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International Climate Science Coalition - Canada

Climate Propaganda in Canadian Schools, and How to Fight it

Tom Harris, B. Eng, M. Eng.
Executive Director
International Climate Science Coalition - Canada

Climate Anxiety among Children

Survey: Climate anxiety affects the daily life of nearly half of young people.

Most said they believe “the future is frightening”

K-12 Climate Change Education in B.C.

Last updated: **December 10, 2021**

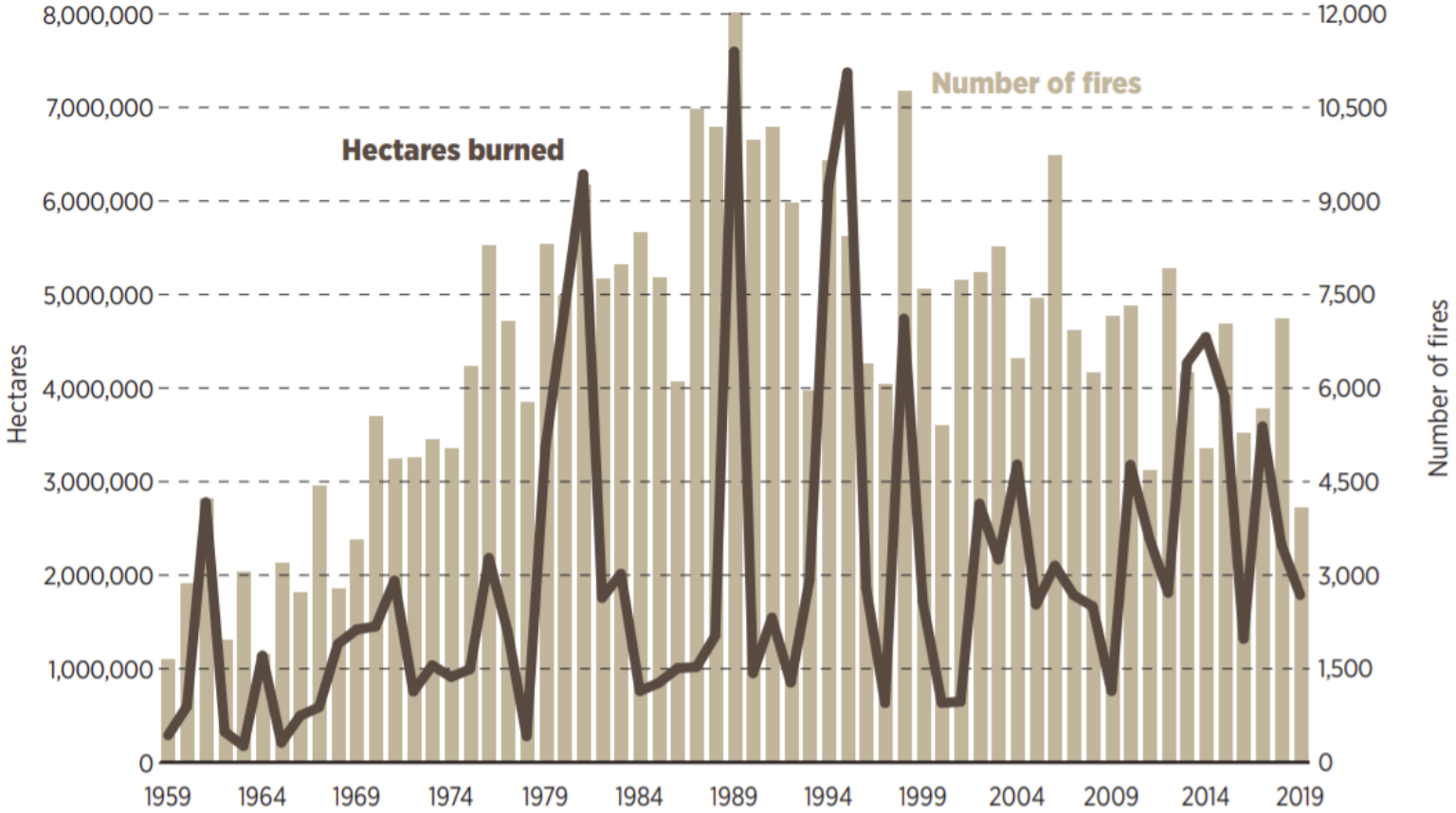
On this page:

Throughout B.C. and around the world, people and communities are experiencing the effects of climate change—from increasing wildfires, changes to ecosystems and loss of species, to frequent flooding, sea-level rise, longer summer droughts and heatwaves. The K–12 education system is rising to the challenge of educating students to build climate resilience in uncertainty, to mitigate the impacts of climate change through preparedness and adaptation, and to contribute to climate solutions as change-makers and leaders.

