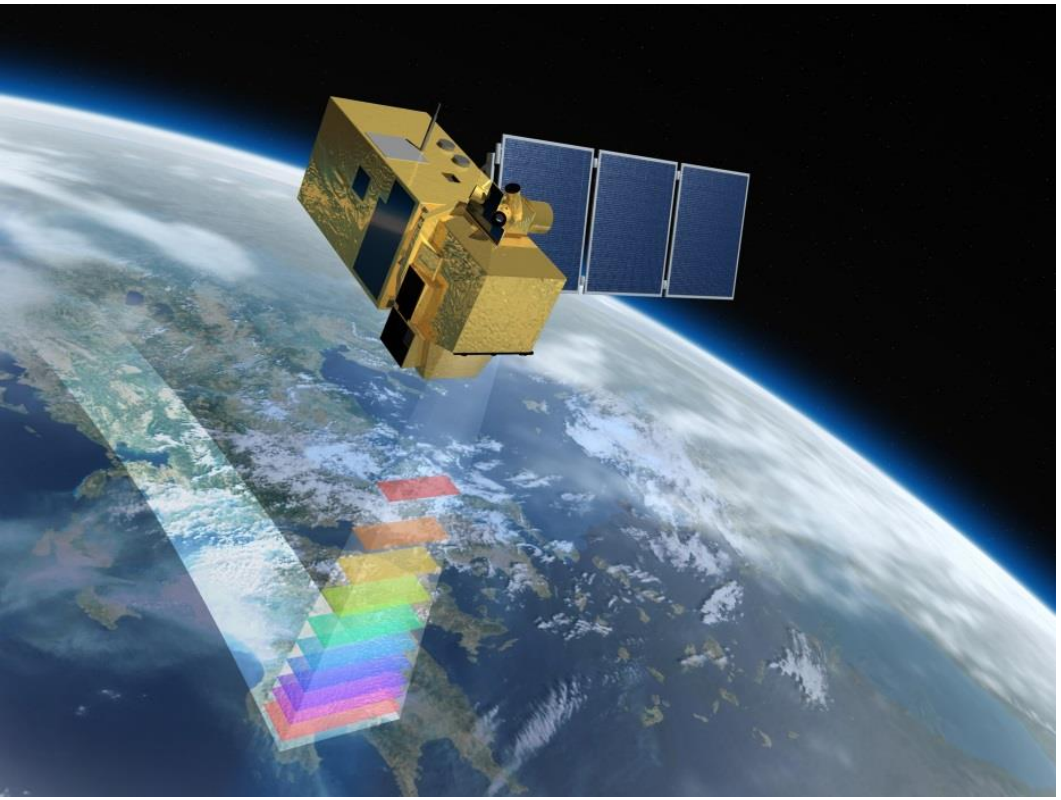

Reading satellite pictures

IN COMBINATION WITH OTHER ICE INFORMATION

Contents

Which lake to choose for tomorrow?

