

# Environmental changes

Sentinel-1 CSAR EW acquired on **11 November 2014** at 00:14:49 UTC  
Sentinel-1 CSAR IW acquired on **17 November 2015** from 07:37:41 to 07:38:10 UTC  
Sentinel-2 MSI acquired on **31 December 2015** at 03:48:53 UTC  
Sentinel-1 CSAR IW acquired on **11 November 2016** from 07:37:48 to 07:38:17 UTC  
Sentinel-2 MSI acquired on **24 January 2017** at 03:42:31 UTC  
Sentinel-3 OLCI FR acquired on **26 May 2017** at 10:36:03 UTC

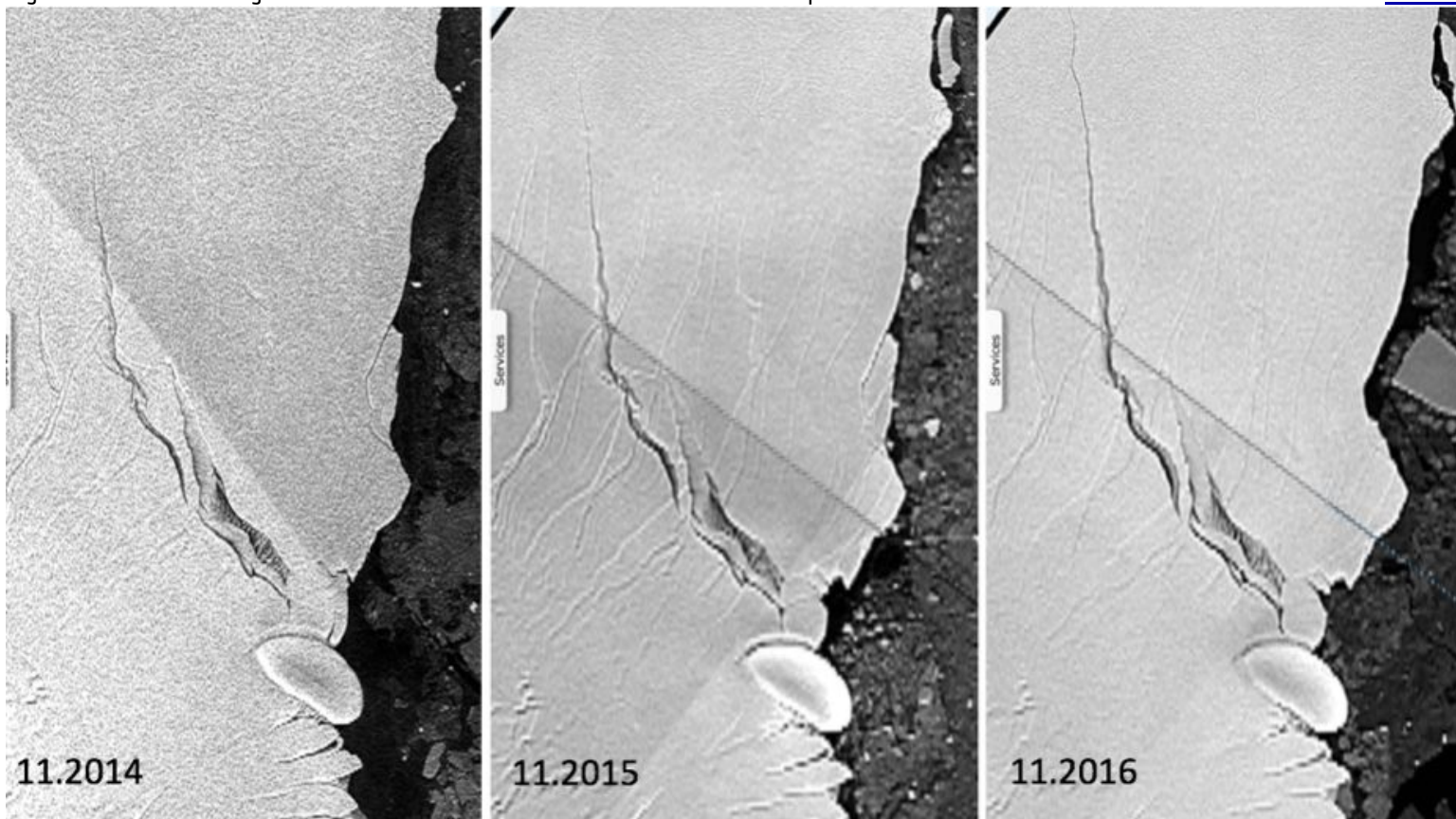
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Keyword(s): Environmental changes, anthropogenic impacts, Larsen C ice shelf, rift, climate change, melting ice, deforestation, sea level rise, Antarctic Peninsula, Cambodia, Asia, Amsterdam, Netherland



