



Photo: NASA



We are Dumping 110 Million Tons of Manmade Global Warming Pollution into the Atmosphere every 24 Hours





THAWING PERMAFROST

AIR TRANSPORT

COAL MINING

OIL PRODUCTION

COAL PLANTS

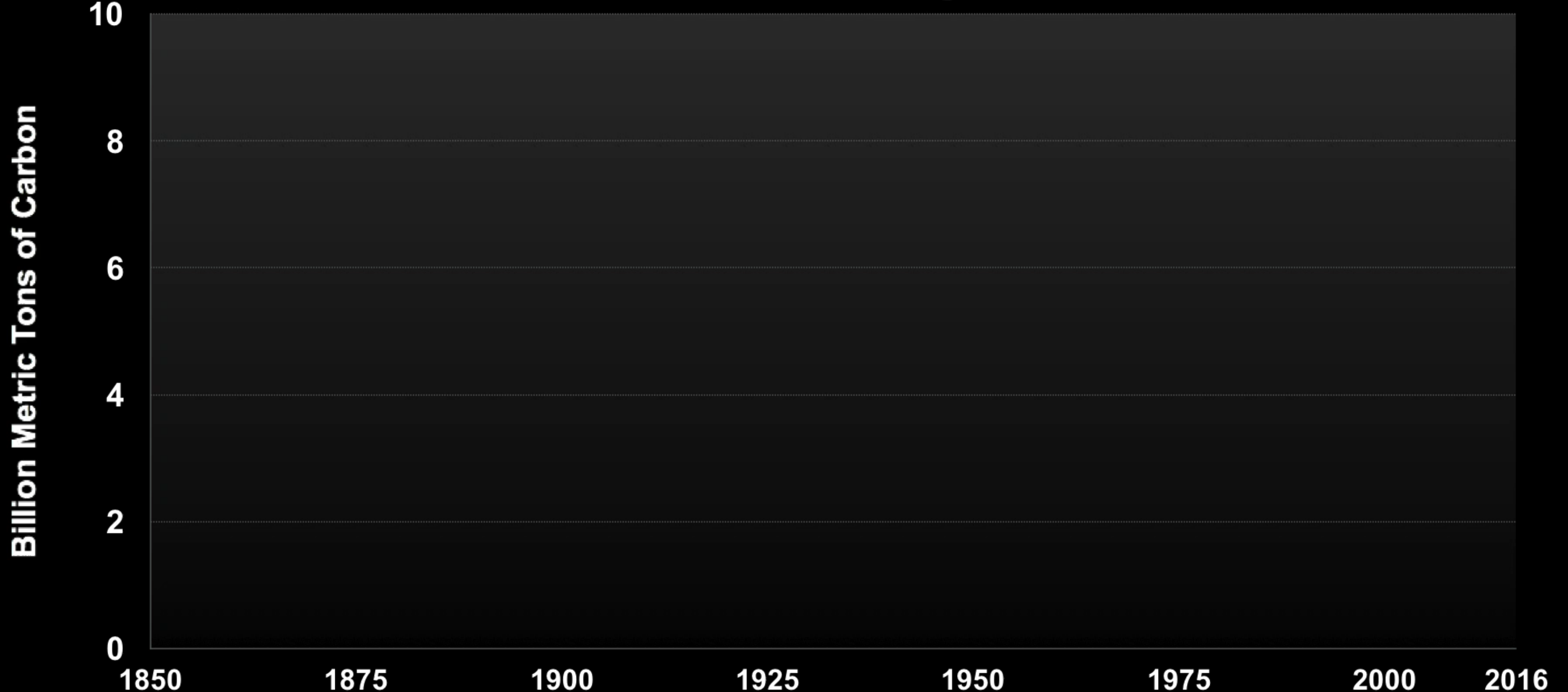
INDUSTRIAL PROCESSES

FERTILIZATION

LAND TRANSPORT

LANDFILLS

The Largest Source of Global Warming Pollution Is the Burning of Fossil Fuels



Data: U.S. Department of Energy/CDIAC

Two main sources of emissions in CKL:
Buildings and Vehicles



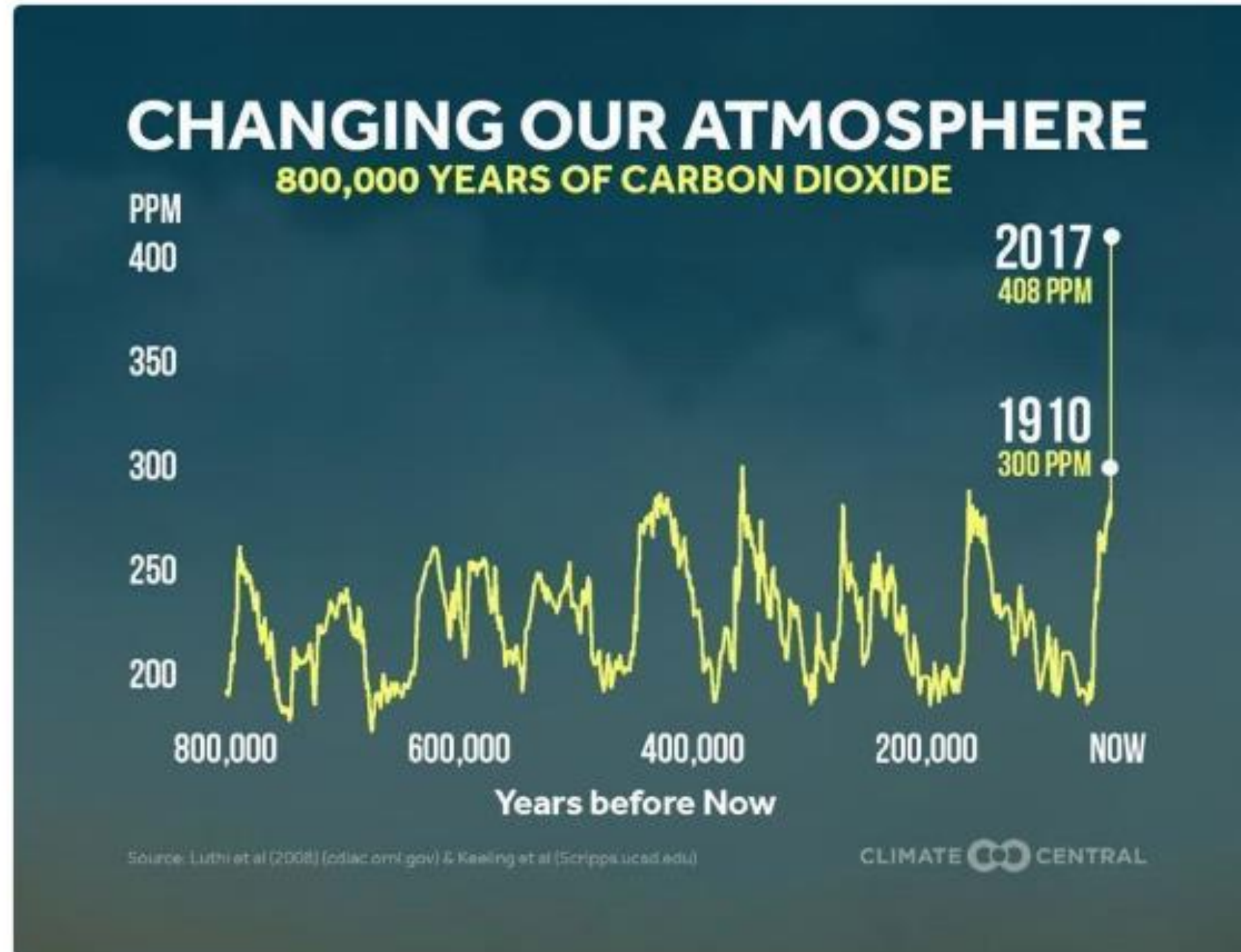


Climate Central

@ClimateCentral

Follow

800,000 years of CO₂, one graph



10:27 AM - 16 May 2018

The Top 24 Greenhouse Gas Emitters

- 
- | | | |
|------------------|--------------------|------------------|
| 1. China | 9. Germany | 17. South Africa |
| 2. United States | 10. Mexico | 18. Malaysia |
| 3. India | 11. Iran | 19. France |
| 4. Russia | 12. Australia | 20. Italy |
| 5. Indonesia | 13. South Korea | 21. Argentina |
| 6. Brazil | 14. United Kingdom | 22. Venezuela |
| 7. Japan | 15. Saudi Arabia | 23. Turkey |
| 8. Canada | 16. Nigeria | 24. Thailand |