Lots of decision factors in your toolbox

Skate and test

Weather forecast

Water temps

Ice history

Micro climates

Skridsko nätet

Weather actuals

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Depths of lakes

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Winters history

Marine traffic

Sea info services

Shape of lakes

Water flows

Radar images

Satellite pictures

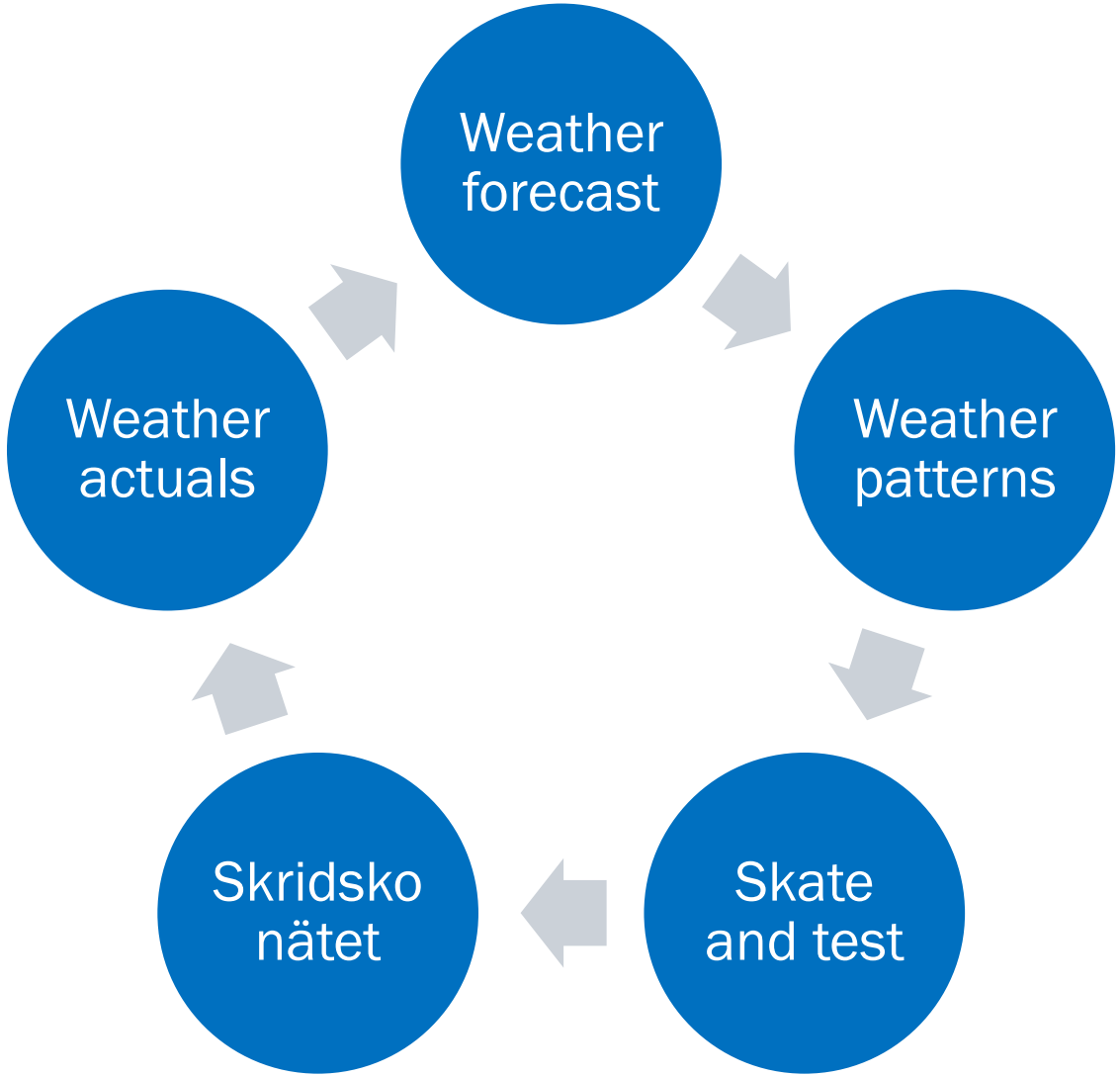
Web cams

Weather influence on ice

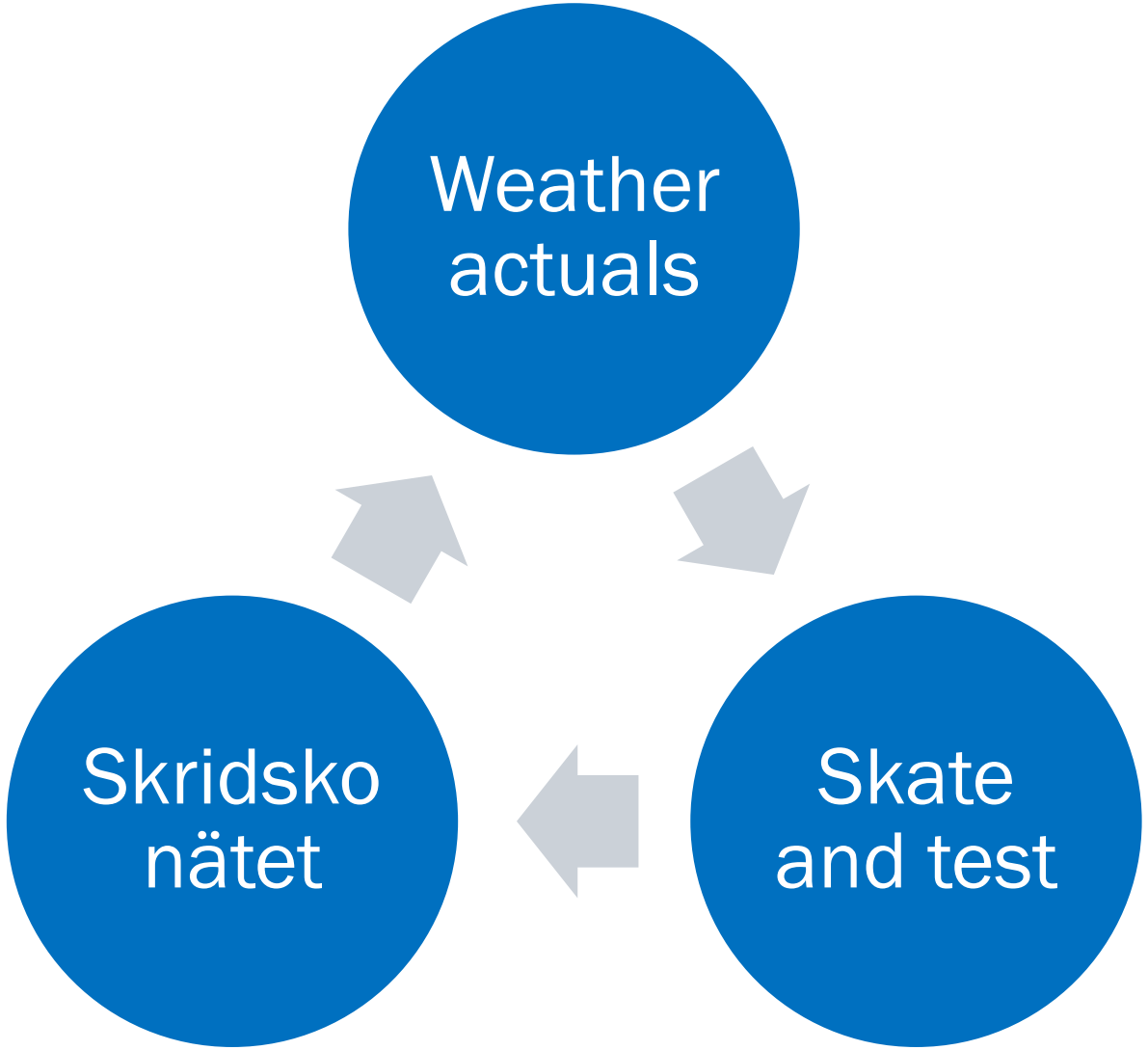
Weather patterns

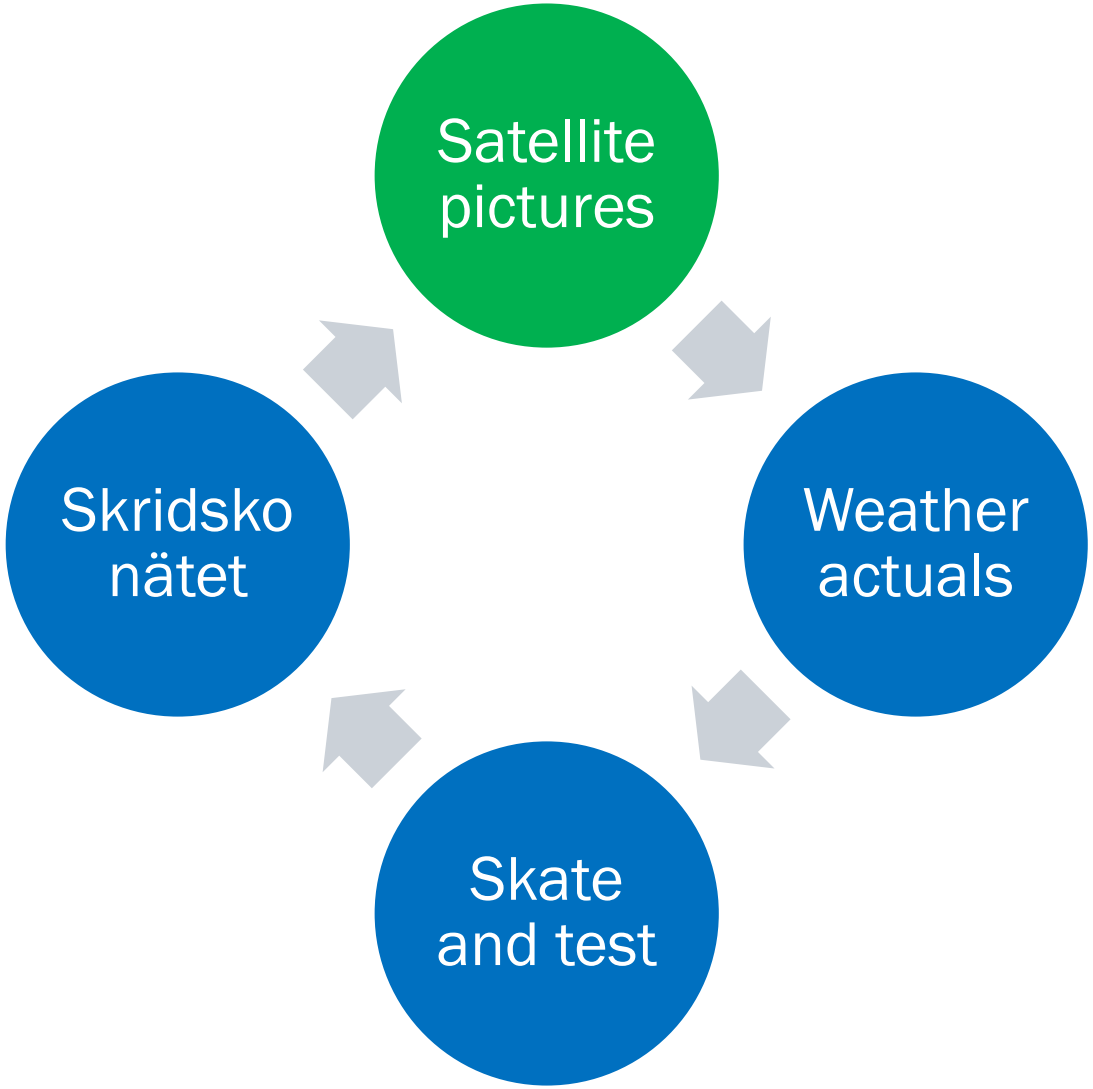
Trafik verket

During the lesson Finding Ice of Aspirant Ice Fox, we came to level 5



For today, we step back to level 3 first



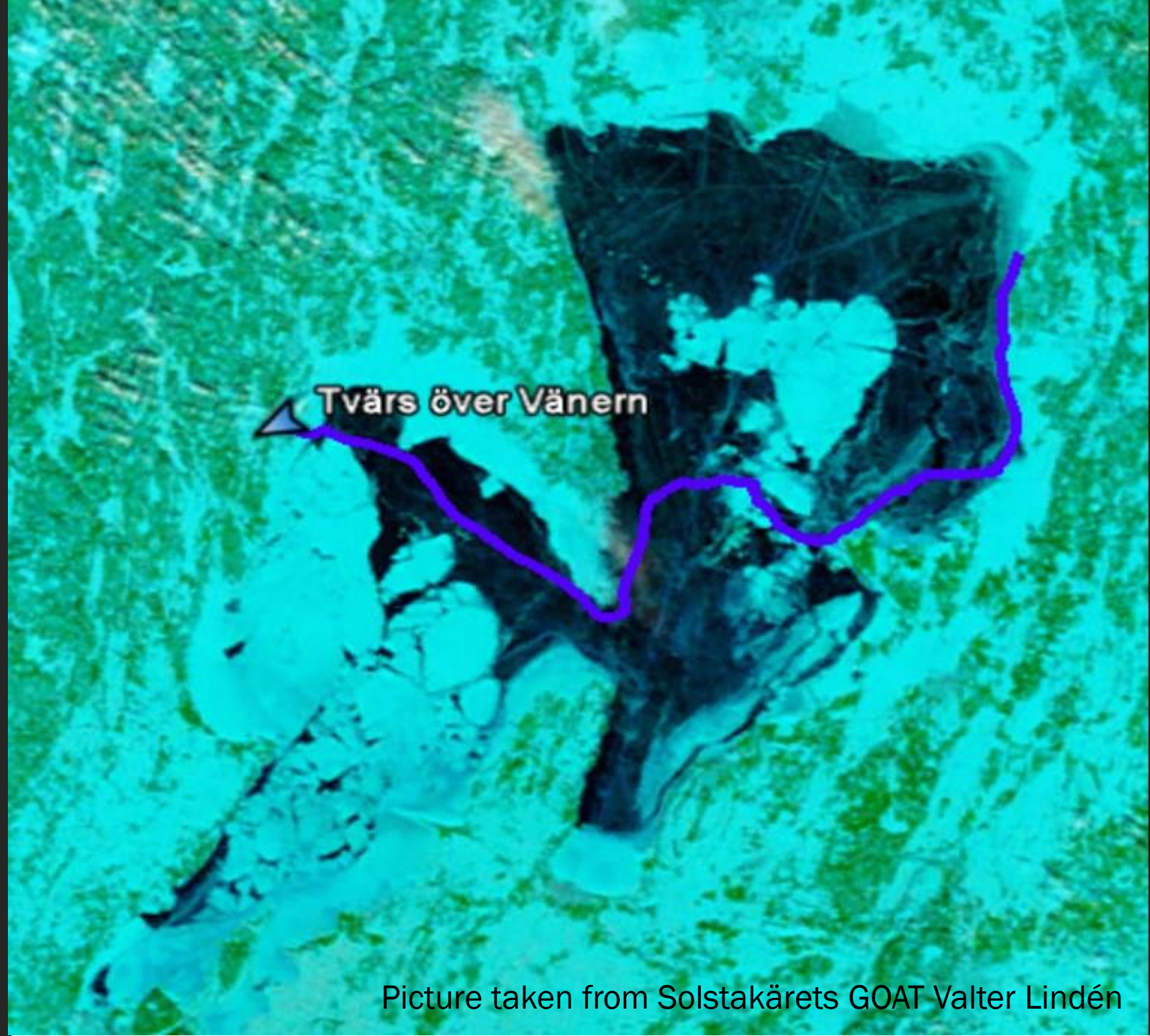


And then we add satellite pictures (but for now only the ones in visible light spectrum)

When to use satpics?

- To find new ice
- To check if old ice became skateable again
- To check reference points
- For planning your tour

(And in some cases as replacement for ice info from Skridskonätet)

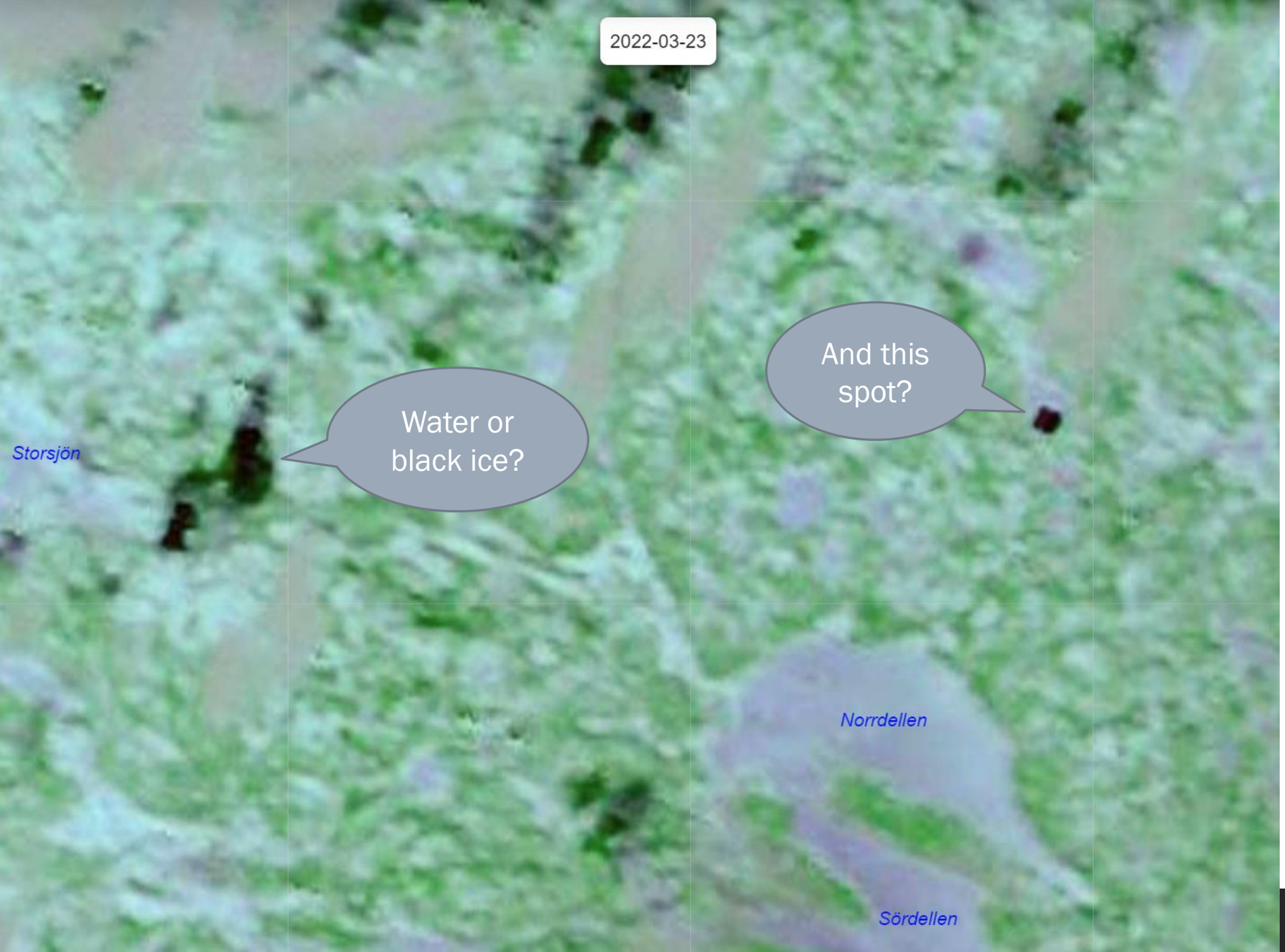


Picture taken from Solstakärets GOAT Valter Lindén

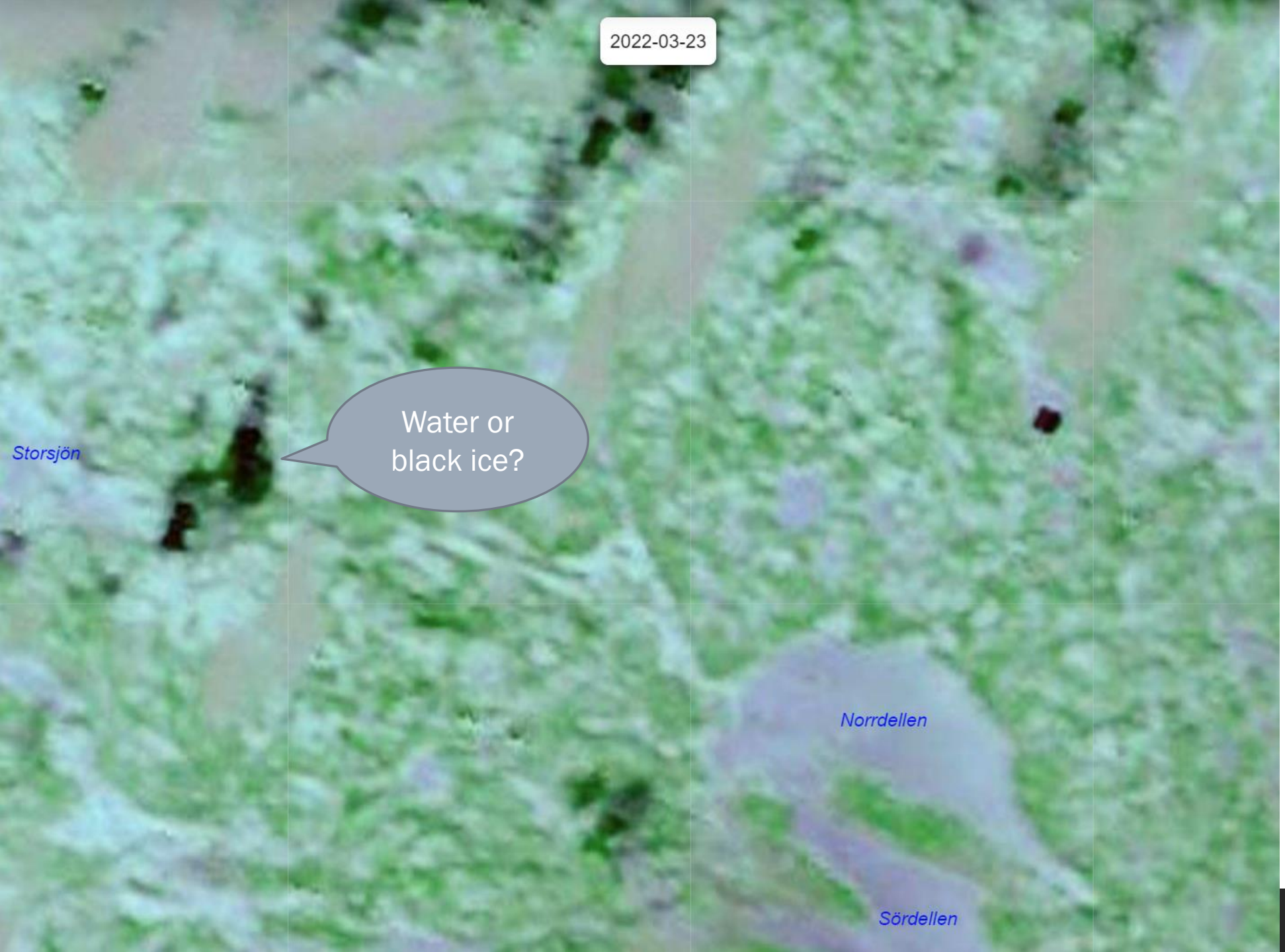
MODIS – where to find?

MODIS is the “old” NASA satellite, still running, but pictures are in low resolution.