British Columbia government web page:

Throughout B.C. and around the world, people and communities are experiencing the effects of climate change—from increasing wildfires, changes to ecosystems and loss of species, to frequent flooding, sea-level rise, longer summer droughts and heatwaves.

Figure 1: Total area burned (hectares) and number of forest fires, Canada, 1959–2019



Source: Natural Resources Canada, 2020: Canadian National Fire Database (CNFDB).

More Flooding?

No, there have always been floods in history, and nothing we see now is abnormal.

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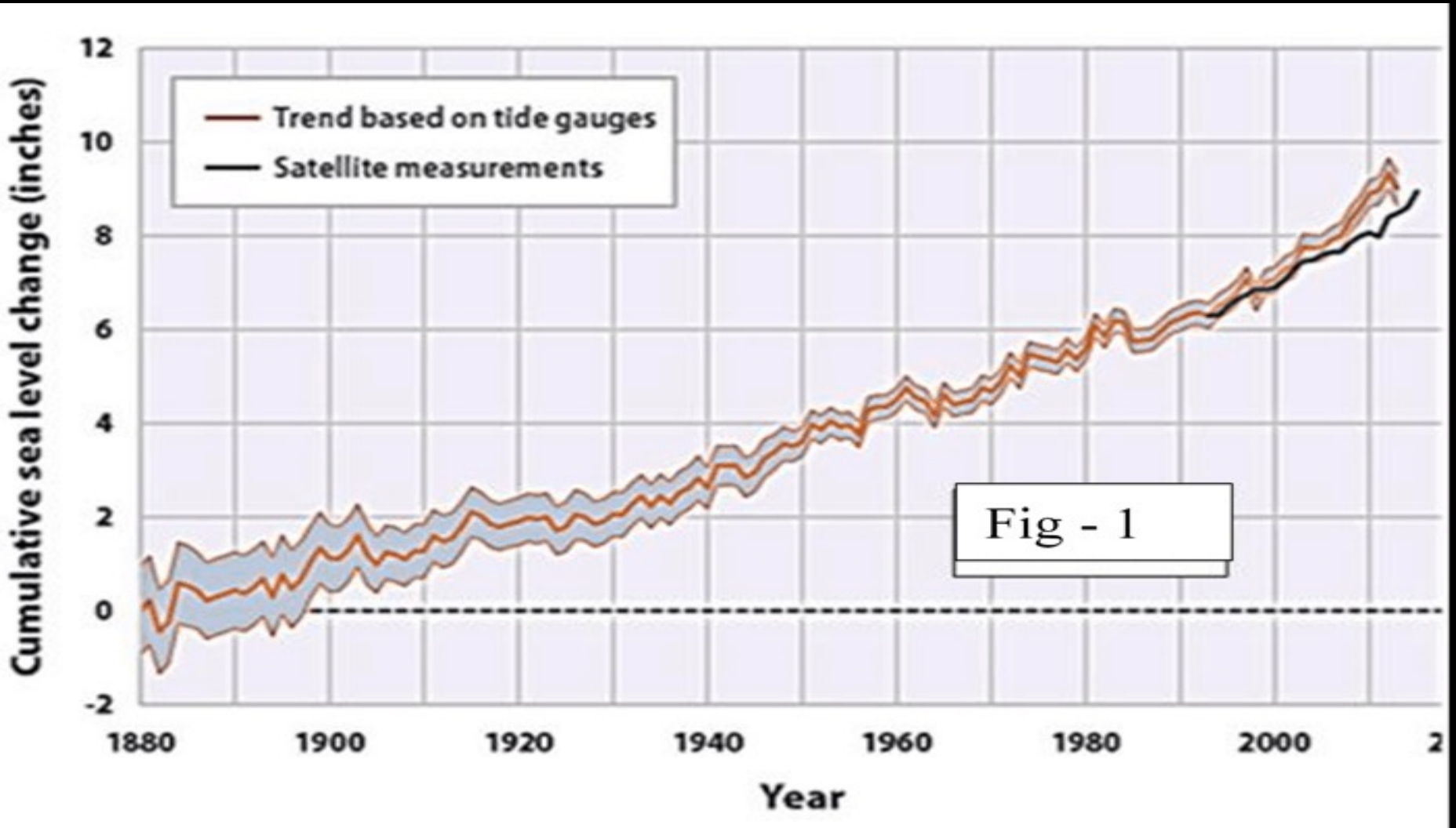
The UN IPCC admits that there is no increase in climate-driven changes in the magnitude and frequencies of floods in the 20th and 21st centuries around the world.