The 17 hottest years since the year 2001

Occurred Since the Year 2001

2016

2017

2015

2014

2010

2005

2007

2013

2009

2012

2006

1998

2002

2003

2011

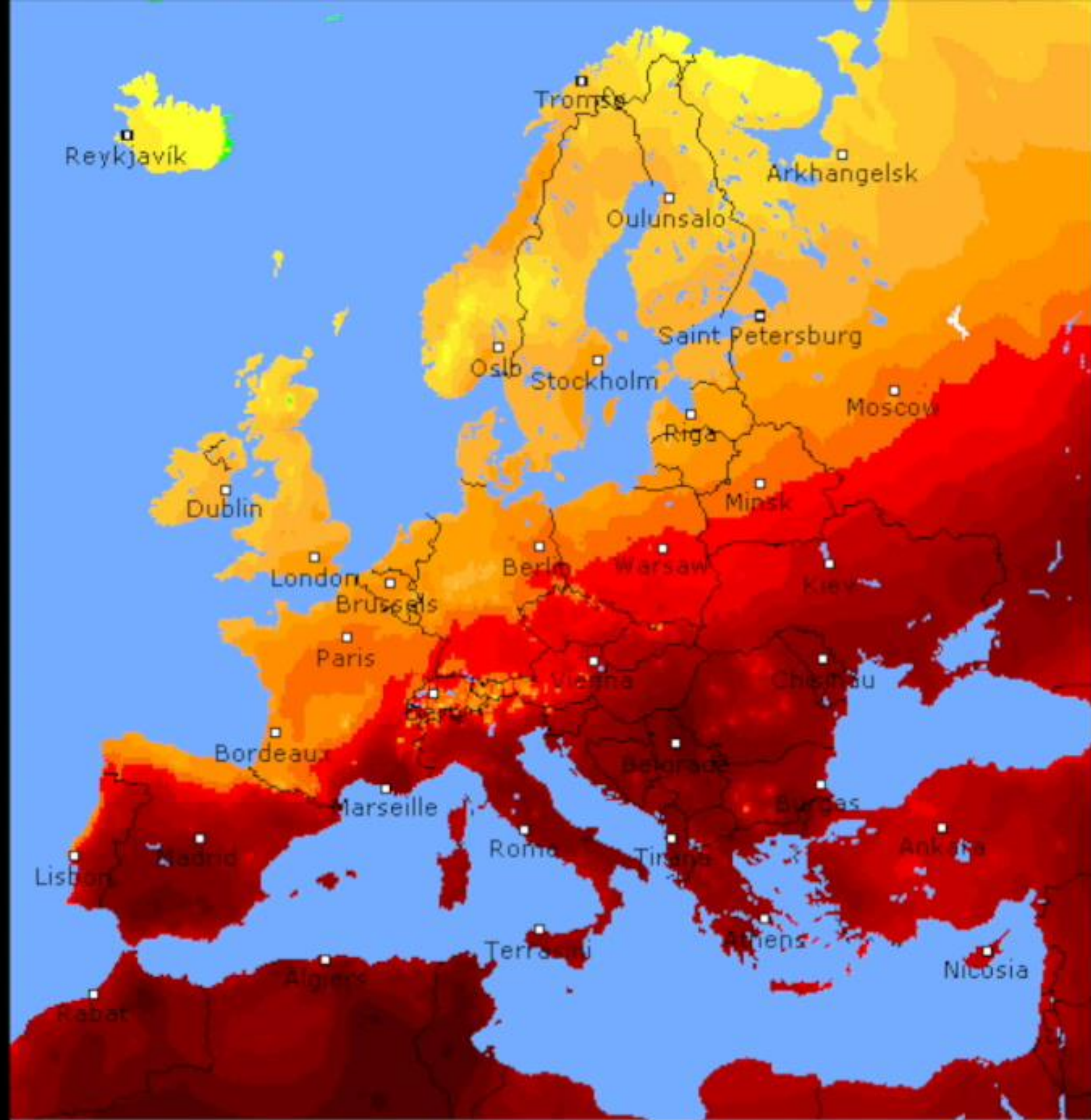
2004

2001

European Heat

August 5 – 11, 2017

Much of Europe was
placed on “red alert”
as temperatures
exceeded **44° C**
(111° F).





MEDIA ANALYSIS | 26 July 2018 ⌚ 12:36

Media reaction: The 2018 summer heatwaves and climate change



Collage of global newspaper front pages covering the 2018 summer heatwave

Very hot days (+30°C) (RCP 8.5)

Mean value

Recent past
1976-2005

5.1



Immediate future
2021-2050

20.8

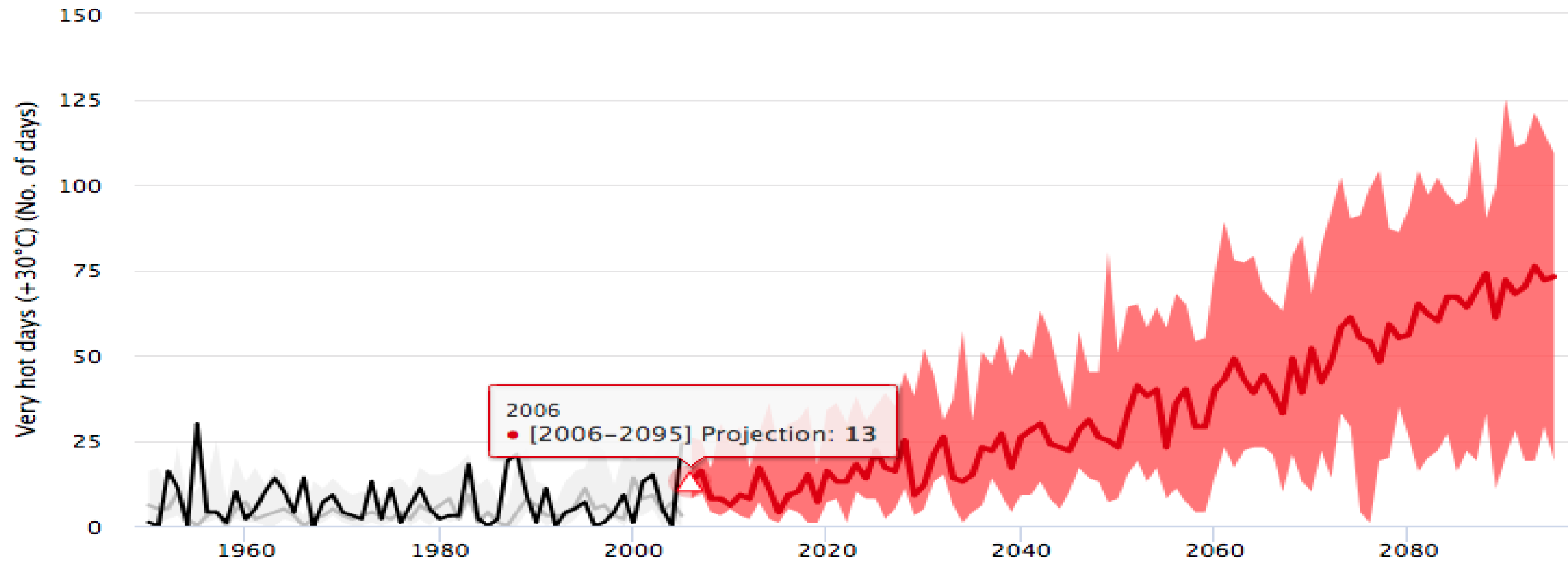


Near future
2051-2080

43.8

Municipality: Lindsay

Very hot days (+30°C) (RCP 8.5)





WATCH LIVE: Breakfast Television

Toronto in for 30th day of over 30 C weather

BY NEWS STAFF

POSTED AUG 12, 2016 5:45 AM EDT

Total of 33 for the 2016 summer
historical average is 6-10 days

[LOCAL](#)[WEATHER](#)

Between June and Sept. 2018 Ontario had more than 32 days over 30 degrees with an additional 10 days over 29 C with humidexes in the 40+ readings



May 2018 in Ontario
was the warmest May on record
with 26 days above normal

**“From December 2017 to November 2018 every season
came out warmer than normal .”**

David Phillips, Environment Canada

Montreal, Canada

July 5, 2018



At least 90 people died in Quebec during the July 2018 heat wave as ambulance services were overwhelmed.