Pick date 2022-03-23 to see this satpic

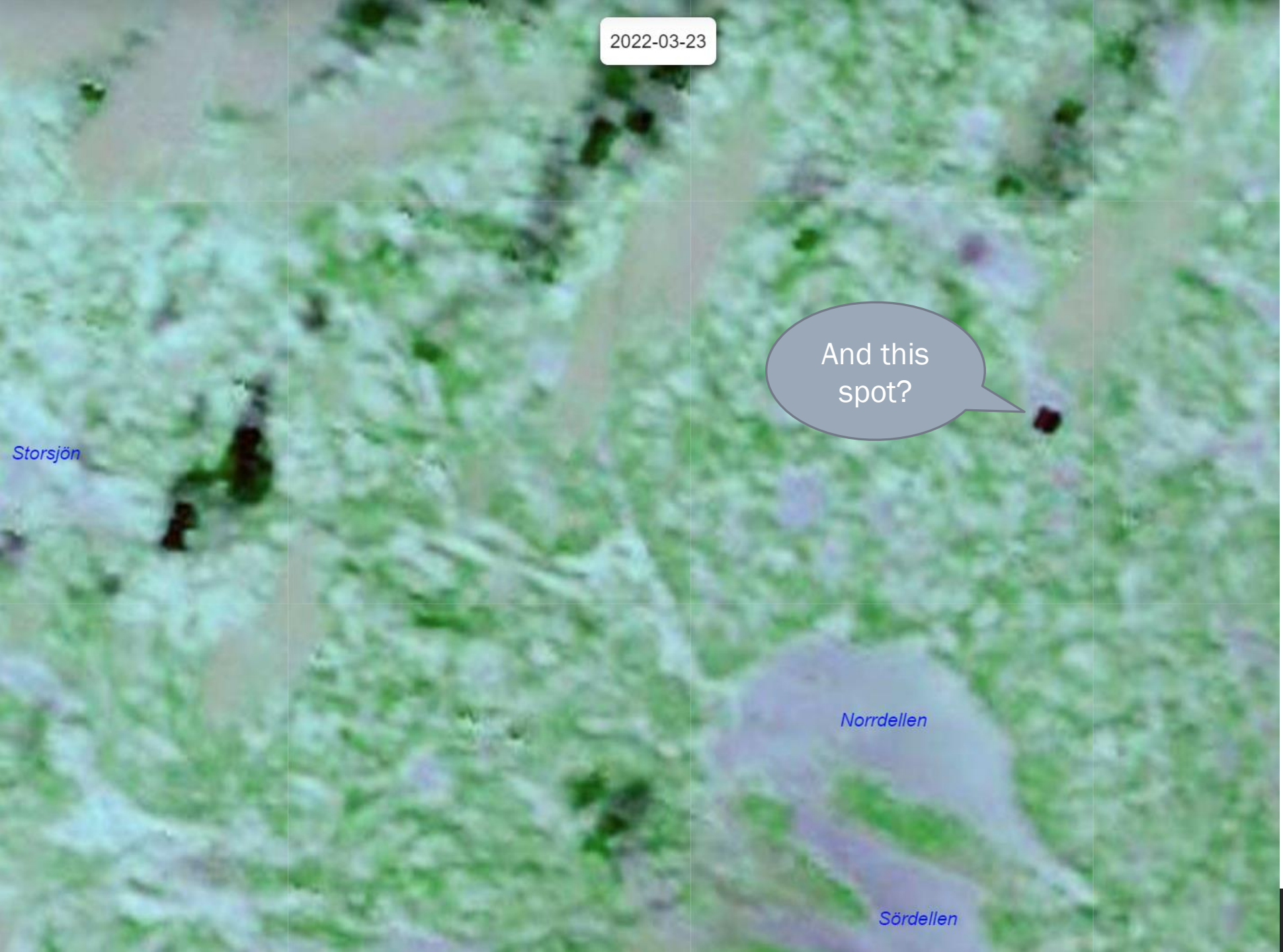


Pick date 2022-03-23 and scroll to north of Stockholm to see this exact same satpic.



The left case first. Change a few times between the map and the MODIS picture. You will see there is no lake at the black spot. So it must be a shadow.

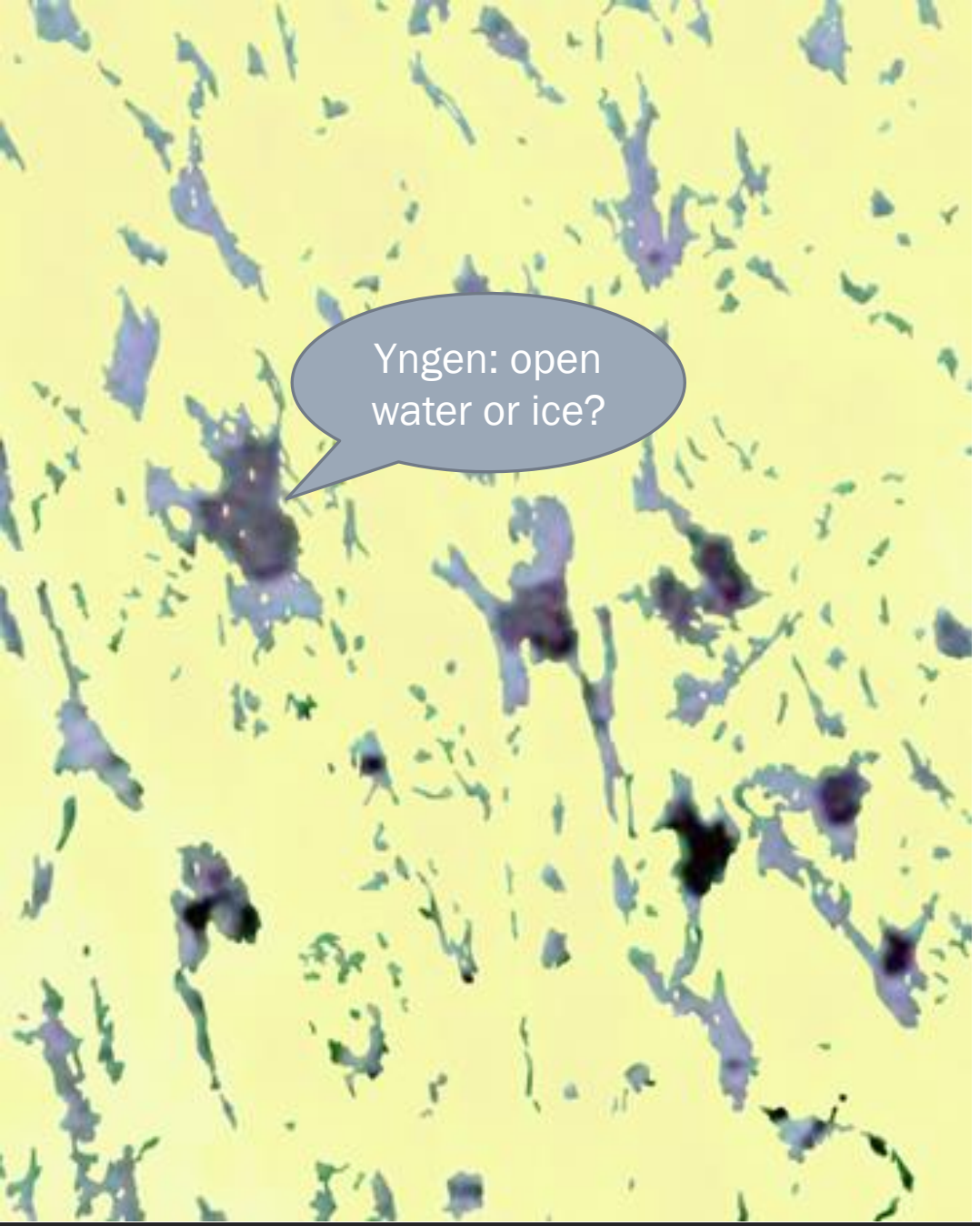
When you look closer, you will see two vague grey spots south of the black spots. Those are the clouds of which the shadows make up the black spots.

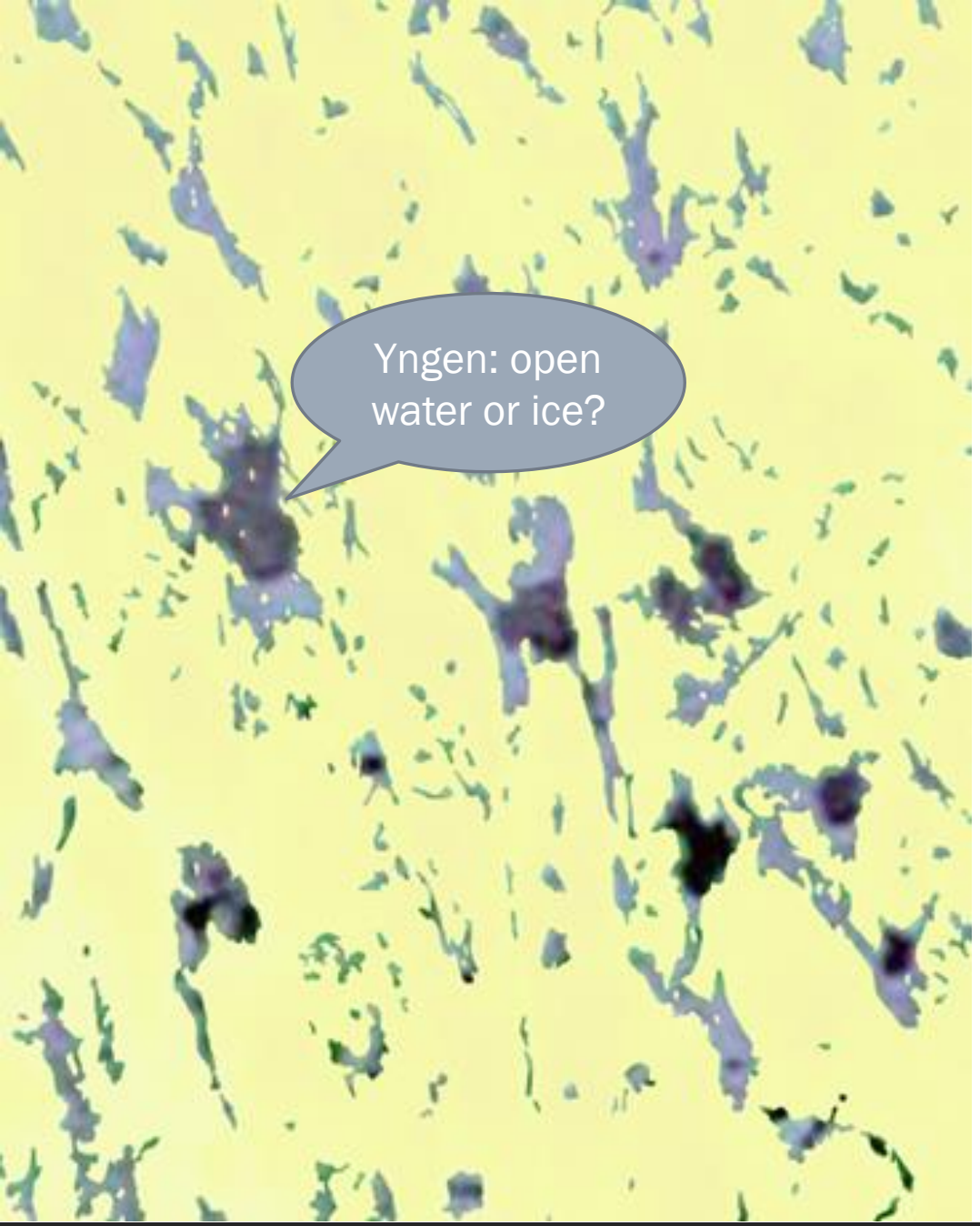


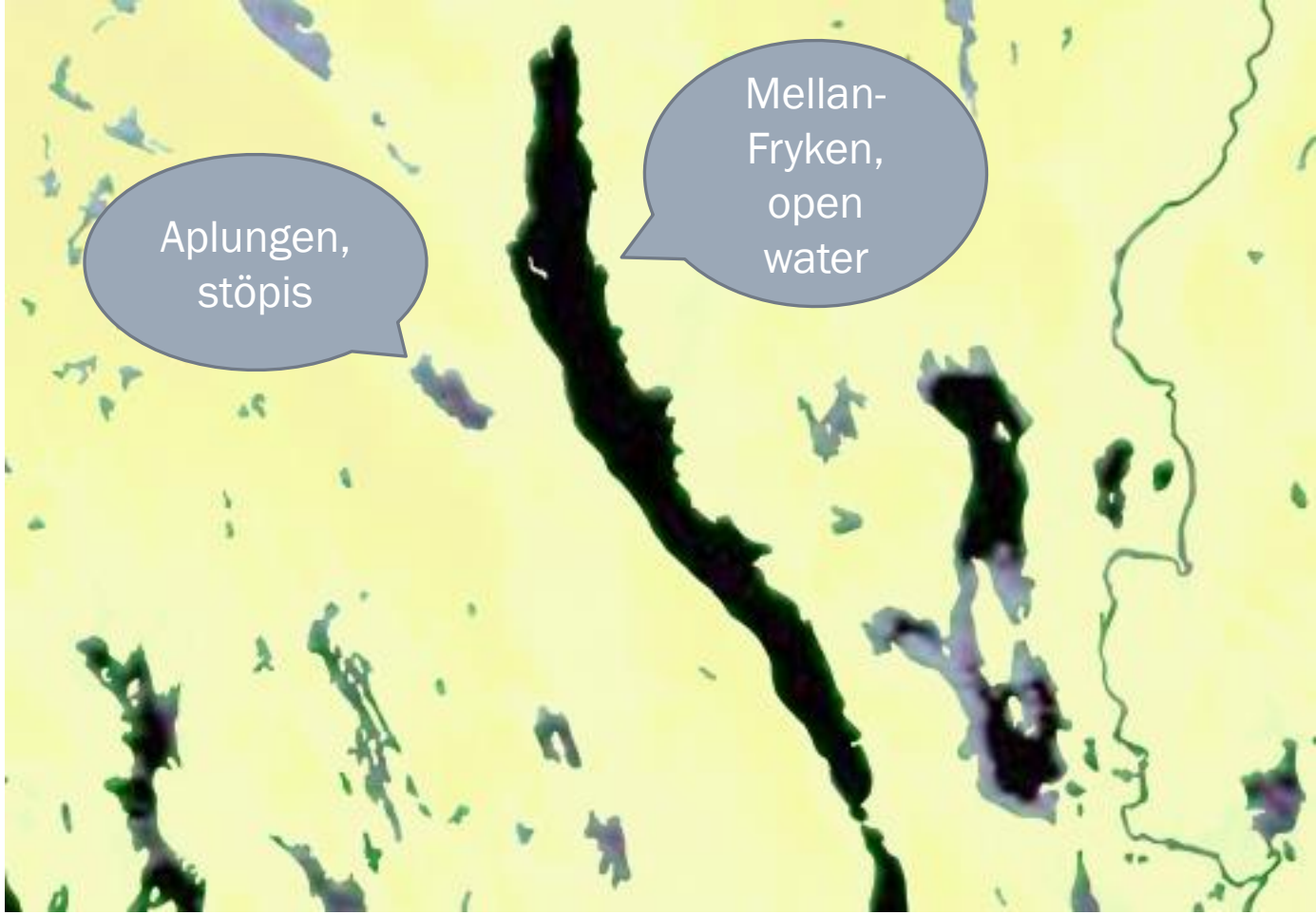
Then this one. Do the same trick by clicking from map to MODIS. You will see the black spot is in the lake, so no answer yet.

