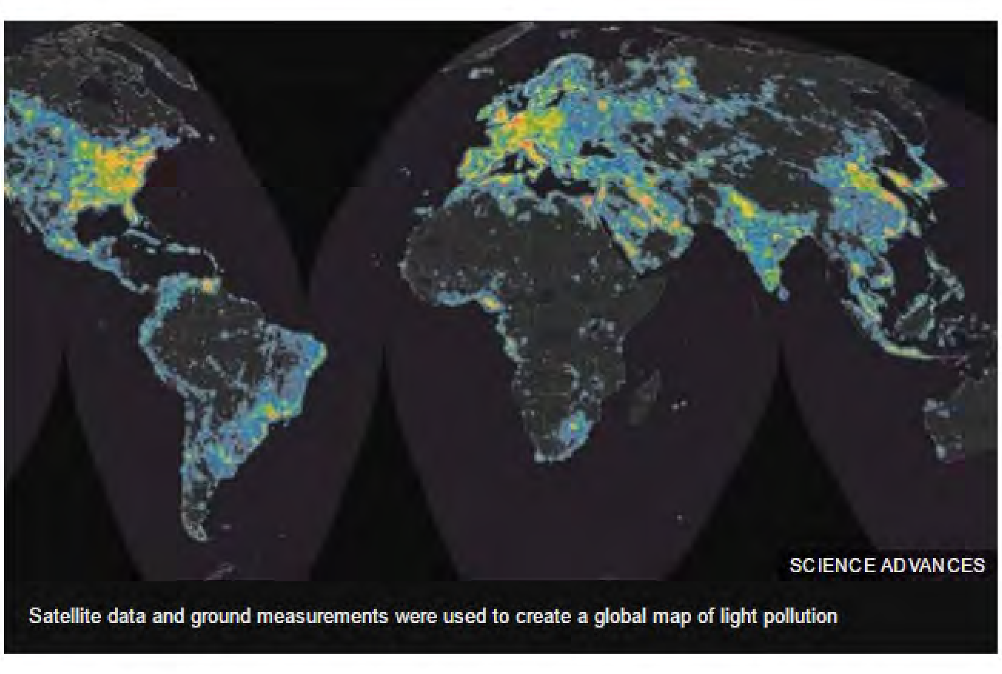
http://www.bbc.com/news/science-environment-36492596

Light pollution 'affects 80% of global population'

By Rebecca Morelle
Science Correspondent, BBC News

10 June 2016 | Science & Environment



Satellite data and ground measurements were used to create a global map of light pollution

More than 80% of the world's population lives under light-polluted skies, a study suggests.

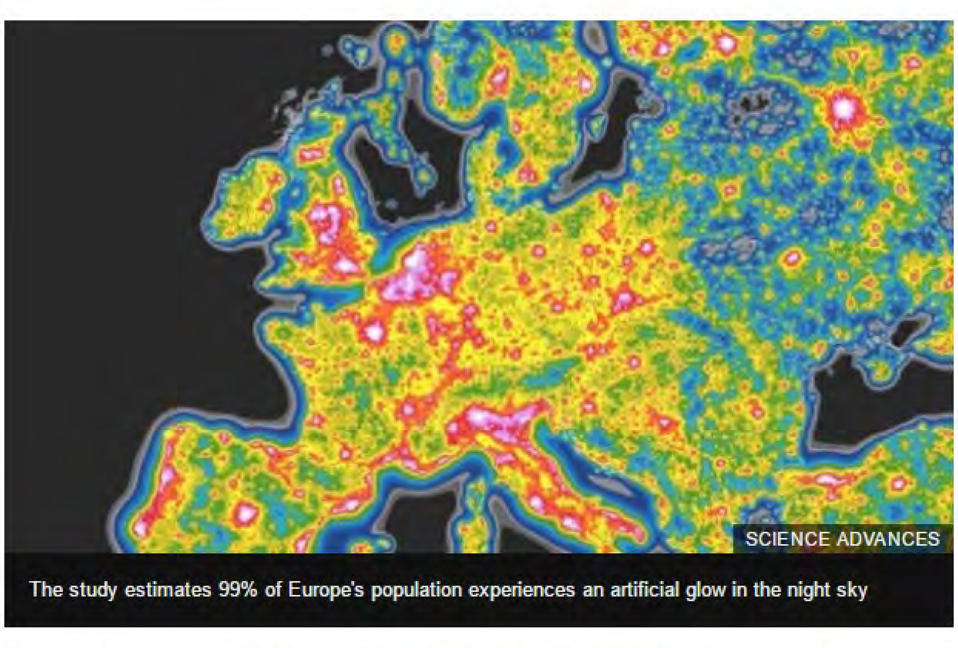
Scientists explain in **Science Advances** how ground measurements and satellite data were used to create an atlas of a world brightened by artificial lights.