Data: Global News Canada

Photo: © 2018 Graham Hughes/The Canadian Press via AP

The temperature at the
North Pole was **50° F** (28° C)
hotter than normal
on February 25, 2018.



Arctic experiences one of its warmest winters on records, leaving scientists stunned



Eric Holthaus 

@EricHolthaus



The northernmost permanent weather station in the world, just 440 miles from the North Pole, has warmed to 43°F today -- in the middle of months-long darkness during what is normally the coldest time of the year.

This is simply shocking. I don't have the words.

twitter.com/ZLabe/status/9...

4:23 PM - Feb 24, 2018

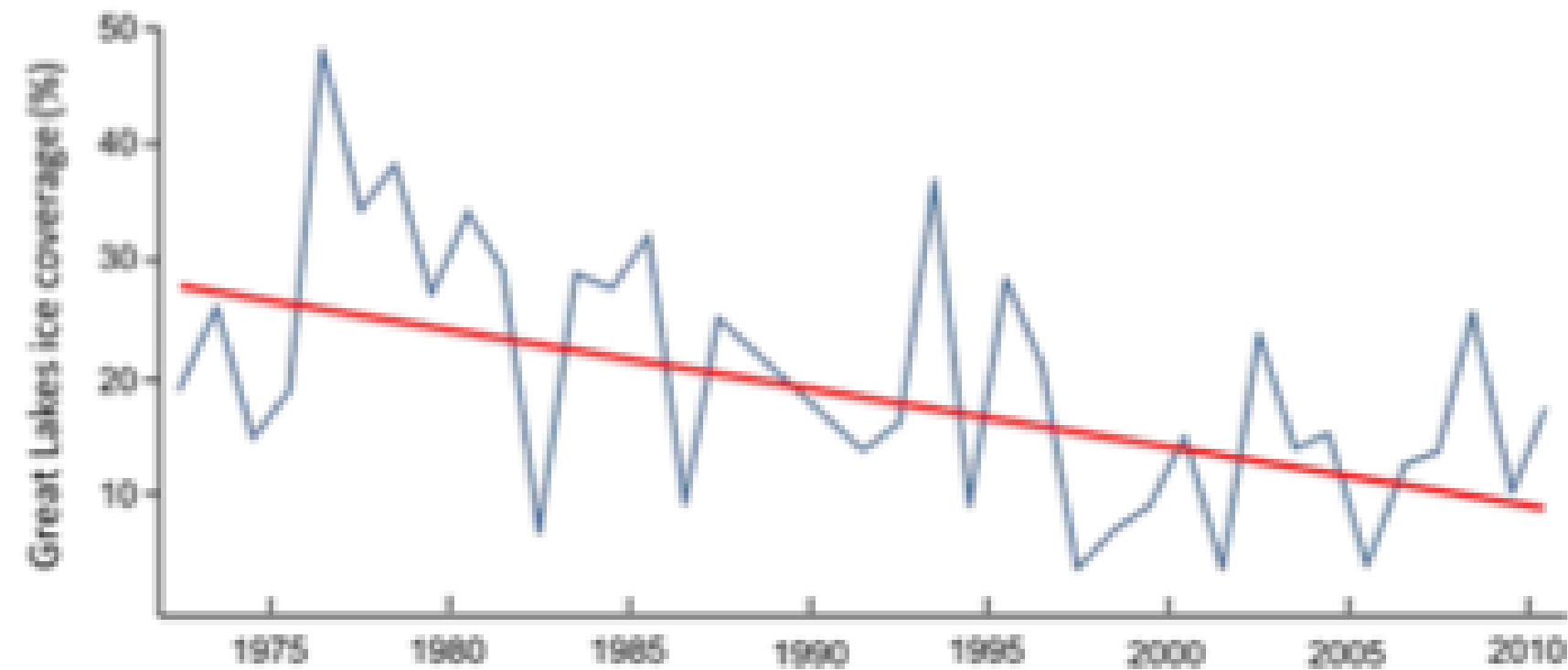
**The North Pole has now experienced
mid-winter heatwaves three years in a row:**

2016

2017

2018

CHANGES IN GREAT LAKES ICE COVER



Change in ice cover on the Great Lakes between 1972 and 2011

Source: Based on Andresen (2013) from the original by Wang et al. (2012)

Positive proof of global warming.



**18th
Century**

1900

1950

1970

1980

1990

2006

With **each additional 1° (C)** of
Temperature, **5%** more water
vapor over the cycle. **held** than there
at **only 30 years ago**
increases by 7%

So the downpours get bigger

Phoenix, Arizona

July 18, 2016



Supercell near Chamberlain, Sask. July 1, 2016



Dickinson, Texas

August 27, 2017

Residents of this nursing home were trapped in flood waters for hours before being rescued.

There have been
sixteen 1-in-1,000 year
downpour **events** in the U.S.
since May of 2010



Peterborough, ON July, 2004



174mm of rainfall. That translates to 14 billion litres of rain.

Peterborough, Ontario

April 18, 2014





TORSTAR NEWS SERVICE

A man pushes his car along Toronto's flooded Don Valley Parkway during a 2013 rainstorm. Large areas of Ontario and Quebec -- including all parts of Toronto -- are at risk of flooding with as much as 90mm of rain expected through Saturday. A record-breaking 126mm in total fell in 3 hours



Amber Hawkins checks out a car parked in the rear of a downtown Chatham, Ont., home along the Thames River on Friday, February 23, 2018. (DAN JANISSE/The Windsor Star)

APRIL 2018

91 mm precip fell (April avg. 65mm)



May 2018

Extreme wind storm causes extensive damage

Wind gusts up to 120kph leave thousands of people in the Kawarthas without power

By **kawarthaNOW** - Published May 5, 2018



Insured Losses, Major Ontario Storms, 2018

January: a winter storm across Ontario:	\$9 million
February: a storm with flooding in London, Cambridge & GTA -	\$46 million
Early April: a wind/rain storm in S. Ontario	\$80 million
Mid-April: an ice storm in the GTA, SW and eastern Ontario:	\$220 million
May: a wind/rain storm hit Hamilton and GTA:	\$500 million
August: Toronto area rain storm:	\$80 million
September: 6 tornadoes near Ottawa PUSH TOTAL DAMAGES OVER	

\$1.2 BILLION

The same extra heat that evaporates more water from the ocean, causing bigger downpours and floods...