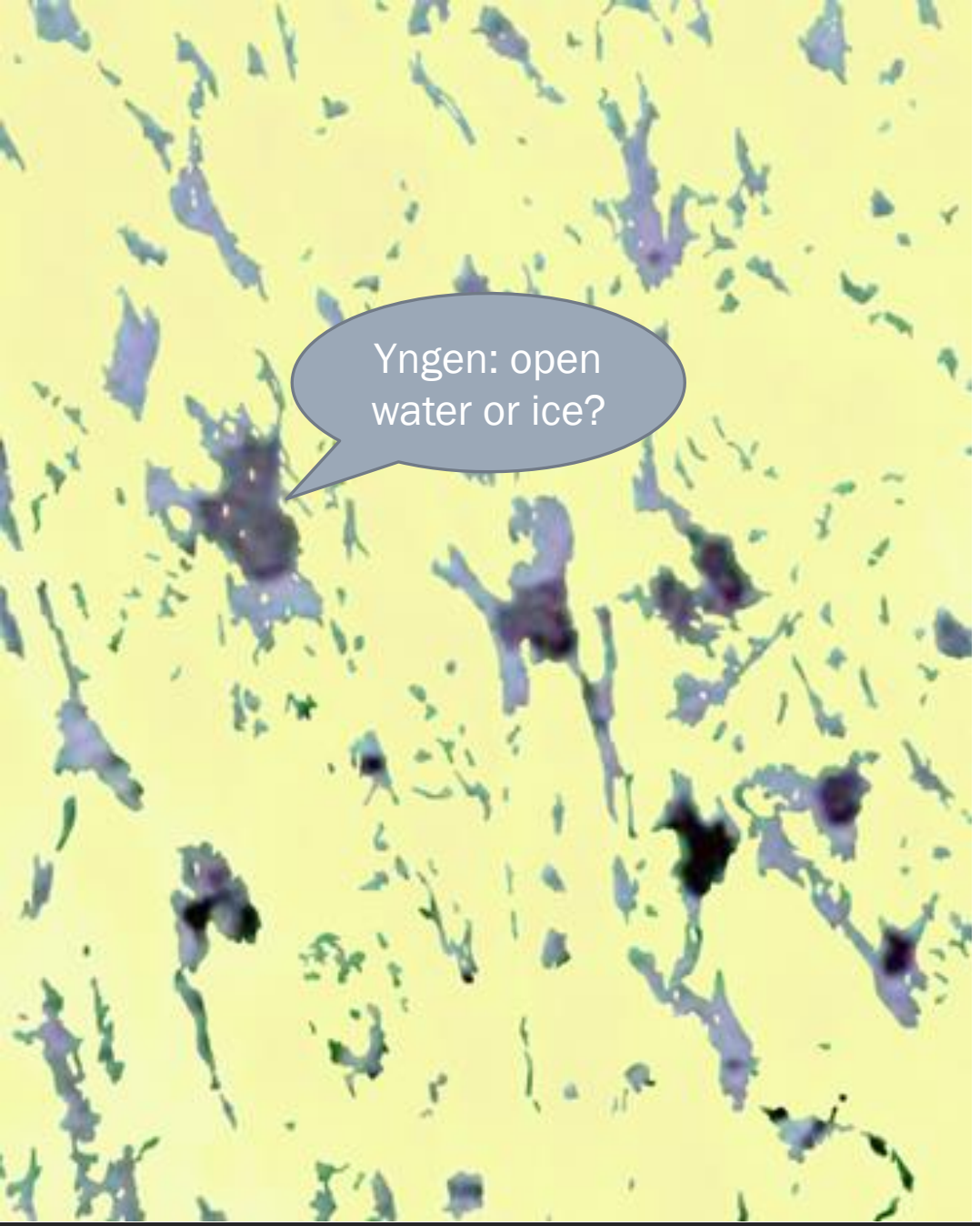
Now look for a cloud that looks like the clouds causing the shadows on the left case. You might think the small spot south of the black spot is a cloud. But change again between the map and MODIS. You will see that that spot is not a cloud, but a lake too.

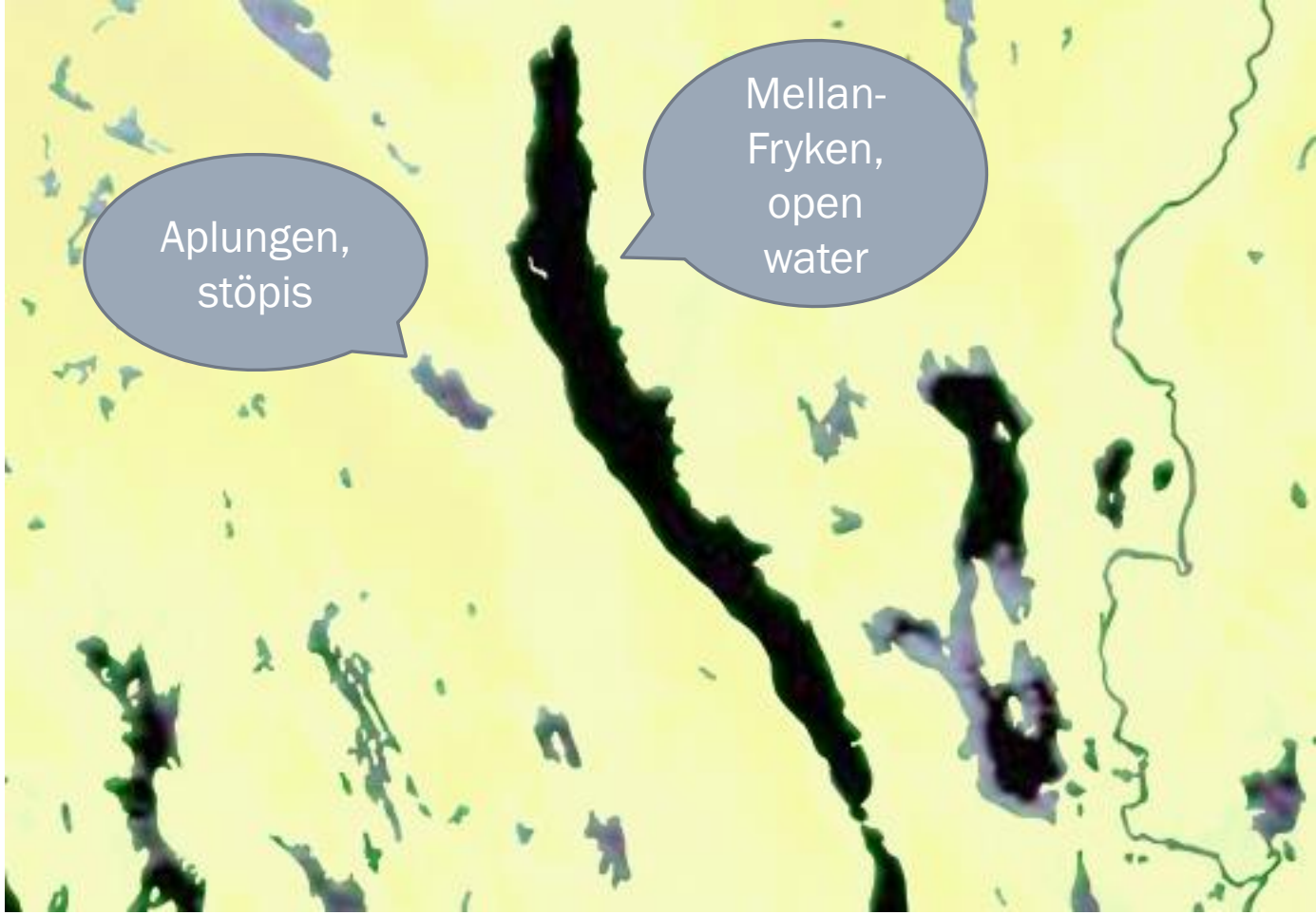
The black spot is most probably open water.


Yngen: open water or ice?


Yngen: open water or ice?

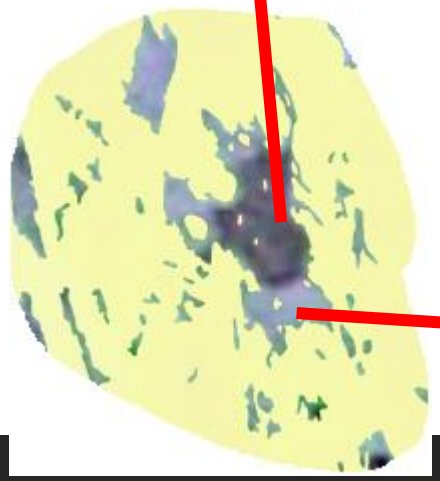

Aplungen, stöpis
Mellan-Fryken, open water





No further information about Yngen available, but two reference points have 100% sure information: Mellan-Fryken is open and Aplungen has stöpis. The color of Yngen shows that best guess is that it has stöpis, maybe even better quality than Aplungen.

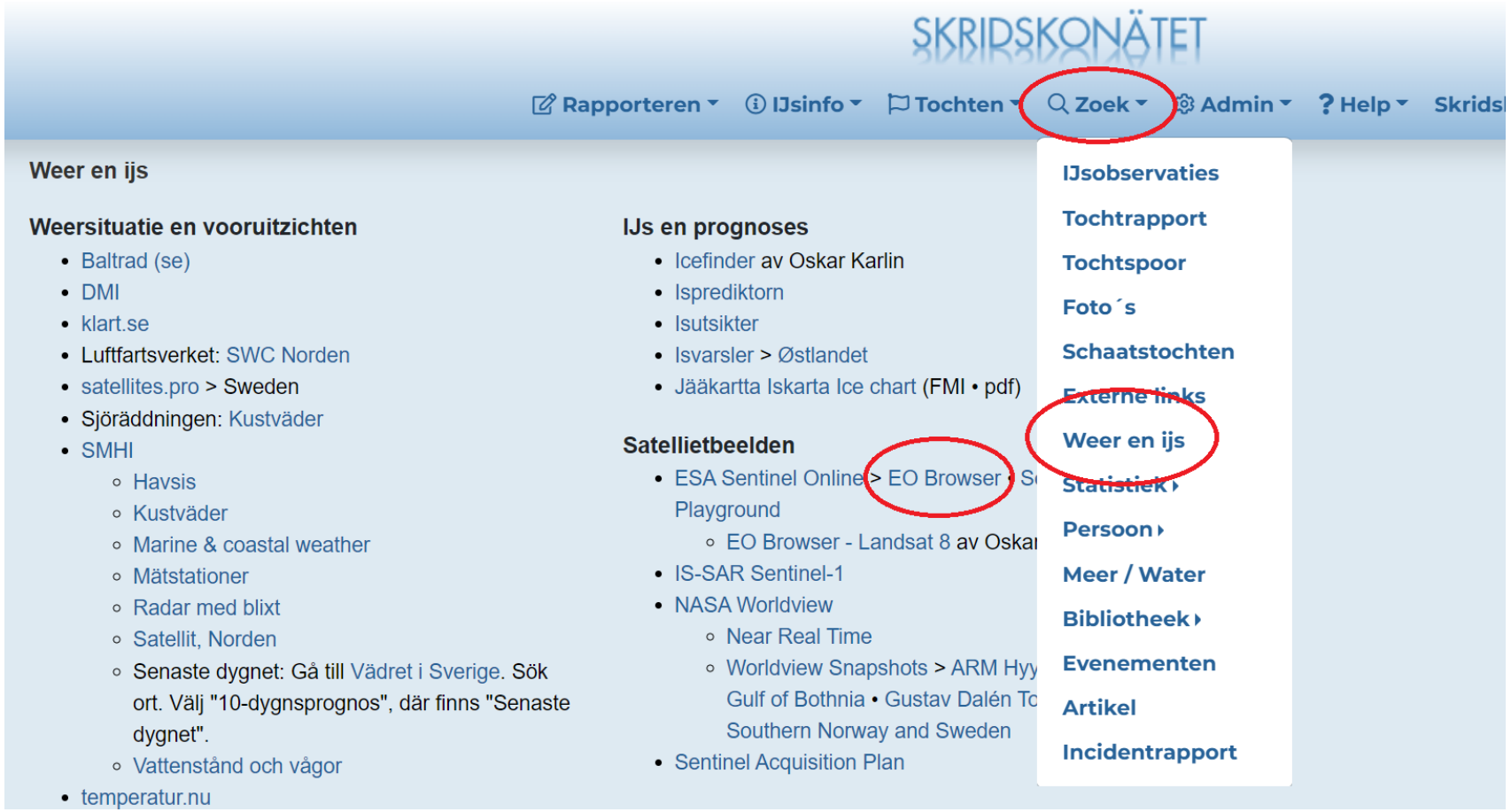
Satellite picture and reality the day after