The deadliest flood in Canadian history was due to Hurricane Hazel, which killed over 75 people in Toronto in 1954.

Is Sea Level Rise Abnormal?

No, sea level has been rising since the end of the last glacial period, 15,000 years ago.

8,000 years ago, sea level was rising ten times faster than today due to the large volume of ice that had yet to melt and the expansion of sea water due to the rapid warming that was occurring at the time.


Trend based on tide gauges
Satellite measurements
Cumulative sea level change (inches)
12
10
8
6
4
2
0
-2
1880
1900
1920
1940
1960
1980
2000
Year
Fig - 1

Is Sea Level Rise Abnormal?

Oceans have risen only about nine inches in the last 140 years, a rise equal to the thickness of several pieces of paper per year.

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Reliable satellite data of the last forty years confirms this rise of about one to two millimeters per year before any complex adjustments are made.

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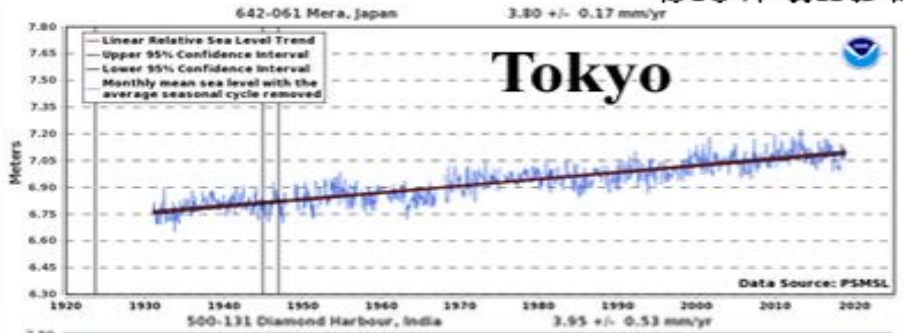
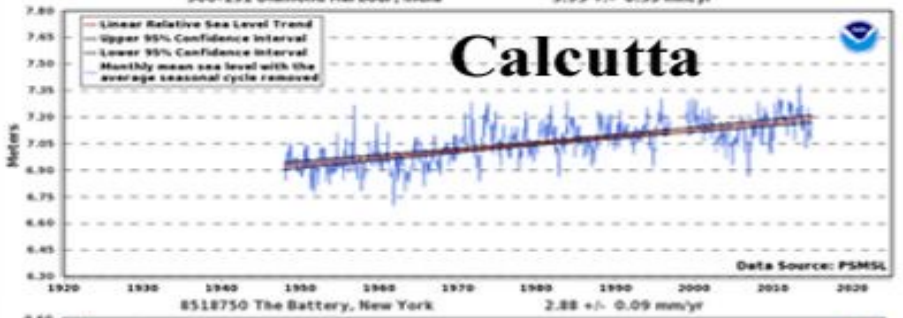
Reliable satellite data of the last forty years confirms this rise of about one to two millimeters per year before any complex adjustments are made.

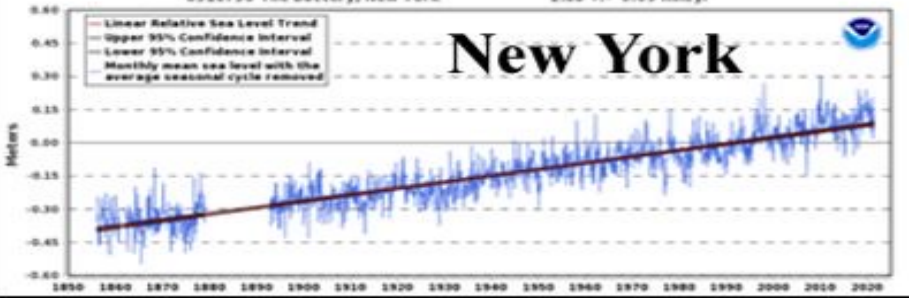
It is relatively simple to compensate for such modest sea level rise with appropriate adaptation measures.