Ontario farmers face wilted crops, lost profits due to severe drought

By [Peter Goffin](#) in [News](#) | July 7th 2016

The National Observer



Water woes persist long after this summer's drought

What do you do? Rural residents look for advice and hope at well-management workshop

NEWS

Dec 07, 2016 by Denis Grignon Kawartha Lakes This Week



**“And we expect another doubling to quadrupling
of fire over this next century.**

**We attribute this
— and I’ll be quite clear —
to human-caused climate change.”**

**Mike Flannigan, Professor of Wildland Fire
University of Alberta**

April 2013

Killarney residents flee their homes as Parry Sound 33 fire rages

By The Canadian Press
Tues., July 31, 2018



Fires: year to date

The figures below represent the total number of forest fires inside Ontario's fire region for the 2018 fire season, as they compare to the 2017 season and to the ten year average.

2018

1325

fires

276,356 hectares burned

2017

776

fires

111,955 hectares burned

10 year avg

757

fires

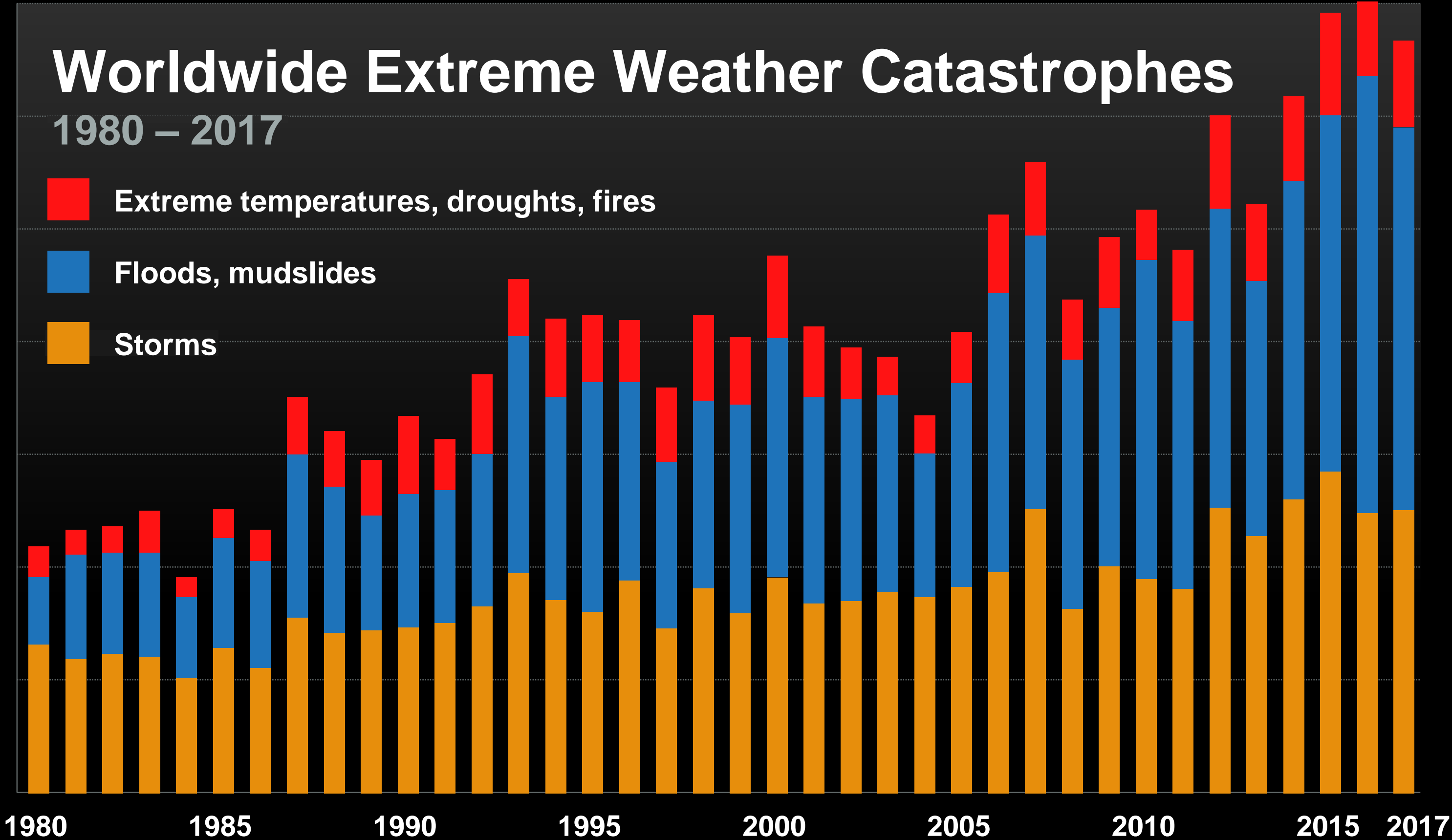
111,487 hectares burned

Worldwide Extreme Weather Catastrophes

1980 – 2017

Number of Events

- Extreme temperatures, droughts, fires
- Floods, mudslides
- Storms



Data: 2017 Munich Re, Geo Risks Research, NatCatSERVICE. As of January 2018.