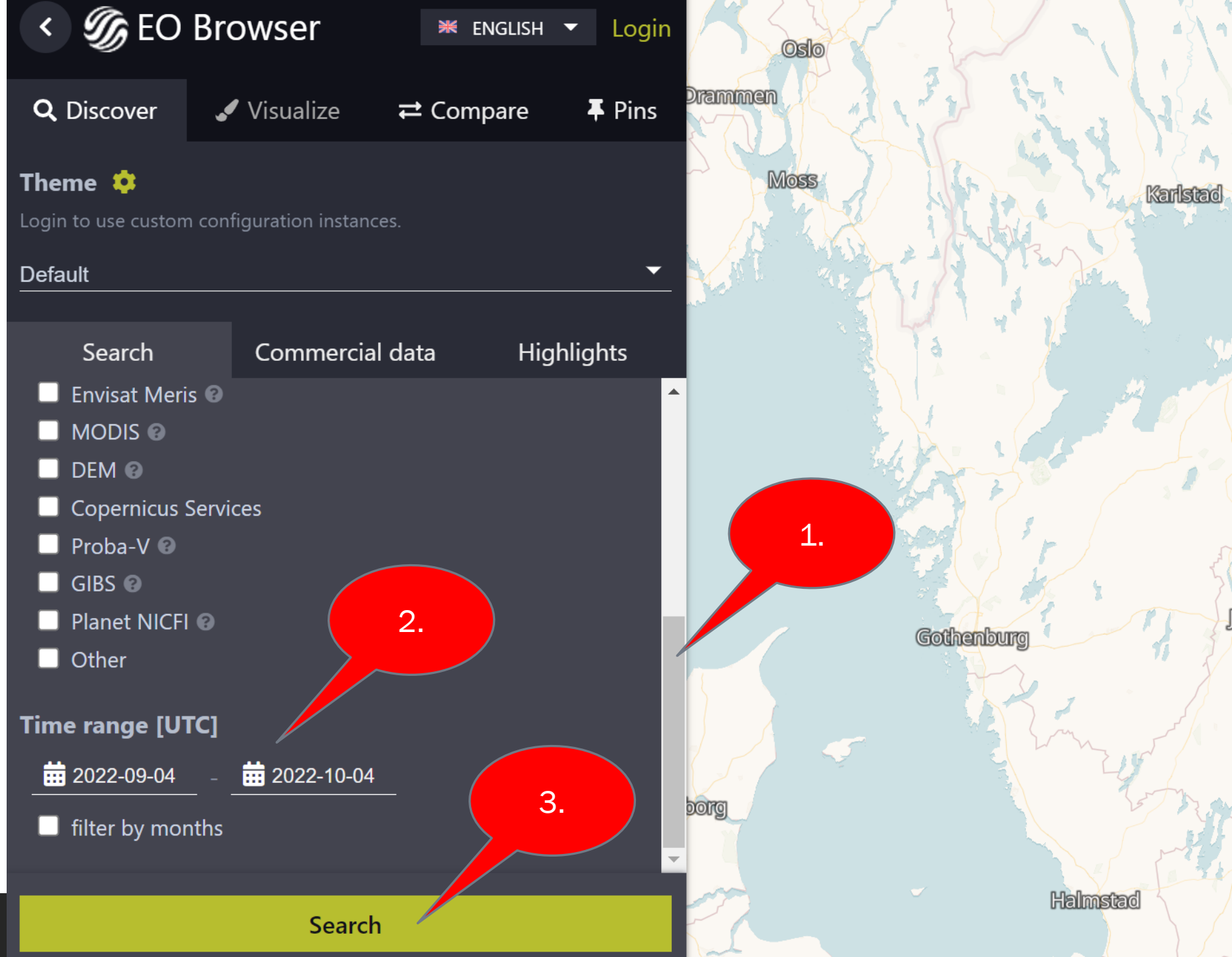
Sentinel-2 makes “visible light” pictures

- Sentinel2 (European) uses newer technology than MODIS
- Sentinel2 gives better pictures (high resolution) than MODIS
- Is not covering earth each day, but once every 2 to 4 days
- Clouds and shadows are disturbing the pictures

Sentinel2 – where to find?

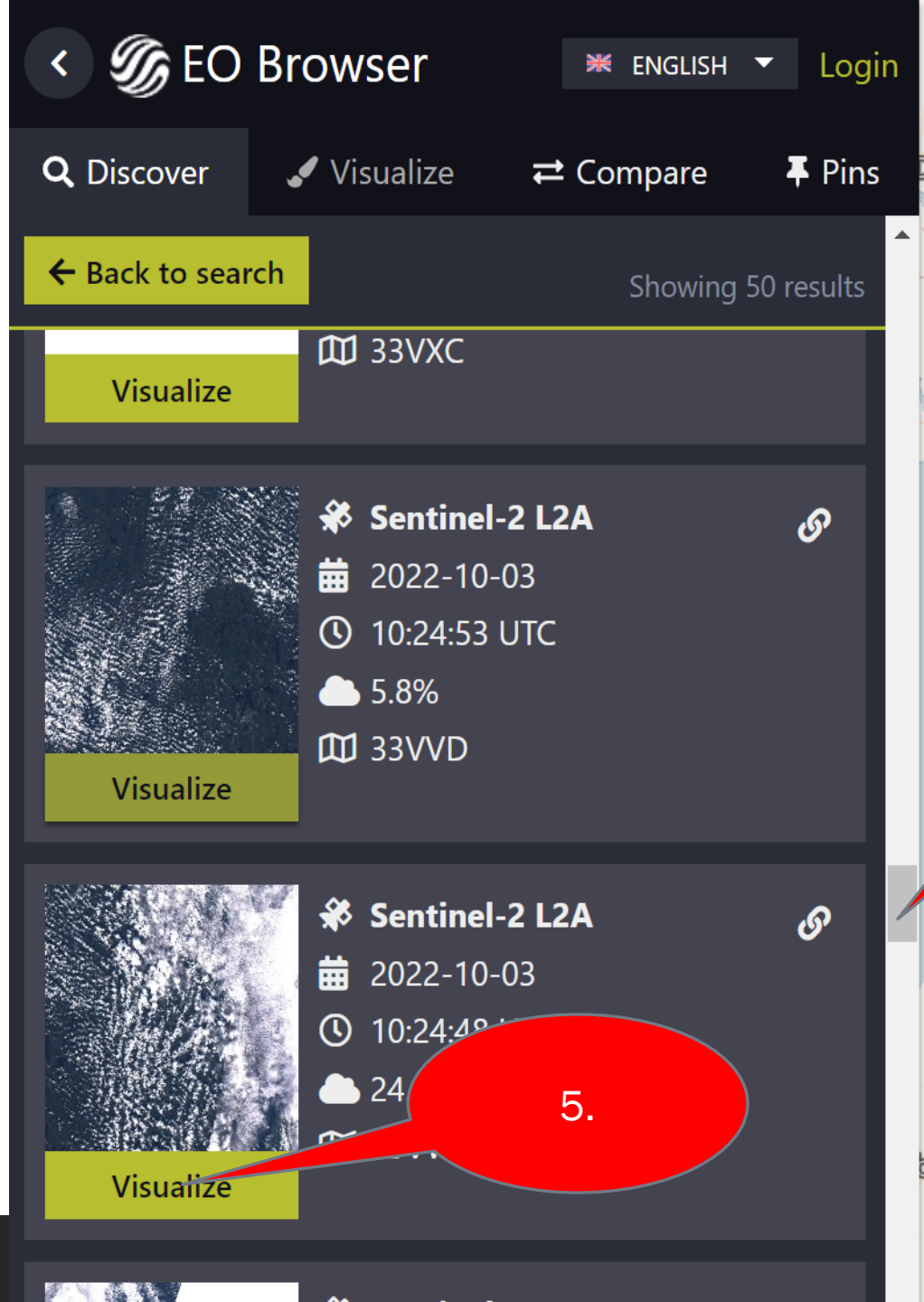


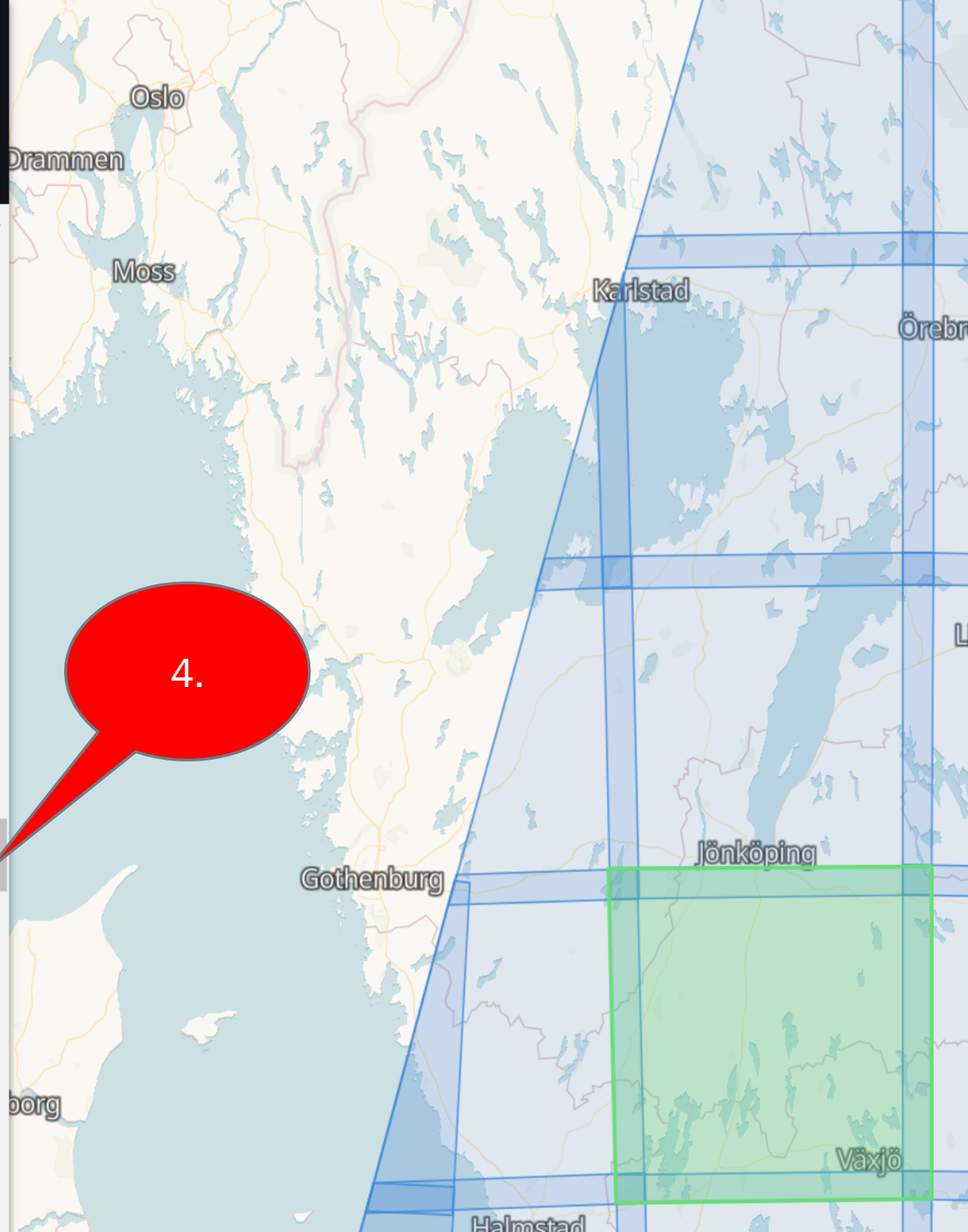
1. Scroll down
2. Enter date range
3. Click Search