Fig. 1 - Sentinel 1A - Progression of the rift in Larsen C Ice Shelf - H/H colour composite.

[3D view](#)



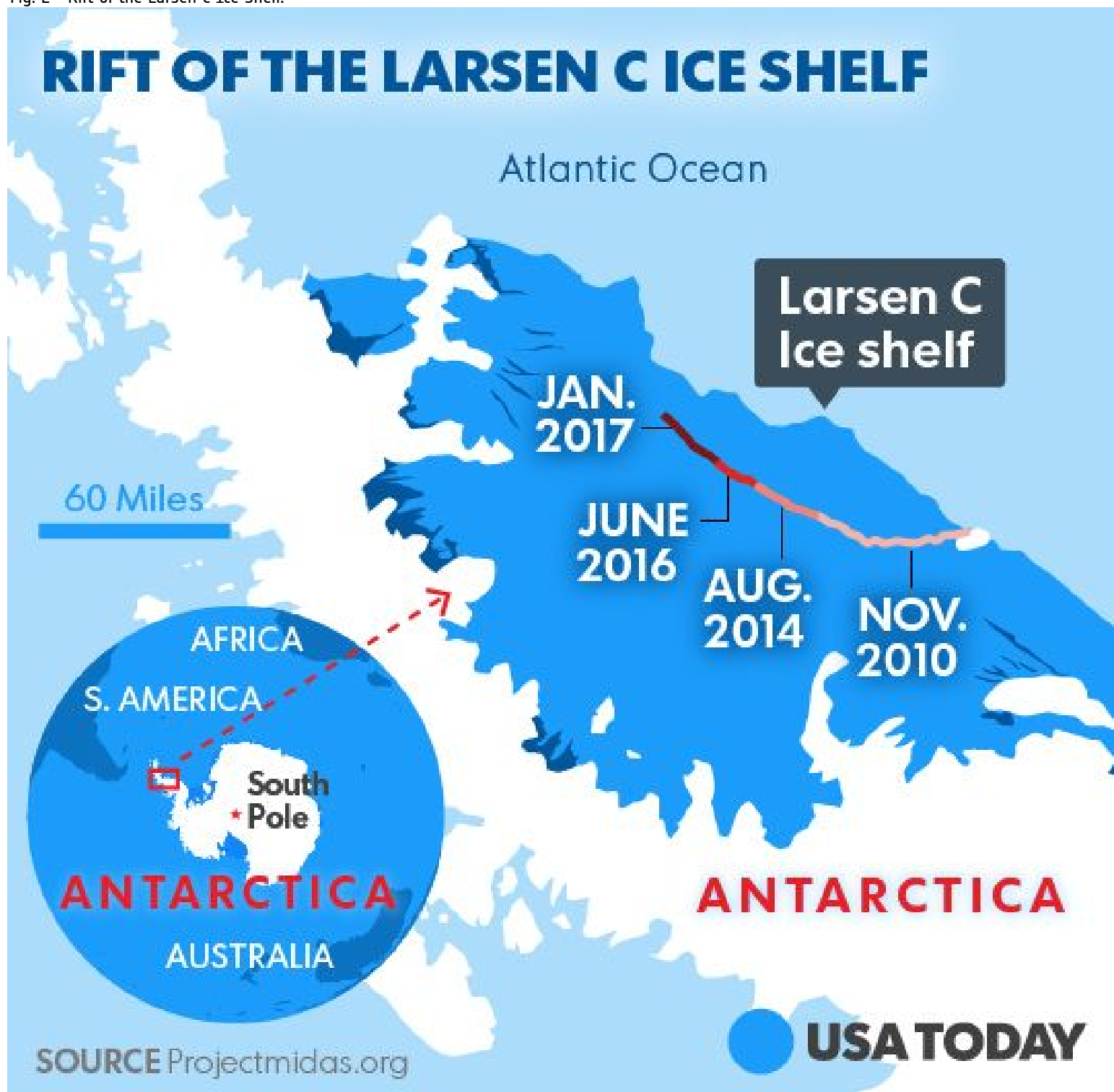
These images show the Larsen-C 180-kilometer-long rift opening over the last 3 years from Sentinel 1A.