**“Climate Change
is a
Medical Emergency.”**

**Professor Hugh Montgomery, Co-Chair,
The 2015 Lancet Commission on
Health and Climate Change**

June 2015

Cases of Lyme Disease in Canada

2009 - 140

2017 - 1400 (980 in Ont)

In our health unit area:

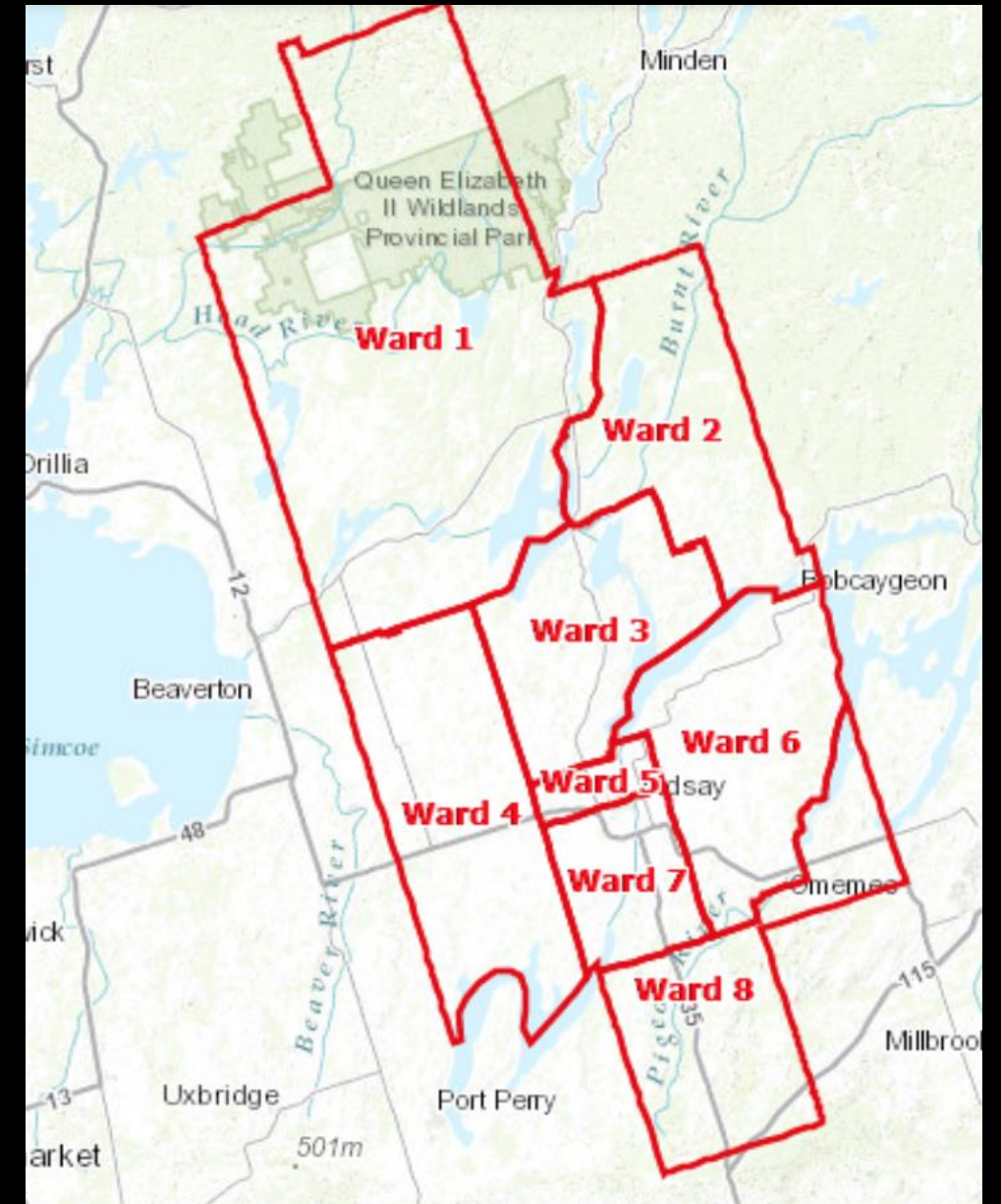
2008-2014: 6

2015-2018: 37



Climate Change Effects in the Kawartha Lakes

- **Temperature:** Warmer in every season.
- **Precipitation:** Winter and spring wetter and wilder.
- **Freeze-Thaw:** More cycles
- **Growing Season:** Starting earlier, ending later.
- **Lake Water:** Getting warmer.



Lindsay peach harvest 2017





ISTOCK.COM/CAP53

No more pancake syrup? Climate change could bring an end to sugar maples

Heat and Drought Could Threaten World Beer Supply

A new study says a warming globe will be bad news for barley, an essential ingredient in the world's most popular alcoholic beverage.