4.
Browse through the list

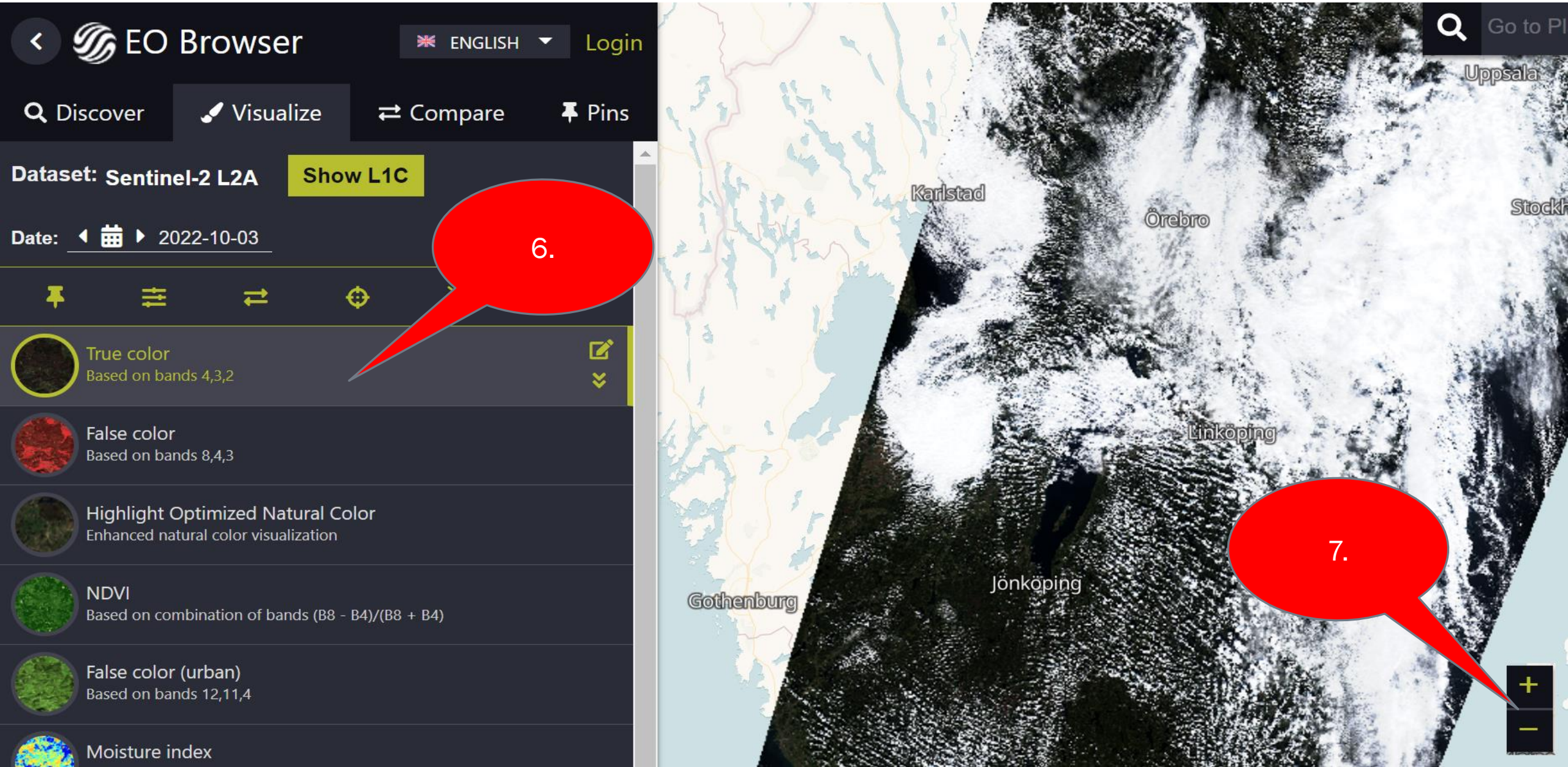
5.
Click the picture you want to see

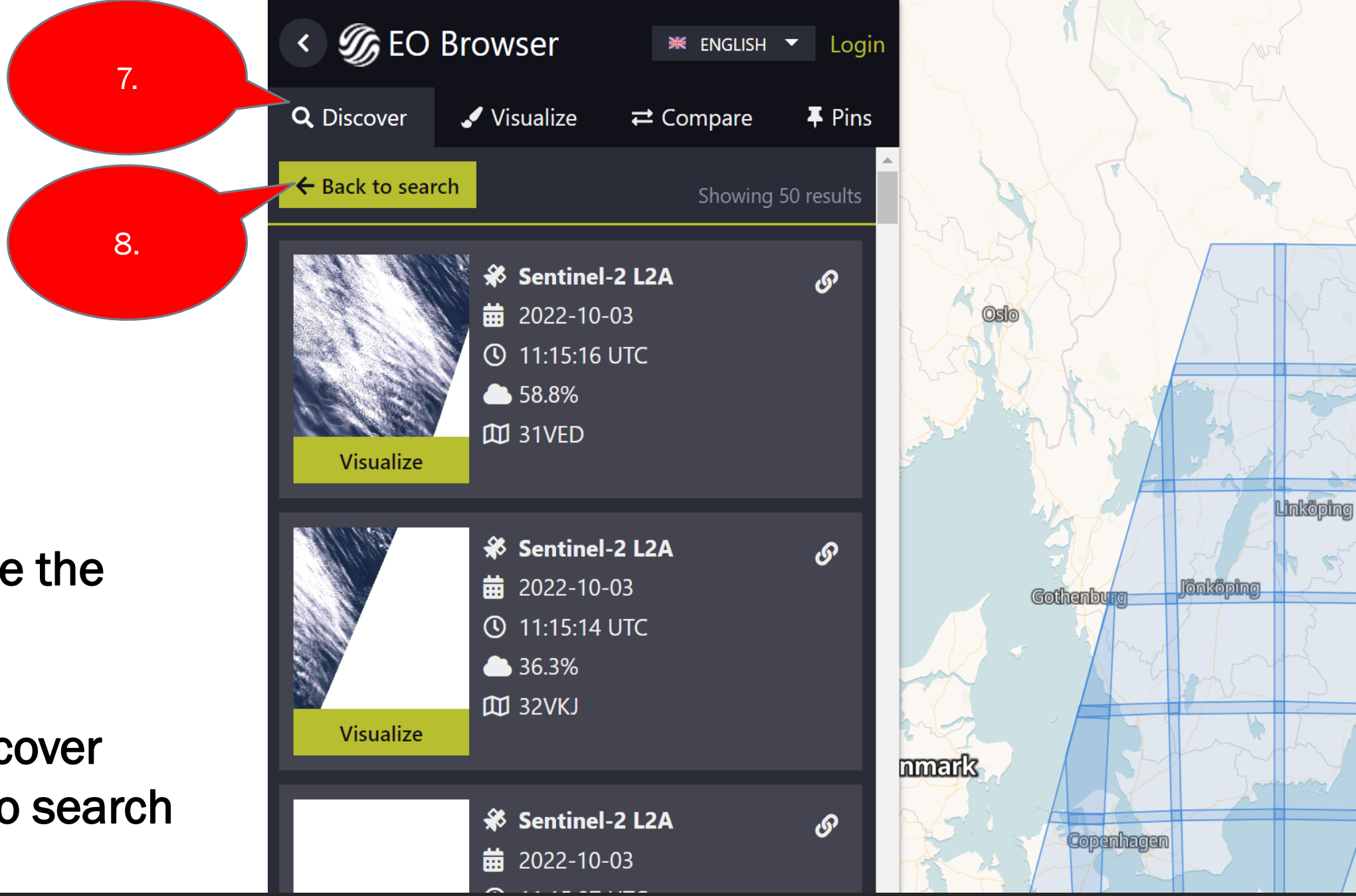




6. Choose the band you want

7. Zoom in or out





Want to change the dates?

7. Click on Discover
8. Click Back to search

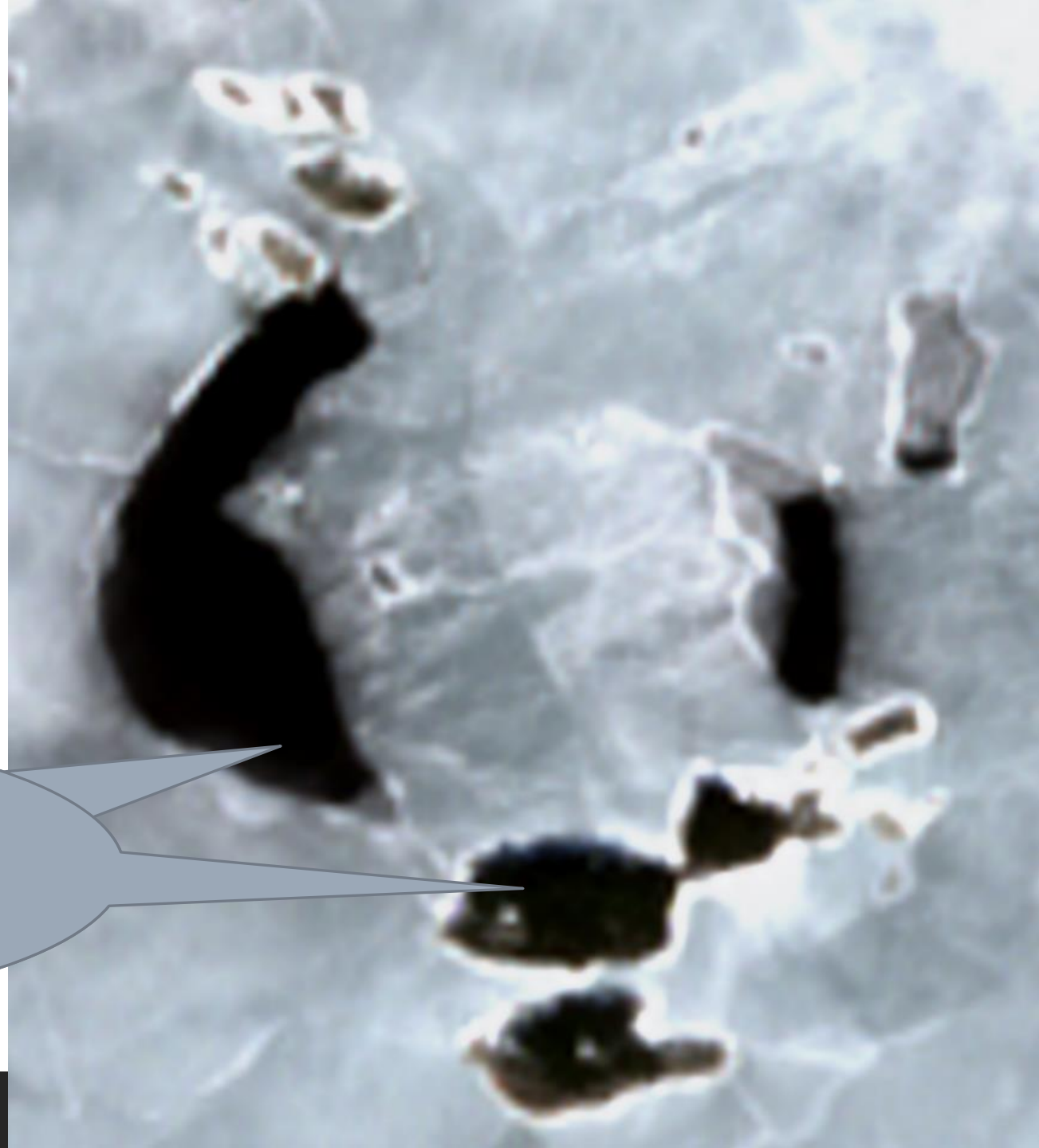
Search Gullkrona, Finland on the map.
Select date range 2018-03-29 to 2018-03-29 (one day)

Cloud in the air or snow on the ice?

Cloud in the air or snow on the ice?

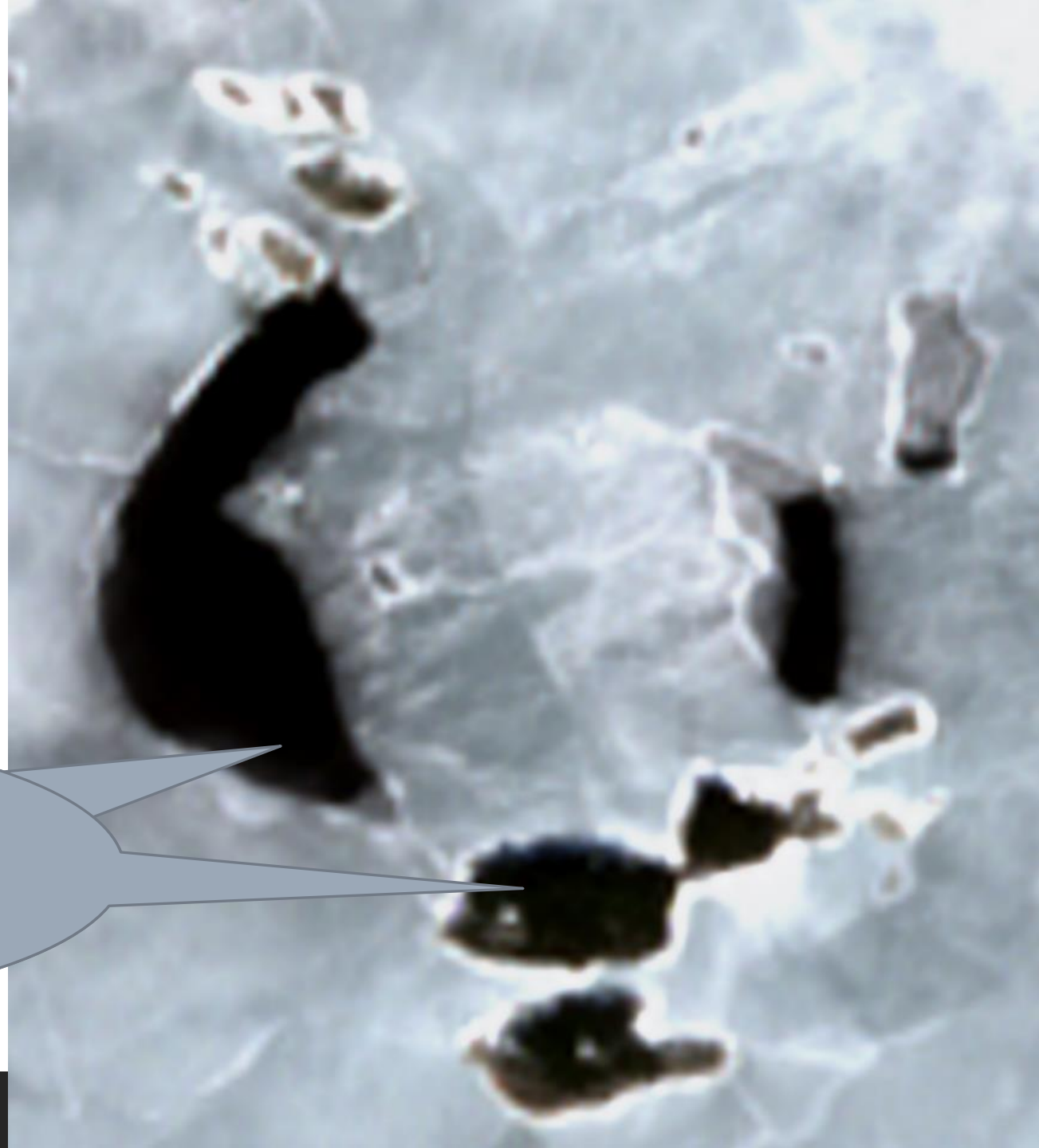
Zoom in first, until the scale in the lower right corner is down to 500 meter. Then change between map and picture. You will see the islands crystal clear. That can only mean the white spot is not a cloud, but snow on the ice.