*«The rift in Larsen C is likely to lead to one of the largest icebergs ever recorded. It is being monitored by researchers from the UK's Project Midas, led by Swansea University.*

Professor Adrian Luckman of Swansea University College of Science, head of Project Midas, [described](#) the latest findings:

*"In the largest jump since January, the rift in the Larsen C Ice Shelf has grown an additional 17 km (11 miles) between May 25 and May 31 2017. This has moved the rift tip to within 13 km (8 miles) of breaking all the way through to the ice front, producing one of the largest ever recorded icebergs. The rift tip appears also to have turned significantly towards the ice front, indicating that the time of calving is probably very close."»*

Fig. 2 - Rift of the Larsen C Ice Shelf.



«Larsen C is approximately 350m thick and floats on the seas at the edge of West Antarctica, holding back the flow of glaciers that feed into it.

[Professor Luckman added:](#) "When it calves, the Larsen C Ice Shelf will lose more than 10% of its area to leave the ice front at its most retreated position ever recorded; this event will fundamentally change the landscape of the Antarctic Peninsula.

We have previously shown that the new configuration will be less stable than it was prior to the rift, and that Larsen C may eventually follow the example of its neighbour Larsen B, which disintegrated in 2002 following a similar rift-induced calving event."»



Fig. 3 - Sentinel 2A - Deforestation in Cambogia - 4,3,2 Natural colour composite.

[3D animation](#) [3D view](#)



According to [The Cambodia Daily](#), "Forest loss in Cambodia between 2001 and 2014 accelerated at a faster rate than in any other country in the world."

Indeed, as reported by [Ifscience](#), "Cambodia has been losing these precious areas as a result of corporations using permits illegally to clear out land. The country is losing around 2,000 square kilometers of its ancient forests every year".

Fig. 4 - Cambodia, the world's fastest acceleration of deforestation.



This [image](#) from the Asian Correspondent was taken near Pailin, Cambodia, where much of the forest has been destroyed, replaced by roads, exposed soil, cropland and large-scale rubber plantations.

According to the magazine, the primary cause of Cambodia's alarming rate of deforestation is large land concessions granted to large-scale agricultural companies.