It reveals that the population of Singapore, Kuwait and Qatar experience the brightest night skies.

Conversely, people living in Chad, Central African Republic and Madagascar are least affected by light pollution.

Dr Christopher Kyba, from the German Research Centre for Geosciences in Potsdam, said: "The artificial light in our environment is coming from a lot of different things.

"Street lights are a really important component, but we also have lights from our windows in our homes and businesses, from the headlights of our cars and illuminated billboards."



The study estimates 99% of Europe's population experiences an artificial glow in the night sky

The brightness map reveals that 83% of the world's population, and 99% of Europeans and people in the US, live under skies nearly 10% brighter than their natural starry state.

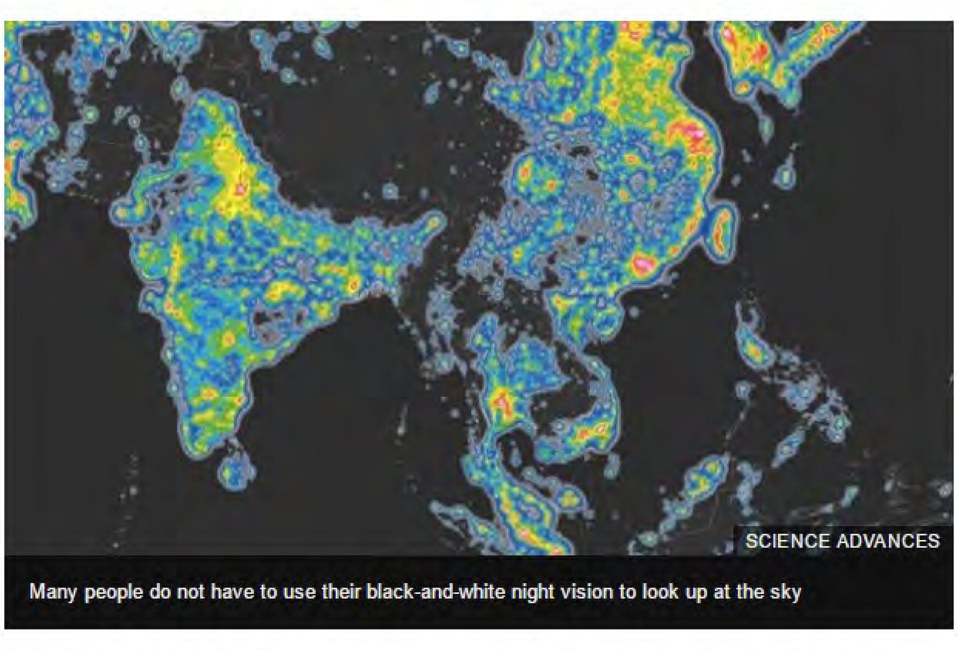
For some though the artificial glow was even greater, said Dr Kyba.

"About 14% of the world's population don't even use their night-time vision," he explained.

"The night is so bright that they use their colour daytime vision to look up at the sky."

In Singapore, the entire population lives under this extreme level of artificial night-time brightness, and it is a problem affecting many other parts of the world.

"Twenty percent of the people in Europe and 37% of the people in the US don't use their night vision," said Dr Kyba. "It's really an enormous number."



Many people do not have to use their black-and-white night vision to look up at the sky

He added: "In the UK, 26% of people are using colour vision and not night vision."

The researchers warn that nights that never get darker than twilight are affecting nocturnal animals, while in humans, the trend has been linked to sleep disorders and disease.

Dr Kyba said that while lighting was important for development and safety, technology needed to improve.

"There are a lot of street lights that are not particularly well designed," he explained.

"They shine light into areas that are not useful - so up into the sky, for example, isn't really useful for anybody.

"There's a big difference between having a well-lit street, which means everybody can get around really easily and safely, and a brightly lit street, which could mean there's too much light and it's not helping anyone."