Now zoom out again until the scale is 5 km. This is how you get a feel how snow covers land and ice in “feathers”.


Open spots or islands?

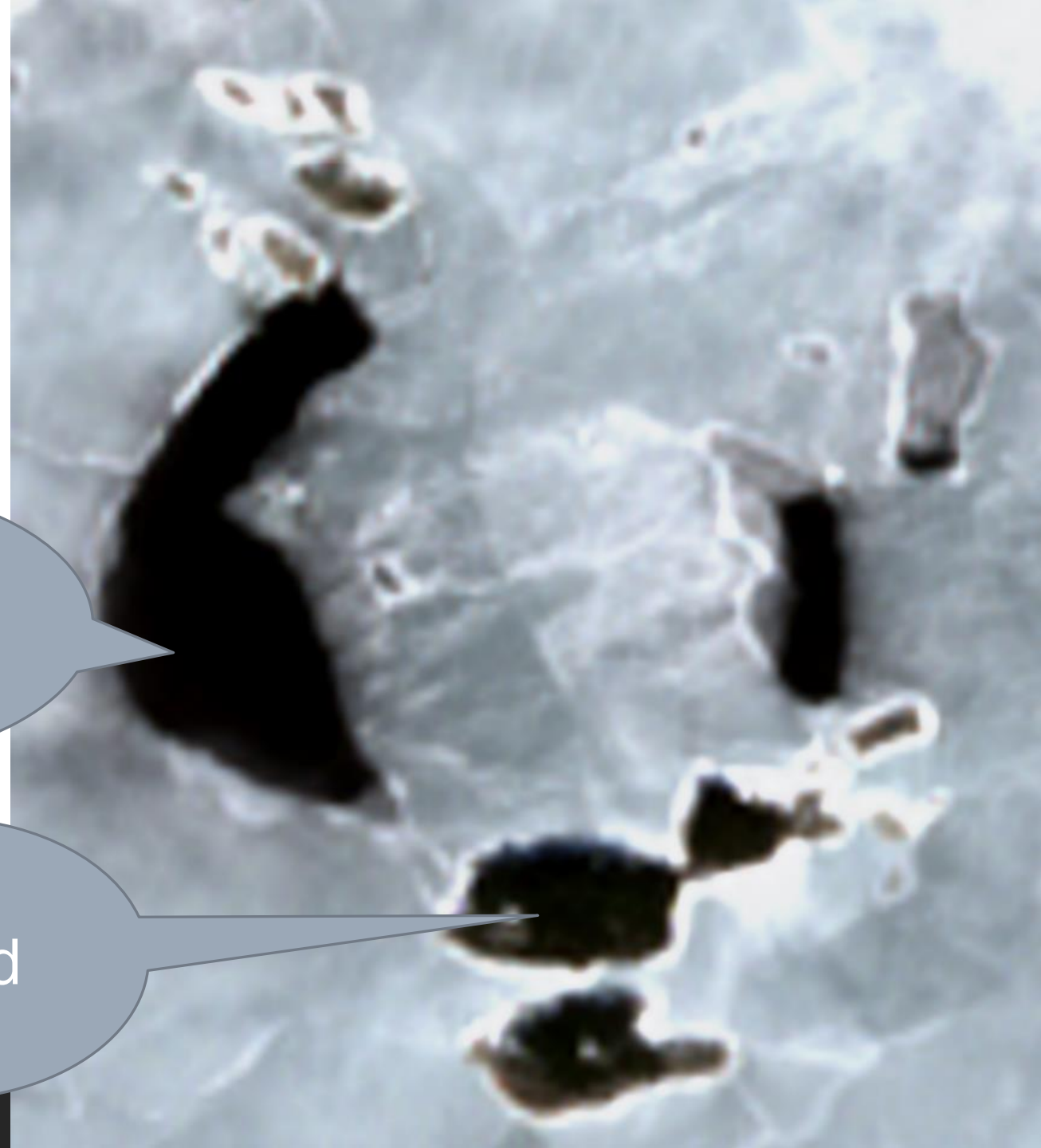
Find the exact spot on the satpic first. Then change between map and picture a few times. You will notice that some of the spots are islands, while others are not.

On the big black spot, there is no stöpis (anymore). It looks like open water, but the spot might have new black ice, if new frost came after all other stöpis had formed and the spot went open before the frost came.



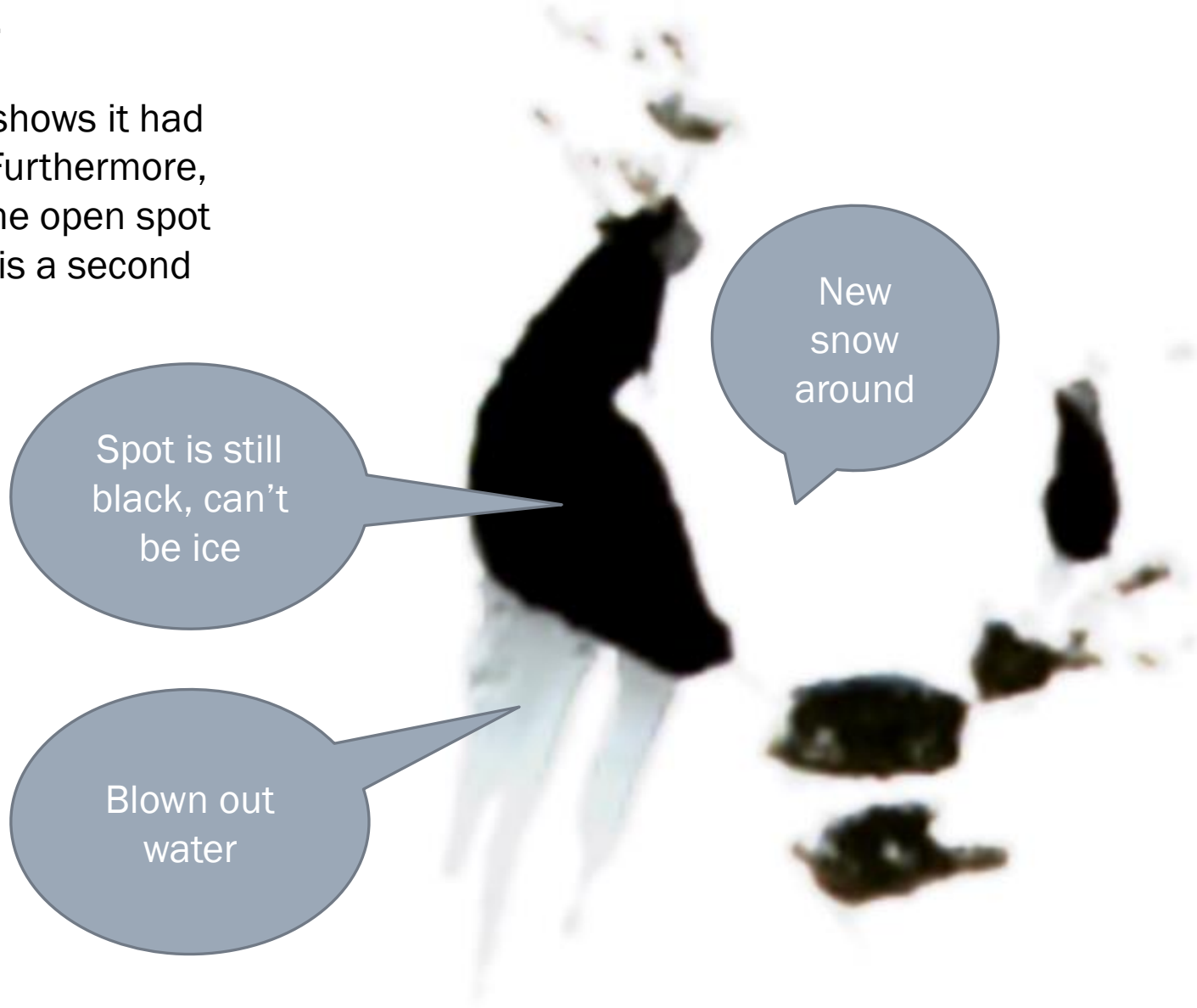
Find the exact spot on the satpic first. Then change between map and picture a few times. You will notice that some of the spots are islands, while others are not.

On the big black spot, there is no stöpis (anymore). It looks like open water, but the spot might have new black ice, if proper frost came after all other stöpis had formed and the spot went open before the frost came.



One of the tricks to know if a black spot is open water or ice, is jumping to another date not far away.

In this case, the picture of three days later shows it had been snowing but the spot remains black. Furthermore, you see blown out water that came out of the open spot and was blown/sucked into the snow. That is a second indication the spot is open water.




Open spot between islands
Släpråk
Råk
Shipping lanes
Vrakis?
Drifting ice plate
Open water?

Markermeer in The Netherlands, 2018-03-02

Using reference information

- Usually other known ice information and/or weather actuals
- Can be used for (mainly) two goals:
  1. reference information from before the satpic can give a logical explanation to support (or deny) your conclusion about a satpic
  2. reference information from after the satpic can be used to extrapolate if a lake is skateable or not


SKRIDSKONÄTET
Rapporteren
IJsinfo
Tochten
Zoek
Admin
Help
2022-01-17
Ljugaren
Vinäsfjärden
Black ice or
open water?
Balungen
Siljan
Rättviken
Österviken

SKRIDSKONÄTET

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2022-01-17

Black ice or open water?

Vinäsfjärden

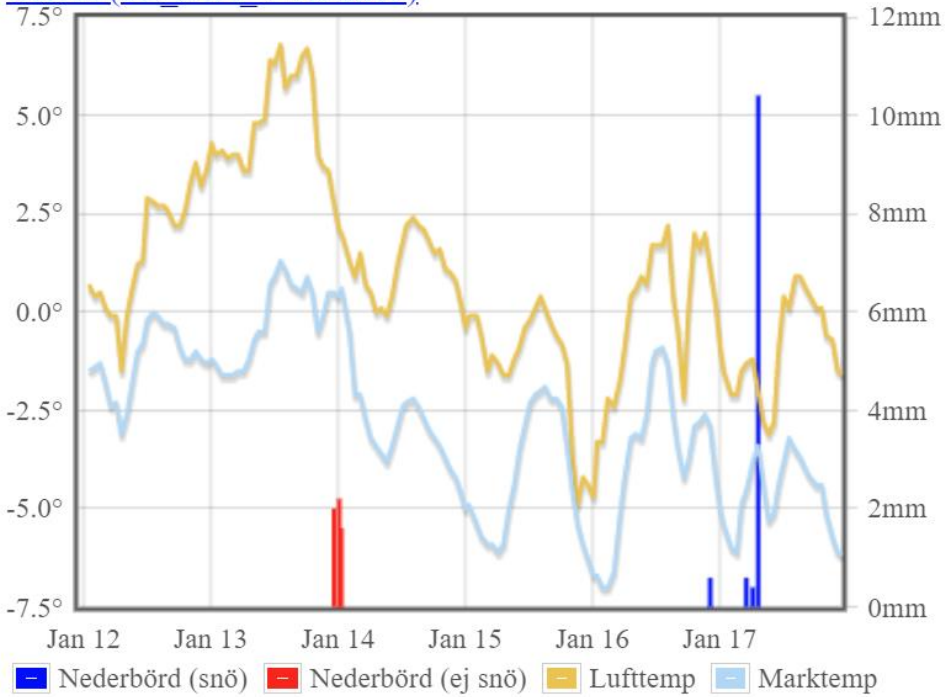
järden

Siljan

Rättviken

ngen

Österviken



SKRIDSKONÄTET

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2022-01-17

Black ice or open water?