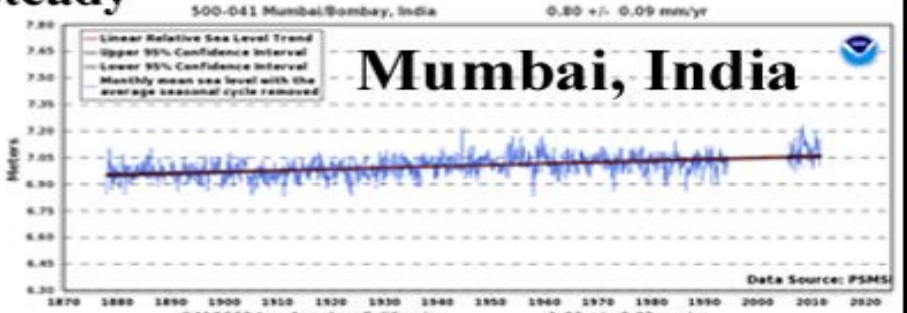
Sea Level Rise at Six of the World's Largest Cities

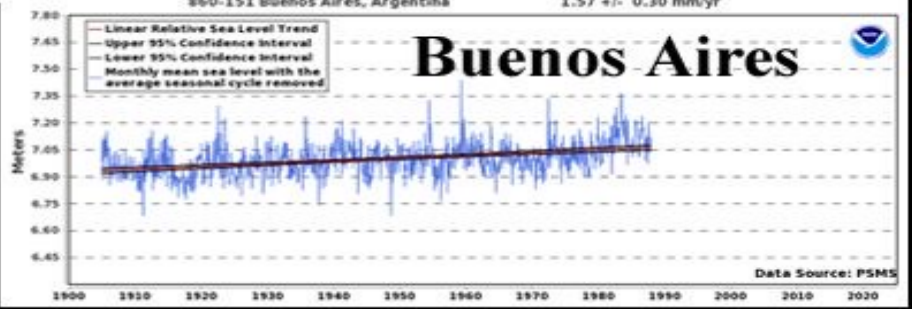
Slow and Steady











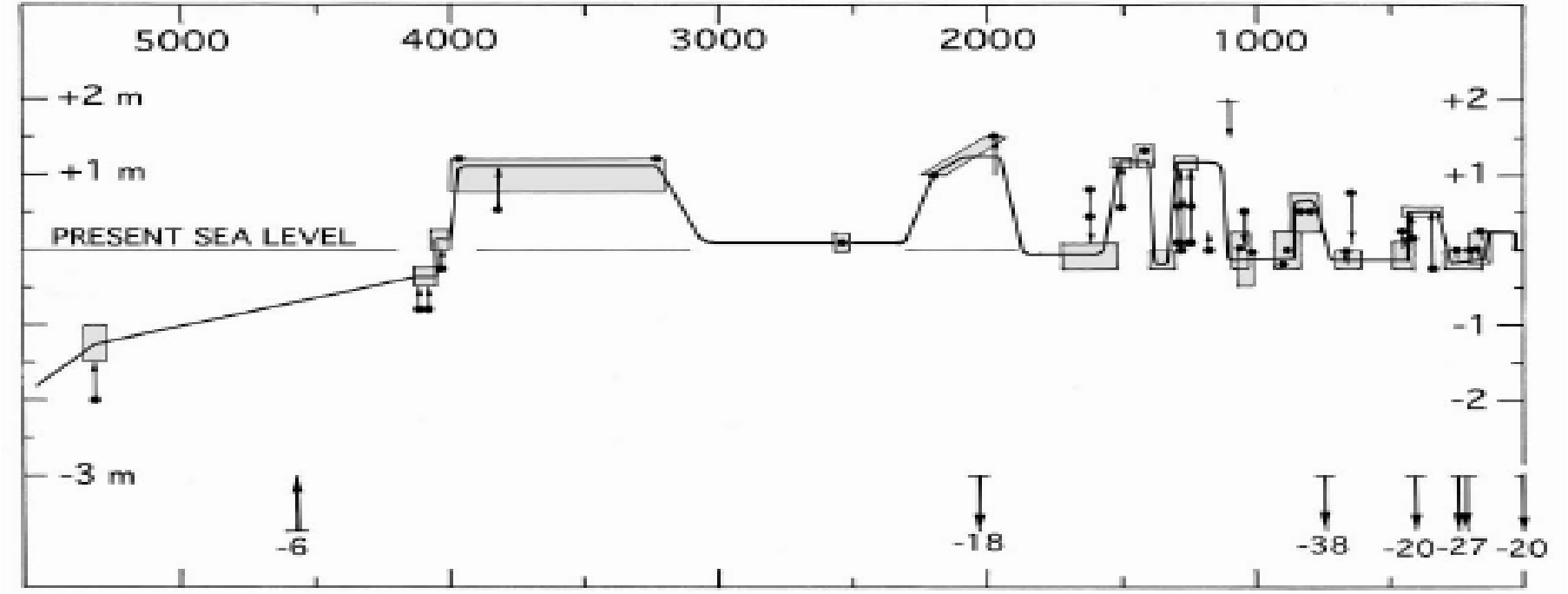


Figure 2

The new sea level curve of the Maldives. Age in C14-years BP with a "sea correction" of –350 years as defined by shell vs peat ages in the core on Goidhoo (Fig. 3). At the base: arrows down refer to sand spreading down into submarine caves at depths given by the numbers below, and arrow up refer to a coral in situ at –6 m.

How about Heat Waves?

Climate alarmists regularly claim we live in the “hottest decade ever.” The records do not support that claim.

The Dust Bowl years of the mid-1930s retain the title of hottest decade in recorded history, at a time when carbon dioxide concentrations were approximately 300 parts per million (ppm), far below the 420 ppm today.

Overview

Dr. Craig Idso, a lead author for Climate Change Reconsidered series of reports, said:

> “Given what is compiled in those reports and the thousands of peer-reviewed scientific references therein, I can tell you with complete confidence that there is absolutely no observational evidence that provides any compelling support for the contention that there is something unusual, unnatural or unprecedented about Earth’s current warmth.”

Overview

Dr. Idso:

Neither are there any real-world data that confirm that floods, droughts, wildfires or hurricanes are becoming either more frequent or more severe as a result of global warming.”

British Columbia government web page:

The K–12 education system is rising to the challenge of educating students to build climate resilience in uncertainty, to mitigate the impacts of climate change through preparedness and adaptation, and to contribute to climate solutions as change-makers and leaders.

Climate change in BC's curriculum

Work is underway to highlight and expand existing curricular opportunities and to further support climate education in B.C.