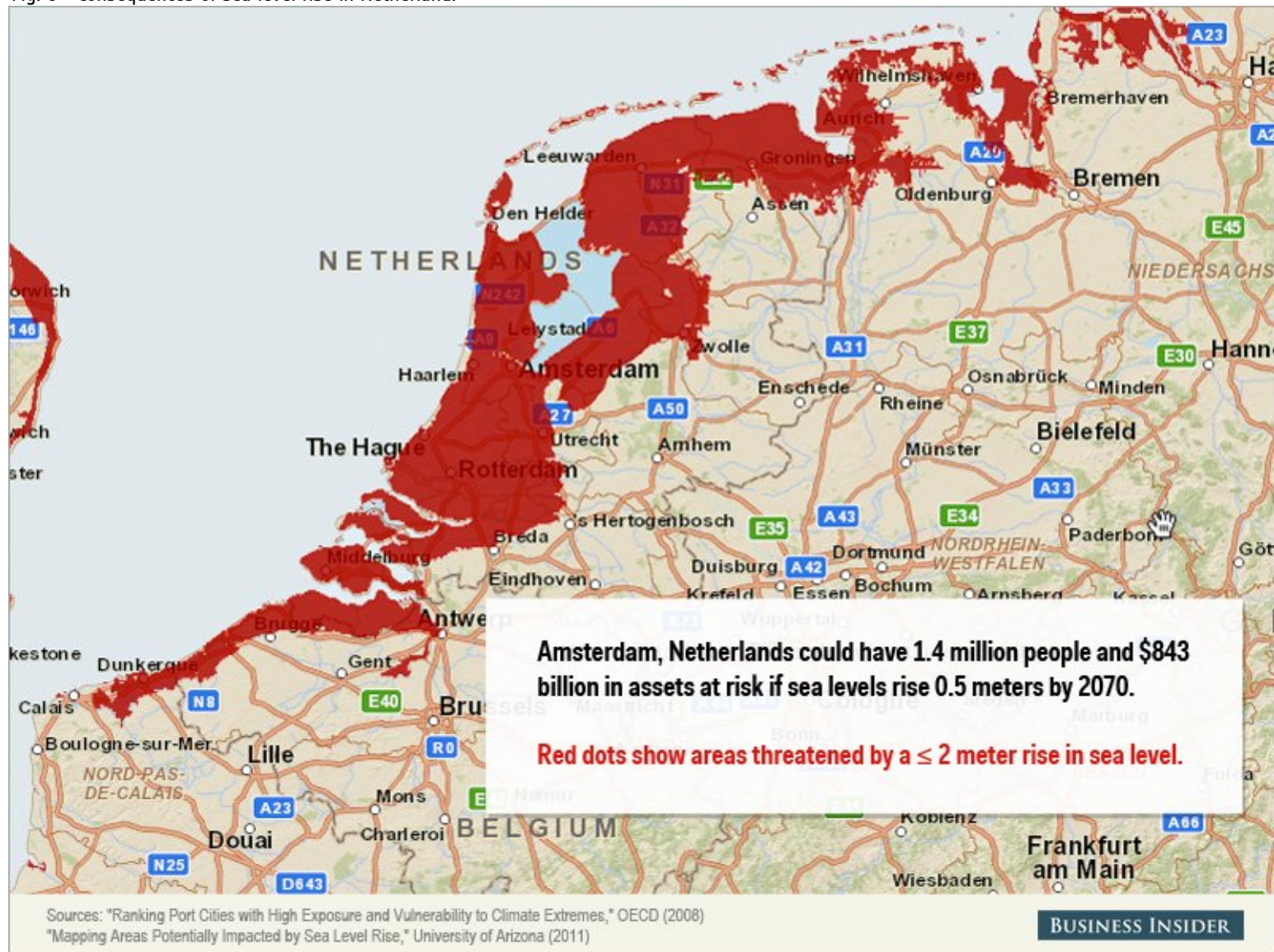
Fig. 5 - Sentinel 3A OLCI - Amsterdam's city below sea level - 7,6,4 Natural colour composite.

[3D view](#)















[Reuters](#) published that in Amsterdam, *"some 70 percent of the country's economic output is generated below sea level, protected by a complex-system of ancient dikes and modern cement barriers that hold back water from the sea and the multitude of rivers that weave through the country. Now, with scientists' predicting that sea levels will rise by about one meter (3.3 feet) this century, the Dutch are reversing centuries of tradition to create natural flood plains for rivers as well as rebuild mangrove swamps as buffers against the sea."*

Fig. 6 - Consequences of sea level rise in Netherland.



*The views expressed herein can in no way be taken to reflect the official opinion of the European Space Agency or the European Union.*

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