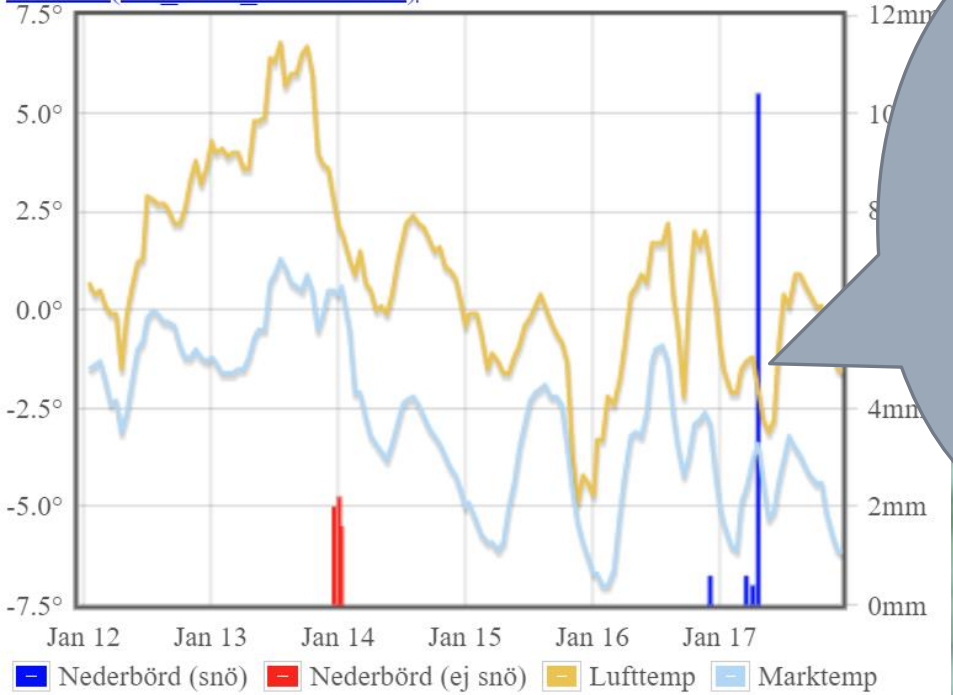
Vinäsfjärden

järden

Siljan

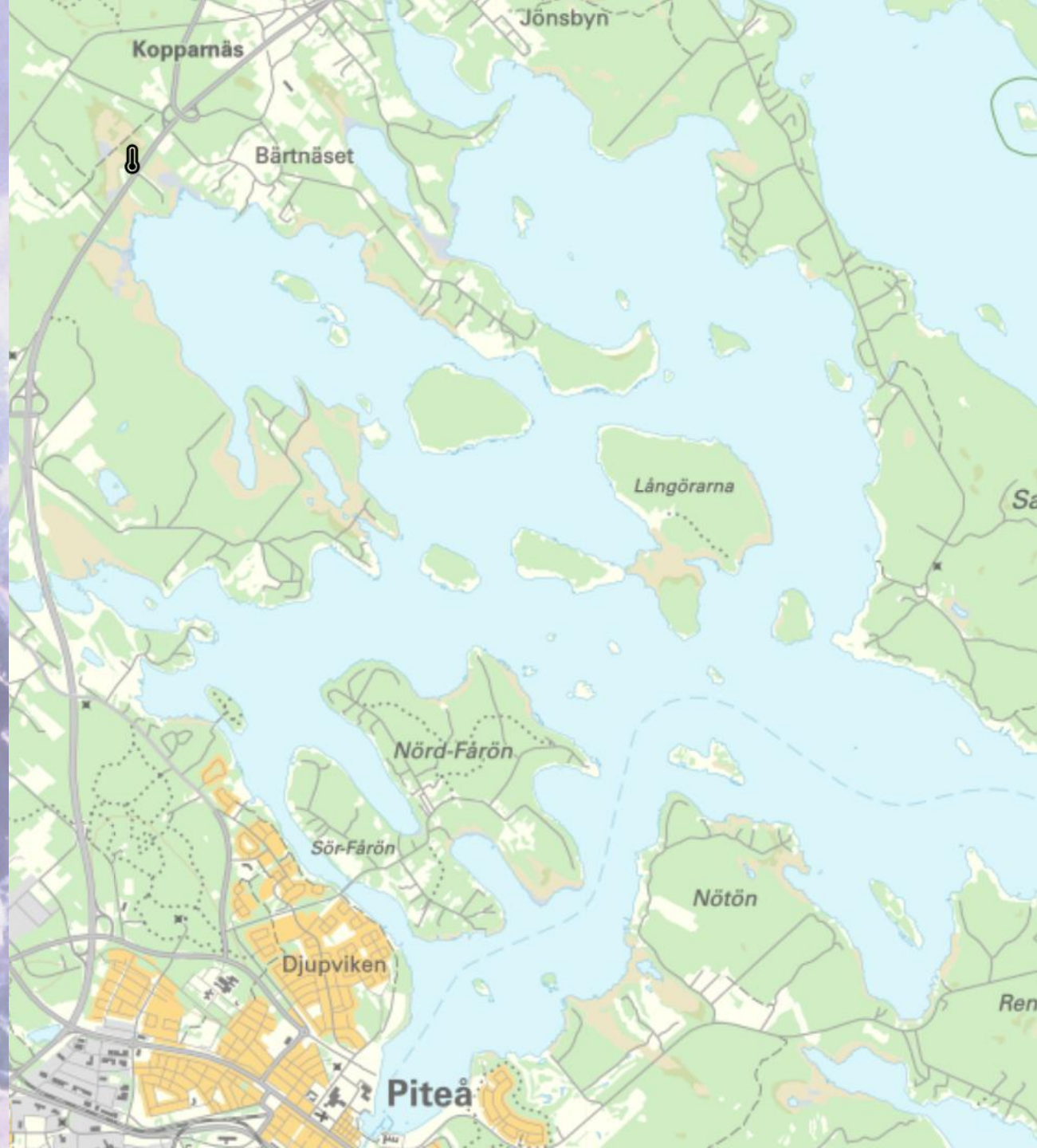
Rättviken

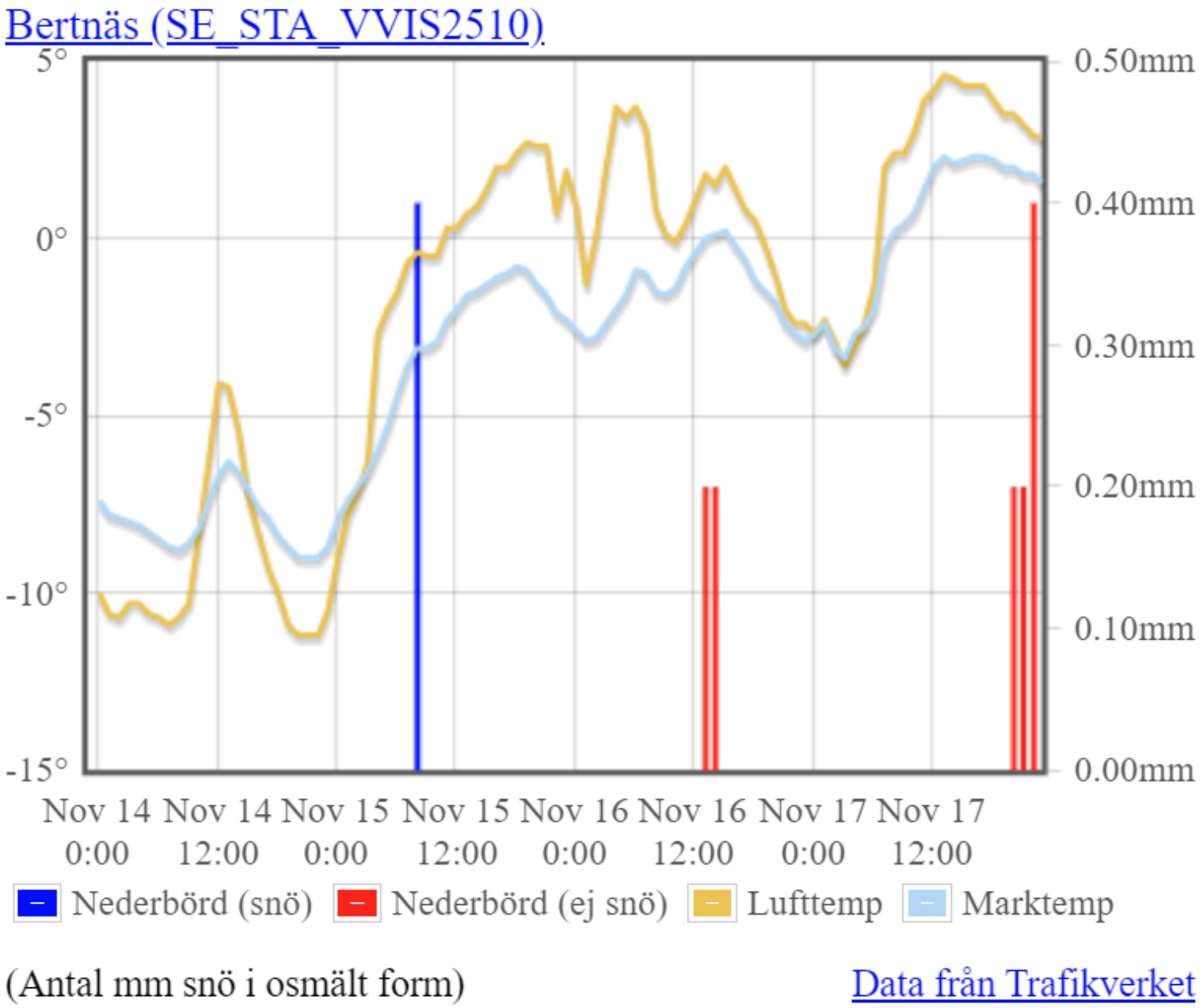
Österviken



It snowed just before the picture was taken. So most probably it is open water.

Piteå Skärgård
2021-11-14





The weather actuals from November, 14th up to November 17th, 2021.

What do you think, was Piteå Skärgård green, blue, yellow or red dot on November 17th?

IJsobservaties van tochtdeelnemers

Bärtnäsfjärden (Rob Mulders)

Vattenbegjuten slät kärnis, mestadels mellan 8-12 cm. Tunnare is finns i sund och bredvid råkar, men det går bra att åka runt.

Davids stenar (Rob Mulders)

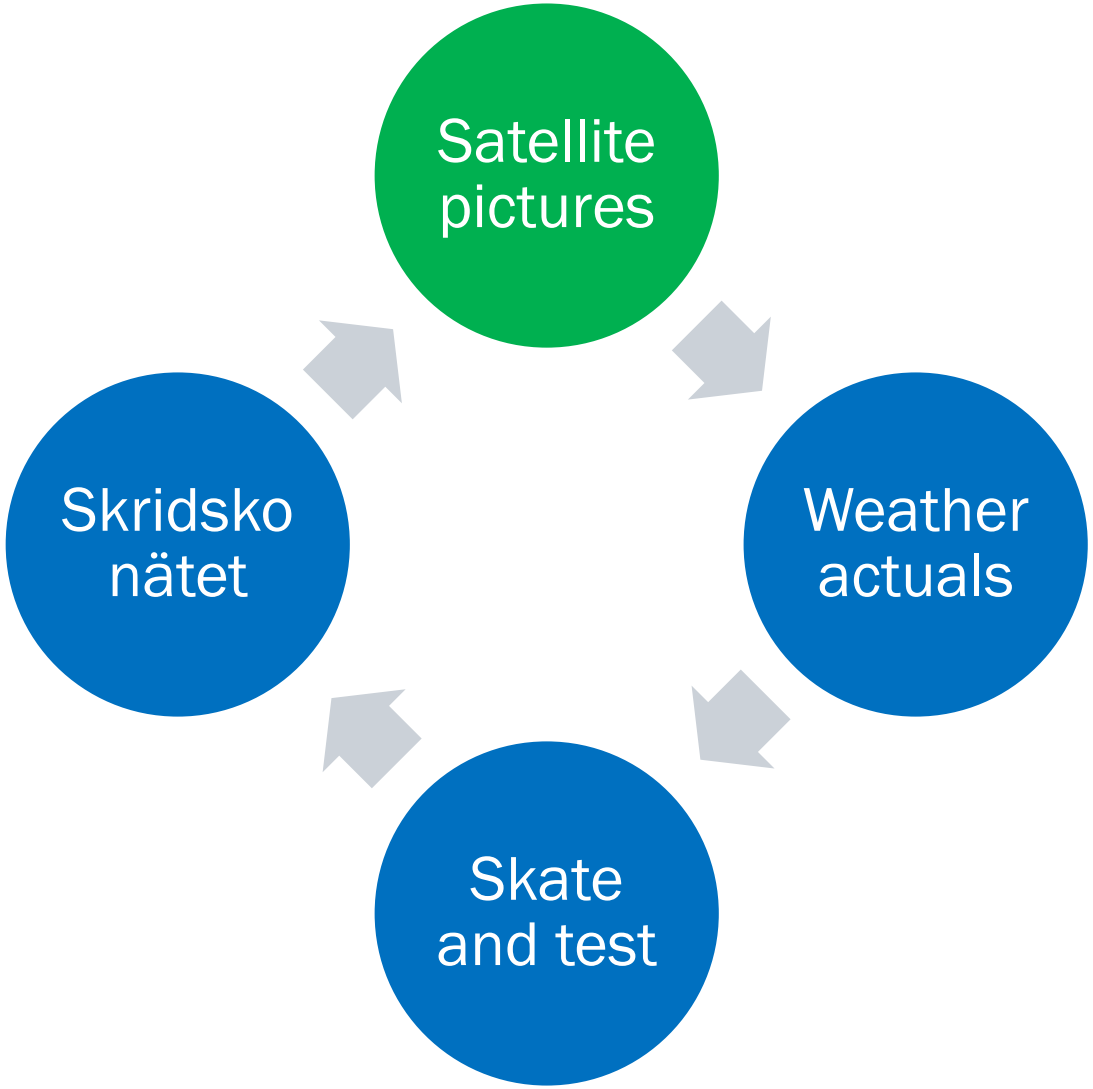
Islagd med vattenbegjuten kärnis men för tunnt, circa 3 - 5 cm.

Håkansöfjärden (Rob Mulders)

Vattenbegjuten kärnis, mestadels mellan 8-12 cm. Nyare generationer finns i sund och mot Davids stenar. Lätt överis i morse försvann snabbt idag pga värme och vatten på isen. All snö borta.

Nördfjärden (Rob Mulders)

Vattenbegjuten slät kärnis, mestadels mellan 8-12 cm. Tunnare is finns i sund och vid inlopp i staden.



DO NOT FORGET
For optimal use of satellite pictures, use ice information and weather actuals for explaining what's going on!