The Ministry of Education and Child Care is partnering with the B.C. Climate Action Secretariat CAS ***to ensure K–12 education remains aligned with provincial climate strategies*** and helps educators, students, families, and communities understand climate impacts, identify actions to prepare and adapt to climate change, and build climate resilience.

Climate change in BC's curriculum

Our objective is to work with our many partners to further emphasize climate change education in student learning across Grades K–12 while ensuring B.C. teachers are aware of existing opportunities within the curriculum and can access reliable, appropriate, and effective teaching and learning resources to support climate education in B.C.

Climate change in BC's curriculum

In 2021, Ministry of Education and Child Care partnered with CAS and the BC Teachers' Federation to run two teacher focus groups. These sessions examined how BC's curriculum currently supports climate change education, explored ways to support and enhance the curriculum, and identified opportunities for resource development.

Climate change in BC's curriculum

In June of 2021, CAS produced a pamphlet for B.C. teachers (PDF, 145 KB) highlighting many existing climate change education classroom resources and programs.

Climate Ready BC: Preparing Together

for Educators

BC'S CLIMATE IS ALREADY CHANGING

- Less snow and receding glaciers
- Fewer frost days
- Hottest days getting hotter
- Less summer rain
- More extreme precipitation events
- Sea level rise

Climate change education is for **ALL AGES ACROSS ALL SUBJECTS** and requires an integrated and holistic approach

TEACHERS ARE KEY TO CLIMATE CHANGE EDUCATION

Education is vital to strengthen the capacity of a generation to adapt to climate change and contribute to the well-being of their social and physical environments. Climate change education can be integrated at all levels of learning to:

- ✓ **Build awareness** and knowledge about climate impacts, social justice and environmental issues
- ✓ **Develop students' capacity** to be critical thinkers and problem-solvers
- ✓ **Create action-oriented learning** that leads to positive change in communities

WONDERING WHERE TO START?