The New York Times



The Cost of Carbon



15,000+ scientists sign environmental 'warning to humanity'

November, 2017



Report released Oct. 8, 2018

**WE HAVE
12 YEARS
TO REDUCE
EMISSIONS
BY
45%**

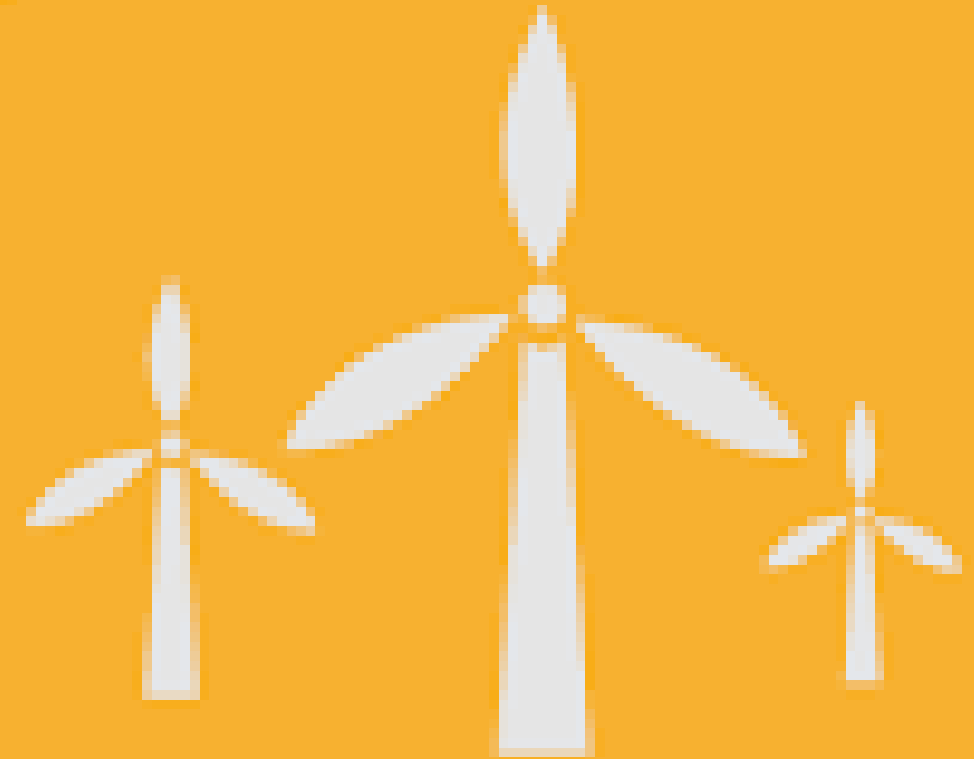
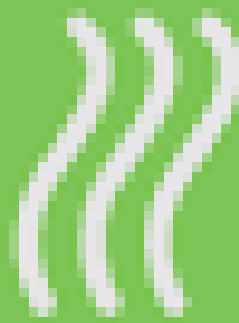
We have 12 years to limit climate change catastrophe, warns UN

Urgent changes needed to cut risk of extreme heat, drought, floods and poverty, says IPCC

● [Overwhelmed by climate change? Here's what you can do](#)



▲ A firefighter battles a fire in California. The world is currently 1C warmer than preindustrial levels. Photograph:



© EnergySogo

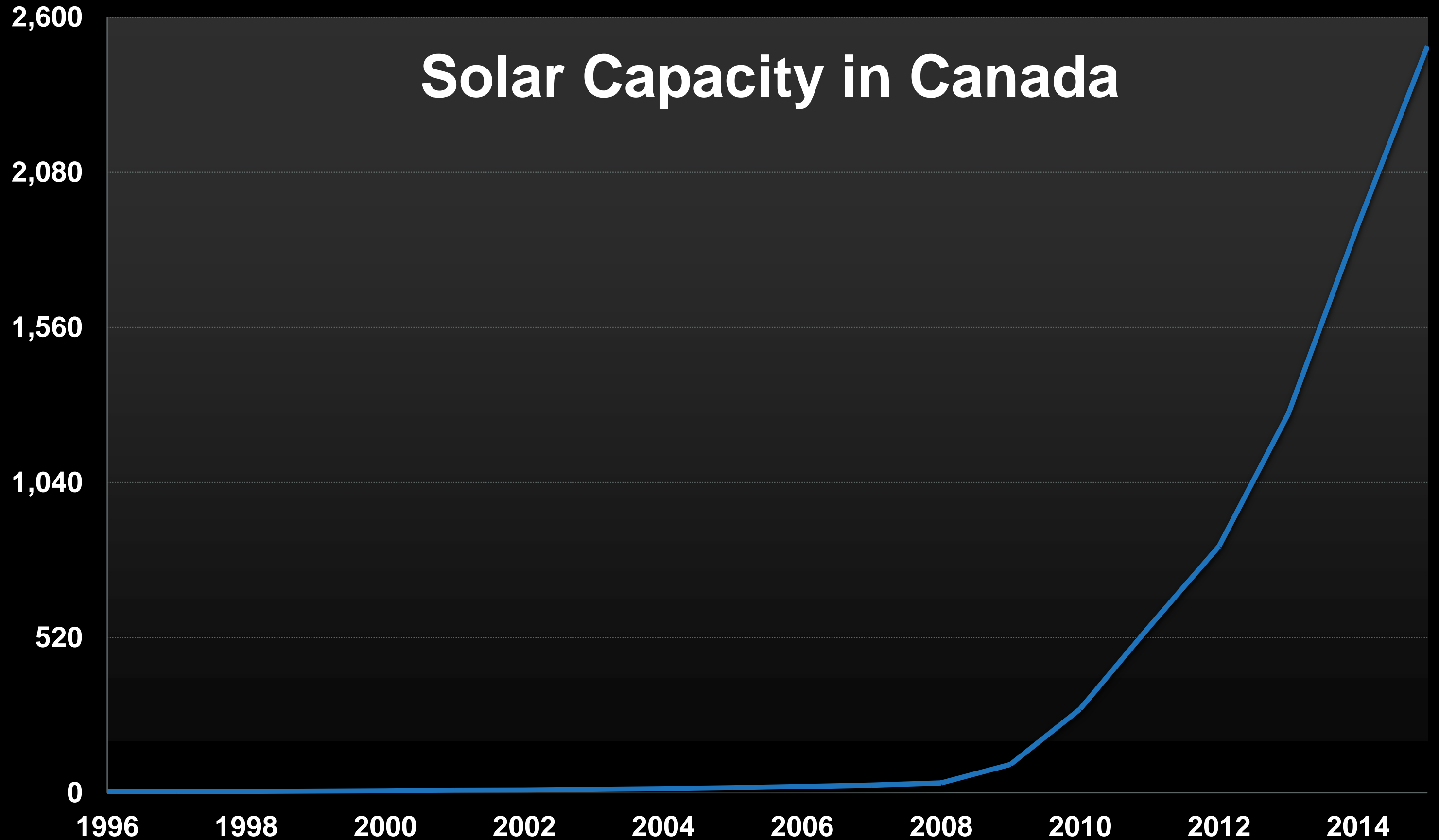


For the entire month of June
2017, 100% of Scotland's
electricity came from wind.