The researchers say better designed street lighting could help to cut light pollution

The paper suggests that lights that are shielded, or can dim or turn off while not being used, could help to reduce light pollution as well as save energy.

The researchers add that light pollution is hindering astronomy: a third of the world now cannot see the Milky Way.

Follow Rebecca on Twitter: **@BBCMorelle**



One third of the world cannot now see the Milky Way

Share this story About sharing

More on this story

Suomi satellite pictures Earth in black
6 December 2012

Festival lights viewed from space
17 December 2014

Light pollution: Is there a solution?
18 January 2012

Light pollution 'saturates' UK's night skies
11 April 2012

Related Internet links

Science Advances: The new world atlas of artificial night

The BBC is not responsible for the content of external Internet sites

Science & Environment >


El Niño likely to boost CO2 in 2016
13 June 2016 | Science & Environment


Spread of human disease from rat mapped
13 June 2016 | Science & Environment


Would Brexit compromise the future of UK science?
13 June 2016 | EU Referendum

More Videos from the BBC

Recommended by Outbrain


Widow hears husband's voice via teddy


Selling sex to fund a ticket home


London's first naked dining experience opens


'We're told to wear a headscarf'


'Grim Sleeper' serial killer sentenced to death


Indonesia 1965 killings: 'I killed too many to count'

Elsewhere on BBC

Recommended by Outbrain


BBC News
Harassment: Girls 'wear shorts under school skirts'


BBC Future
How it feels to live with the possibility of 'sudden death'


BBC News
'Risk' doctor delivered Samantha Cameron's child despite warnings


BBC Culture
What is 'proper English'?


BBC News
Edinburgh Gateway railway station 'extensively damaged'


BBC Culture
The most dazzling city of the ancient world

Top Stories

Vigils held for Orlando shooting victims
Vigils have been held in Orlando, Florida, and around the world for victims of Sunday's deadly gun attack on a gay nightclub.
1 hour ago

'IS link' to French policeman's killer
4 hours ago

Philippines condemns killing of Canadian
2 hours ago

Features & Analysis


Hard core
The football fans who come from Russia with violence


A brighter future
Can tourism help rebuild East Timor?


Viewpoint
Why Pakistan is isolated by India's nuclear lobbying


'Revolutionary president'
The nationalist TV show run by Orlando gunman's father


Land and language
The first South Africans fight for their rights


I hid her in a cupboard
Living with my lesbian partner where it's illegal to be gay


Fictions and Labyrinths
Why Jorge Luis Borges' influence continues to grow

Most Popular

Read | Watched

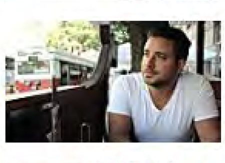
1. FA raises concern over Lille security
2. Malaysia bans first Islamic airline
3. 'IS link' to French policeman's killer
4. Is Russia exporting a new breed of football hooligan?
5. Obesity boom 'fuels malnutrition rise'
6. Vigils held for Orlando shooting victims
7. Living with my lesbian partner where it's illegal to be gay
8. Barcelona pays fine for Neymar transfer
9. How do you get denied a gun in Florida?
10. Brexit 'could end political civilisation'

From Around the Web

Promoted content by Outbrain

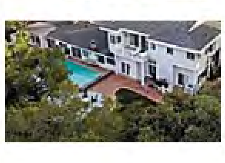

The most addictive game of the year! Play with 15...
Forge Of Empires


Discover why millions of players can't put this...
Sparta


Aged 35 he speaks 11 languages - his 11 tricks on how
Babbel


See the Best Luxury Real Estate in the World
Mansion Global by Do...


I bet you're gonna love this game :) Build your city!
om.elvenar.com


Want to See How Celebrities Really Live? See Inside...
Mansion Global by Do...

Ads by Google

Fact Check: Qatar 2022
Are the outlandish claims against Qatar based on fact? (Hint: No)
blogs.channel4.com/

LED Bulbs
Import Top LED Bulbs from China
Contact Quality Manufacturers Now
www.globalmarket.com

Apply For SSI Disability
Get Your Full Disability Benefits. 100% Free To Start (Recommended)
socialsecuritylawfirms.com

Copyright © 2016 BBC. The BBC is not responsible for the content of external sites. Read about our approach to external linking.