Climate Atlas of Canada: Climate change data, maps and stories from across Canada

Columbia Basin Environmental Education Network: A list of top recommended climate change education resources for educators in BC

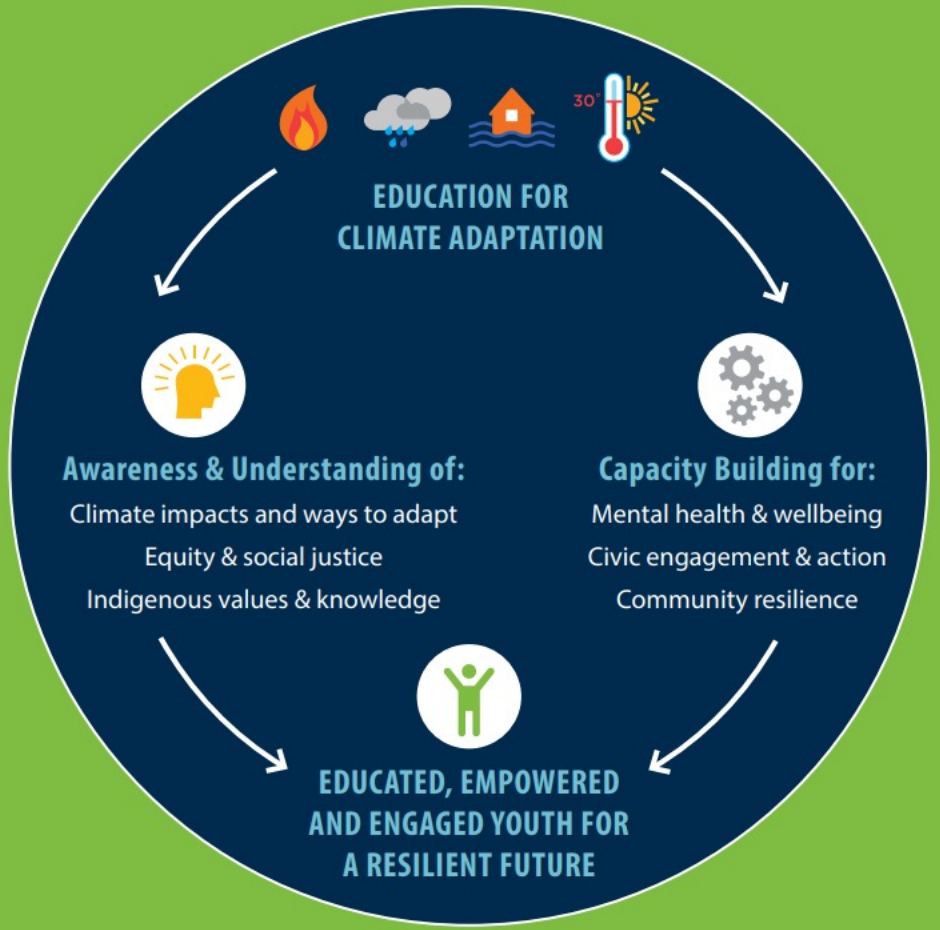
Learning for a Sustainable Future Climate Change Resources for Teachers: A compendium of classroom learning resources, including summary of themes and alignment with BC curriculum

Adapting to a Changing World: Learning resources on climate change adaptation for high school students

TeachBC: 86 samples of **lesson plans** on climate change

UN Climate Change Learn Teacher Portal: A selection of free e-courses on climate change, resulting in an official UN CC:Learn certificate for teachers

Climate Anxiety: An Introduction for Teachers: A toolkit for teachers on turning anxiety into action



students

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Equity & social justice

ndigenous values & knowledge

Civic engagement & ac

Community resilienc

EDUCATED, EMPOWERED AND ENGAGED YOUTH FOR A RESILIENT FUTURE

SPOTLIGHT CLASSROOM RESOURCES

Master of Disaster Youth Education Program is a free classroom program (grades 4-8) designed to help young people learn about emergency preparedness

- Teaches youth about hazards in BC—like floods, wildfires, earthquakes and tsunamis
- Shows how to get prepared, both personally and at home

Climate Change Adaptation Lesson Plans offers teaching guides and infographics (grades 6-10) to integrate adaptation into a variety of disciplines and methods such as:

- Telling climate change stories through photos
- Climate change, society, economy and environment
- Climate change, biodiversity and the living world

MASTER OF DISASTER BRITISH COLUMBIA

DID YOU KNOW...