By 2018 more than 2/3's of
electricity for the entire year came
from green energy projects

Solar Capacity in Canada

Installed Solar Capacity (MW)



Cost of Crystalline Silicon Solar Cells

\$ Cost per Watt (Inflation Adjusted)

\$80
\$70
\$60
\$50
\$40
\$30
\$20
\$10
\$0

1976 1980 1984 1988 1992 1996 2000 2004 2008 2012 2016



Nimule, South Sudan

A nighttime photograph of the Eiffel Tower in Paris, France, illuminated with golden lights. The tower stands prominently on the left side of the frame. In the foreground, the Seine River flows, with a bridge and several boats visible. The city lights and the Paris skyline are visible in the background under a dark blue sky.

In the 2015 Paris Agreement,
every nation in the world agreed
to work together to achieve net zero
greenhouse gas emissions by mid-century.

The U.S. cannot legally
withdraw until the day after
the 2020 Presidential election.

U.S. Cities Committed to 100% Renewable Electricity



Data: The Sierra Club



SUPPORTING CITIES THROUGH THE
TRANSITION TO 100% RENEWABLE ENERGY
AND INCREASED ENERGY EFFICIENCY

In Canada:

Guelph

Woodstock

Toronto

Montreal

Vancouver

Nelson





Vancouver will use 100% green energy for electricity, heating and cooling within 20 years.

3 Canadian mayors join global leaders in signing net zero carbon buildings pledge



By [Hope Daley](#)

Aug 24, '18 2:46 PM EST

0

Follow ?





More Than 100 Cities Worldwide Now Powered Primarily by Renewable Energy

BY: GEORGINA GUSTIN

These 100+ cities get more than 70 percent of their electricity from wind, solar, geothermal and other renewables. That's up since the Paris climate agreement.

Credit: Robert Nickelsberg/Getty Images

Montreal and Laval: 40 electric buses on the streets by 2020



Reducing 160 tonnes of GHG's per bus per year



By Lucy Purdy / In Environment / Posted 15 June, 2018

Green buses: you wait for one, then 9,500 turn up (in China)

Every five weeks, 9,500 brand new electric buses take to the roads in China

<u><i>Country/State</i></u>	<u><i>Date of New Fossil Fuel Vehicle Phase Out</i></u>
Norway	2025
Netherlands	2030
India	2030
China	“In the near future”
Scotland	2032
France	2040
Britain	2040
Germany	Date of phase-out pending.
British Columbia	2040 ***

Report shows electric vehicle sales grew 68% in Canada last year

50,000 plug in vehicles in Canada, 2018

Fred Lambert - Feb. 9th 2018 11:41 am ET [@FredericLambert](#)

THE ALL-ELECTRIC 2018 BOLT EV

Forward thinking that takes you farther



[Build and Price](#)



This Uxbridge farmer is ditching diesel for a solar-powered tractor

By **MARCO CHOWN OVED** Investigative Reporter
Fri., Dec. 28, 2018

Toronto Star

Will electrify 20% of its
fleet by 2022
100% by 2028
Battery range of the
trucks: 800 km

Walmart Canada orders 30 more Tesla semi-trucks, aims to shed diesel

Sept. 2018



**“Solar-plus-batteries
is set to begin
a dramatic transformation
of human civilization.”**

Bloomberg View

April 8, 2015



Goals:

Save family farms

Stop Pollution

Reduce climate change

Make money



Paul Rak, founder, VeriForm

Green initiatives helped VeriForm:

- * save \$2 million
- * increase workforce
25%
- * cut CO2 emissions
from 261 tonnes in 2006
to 60 tonnes in 2017



**After closing the last
coal power plant in
Ontario,**

**2014 was the first
summer in 20 years
without a smog
advisory in Toronto**

Unique approach helps Durham Region, ON, plan effectively for climate change

The Regional Municipality of Durham's Community Climate Adaptation Plan is the 2018 winner in the climate change category of FCM's [Sustainable Communities Awards](#).



Local experts used scientific models of future weather conditions to identify risks from climate change and develop plans to adapt. (Photo: Regional Municipality of Durham, ON)

When it came time for the Regional Municipality of Durham, ON to develop its community climate adaptation plan, no single method suited its needs. So, staff developed a hybrid approach that combined two methodologies along with local expertise and scientific projections of future weather conditions in their area. The result is a far-reaching plan that will help the community adapt to the realities of climate change over the next 25 years.



We will reduce our contributions to climate change while increasing our ability to adapt to climate change conditions.

City of Kawartha Lakes corporate strategic plan framework





KAWARTHA LAKES

LIVING
HERE

THINGS TO
DO

BUSINESS &
GROWTH

MUNICIPAL
SERVICES

Kawartha Lakes Healthy Environmen...

The **Kawartha Lakes Healthy Environment Plan** is a comprehensive Strategy that will address climate change mitigation and adaptation. In other words, help us reduce our emissions while preparing for the impacts of climate change.