#FridaysForFuture is a student climate movement that has evolved into more than 14 million people in 7500 cities worldwide

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Over 75% of teachers in Canada believe that climate change education is the role of all teachers, not just science teachers

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The B.C. curriculum supports **concept-based, place-based and competency-based learning**, all of which are key ingredients in effective climate change education

Climate change in BC's curriculum

We continue to meet with student activists, education partners, post-secondary institutions, and youth advocacy groups.

Education ministry is promoting climate change in the B.C. curriculum as a holistic subject that cuts across all grades and learning areas.

Climate change in BC's curriculum

Climate change is part of the required learning standards throughout the provincial science curriculum from Kindergarten to Grade 10.

Specialized science courses such as Earth Sciences 11, Environmental Science 11, Science for Citizens 11, and Environmental Science 12 lead students to study climate change in detail.

Earth Sciences 11

Background Information Change Grade Download

Core Competencies

Communication Thinking Personal and Social

Big Ideas

Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications.

Plate tectonic theory explains the consequences of tectonic plate interactions.

The transfer of energy through the atmosphere creates weather, and this transfer is affected by climate change.

The distribution of water has a major influence on weather and climate.

Astronomy seeks to explain the origin and interactions of Earth and its solar system.

on ▾ | Thinking ▾ | Personal a

Plate tectonic theory explains the consequences of tectonic plate interactions.

The transfer of energy through the atmosphere creates weather, and this transfer is affected by climate change.

The distribution of water has a major influence on weather and climate.

Sample questions to support inquiry with students:

Why are extreme weather events predicted to become more frequent in the future?

Content

Learning Standards

Elaborations +

Students are expected to know the following:

- evidence of climate change
  - both historical and recent (i.e., the last 100 years) climate change (e.g., ice core data, deep sea sediments, First Peoples knowledge)
- First Peoples knowledge of climate change and interconnectedness as related to environmental systems
- effects of climate change
  - for example, ocean acidification, changes to ocean currents, loss of glaciers, rising sea levels

Science for Citizens 11

Background Information Change Grade Download

Core Competencies

Communication Thinking Personal and Social

Big Ideas

Scientific processes and knowledge inform our decisions and impact our daily lives.

Scientific knowledge can be used to develop procedures, techniques, and technologies that have implications for places of employment.

Scientific understanding enables humans to respond and adapt to changes

- *Sample questions to support inquiry with students:*
  - How do your actions affect the world around you?
  - What are the causes of forest fires or flooding in the province?
  - How do local actions affect global weather?

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  - How do local actions affect global weather?

Curricular Competency

Learning Standards

Students are expected to be able to do the following:

Applying and innovating

- *Sample opportunities to support student inquiry:*
  - Design a residential subdivision plot plan that uses solar photovoltaic (PV) modules for its energy needs.

Curricular Competency

Learning Standards

Students are expected to be able to do the following:

Communicating

- *Sample opportunities to support student inquiry:*
  - Use social media to communicate how a particular action impacts climate change.

Content

Learning Standards

Elaborations -

Students are expected to know the following:

- natural hazards and responses
  - geologic events (e.g., earthquake, tsunami, avalanche, land/rock/mudslide)
  - weather events: causes and effects (e.g., flooding, wildfire, hurricane, tornado, flooding, drought)

- human impact on Earth's systems:
  - effects of climate change
    - impact on food production
    - impact on climate (e.g., desertification, changing range of plants and animals)
    - impact on weather
    - sea level rise (e.g., infrastructure changes in coastal communities)
    - ocean acidification

- human impact on th's systems:
  - effects of cli ange

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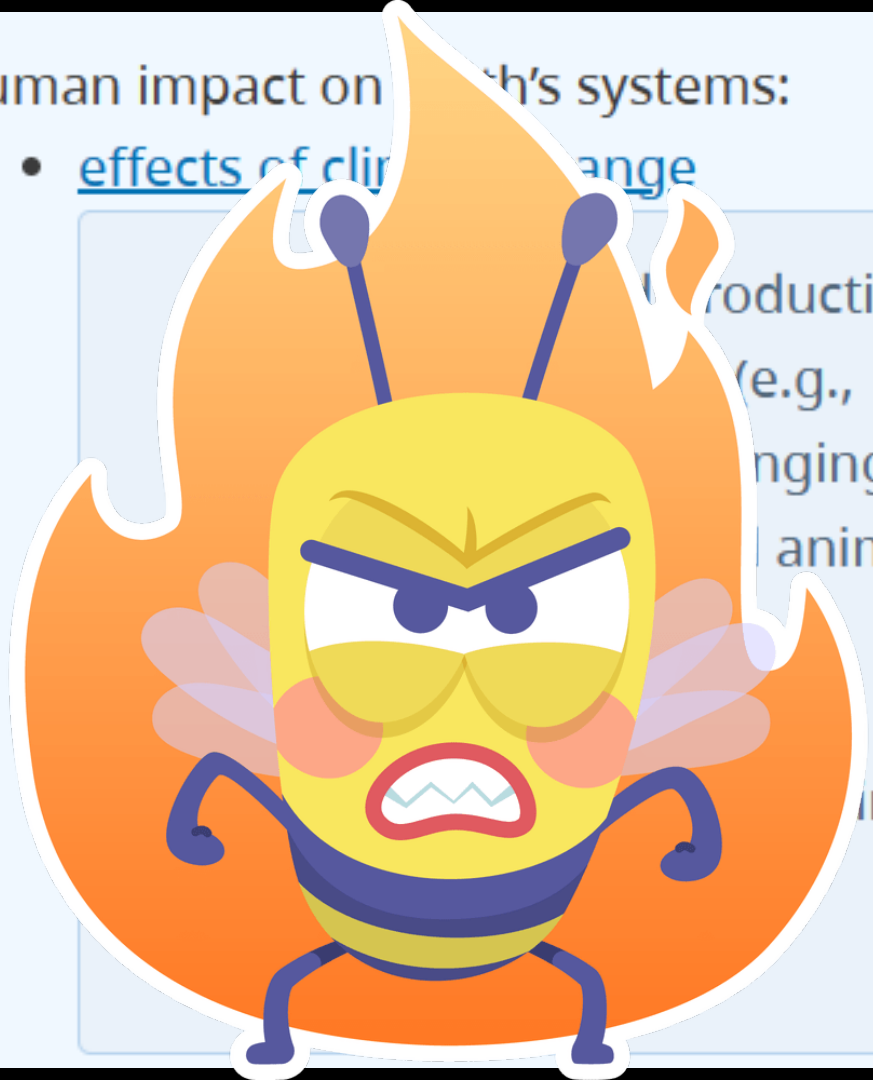

Environmental Science 12

Background Information Change Grade Download

Core Competencies

Communication Thinking Personal and Social

Big Ideas

Human actions affect the quality of water and its ability to sustain life.

Human activities cause changes in the global climate system.

Sustainable land use is essential to meet the needs of a growing population.

Living sustainably supports the well-being of self, community, and Earth.

ication ▾

Thinking ▾

the
ability

Human activities cause changes in the global climate system.

Sustain
essential to
a growi

Sample questions to support inquiry with students:

How do changes in the composition of the atmosphere lead to changes in the global climate?

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What are some of the human activities that contribute to climate change? Which of your actions contribute to climate change?

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How do changes in the composition of the atmosphere lead to changes in the global climate?

What are some of the human activities that contribute to climate change? Which of your actions contribute to climate change?

How do the emissions of electric vehicles differ from those of internal combustion engine vehicles?

Curricular Competency

Learning Standards

Elabo

Students are expected to be able to do the following:

Questioning and predicting

- *Sample opportunities to support student inquiry:*
  - How can you decrease your personal contributions to greenhouse gas emissions?
  - How much of your diet is produced within 100 km of your home?

Curricular Competency

Elabo

Learning Standards

Students are expected to be able to do the following:

Evaluating

- *Sample opportunities to support student inquiry:*
  - What are the differences between anthropogenic and natural sources of CO_2 emissions?

Curricular Competency

Elabo

Learning Standards

Students are expected to be able to do the following:

Applying and innovating

- *Sample opportunities to support student inquiry:*
  - Which bylaws would you recommend for your community to reduce greenhouse gas production?
  - How do local trends in land use align with and respond to global climate change?

Curricular Competency

Elabo

Learning Standards

Students are expected to be able to do the following:

- *Sample opportunities to support student inquiry:*
  - How would you advocate for additional bike lanes in your community as a mechanism to reduce greenhouse gas emissions?

Curricular Competency

Elabo

Learning Standards

Students are expected to be able to do the following:

- *Sample opportunities to support student inquiry:*
  - How would you advocate for additional bike lanes in your community as a mechanism to reduce greenhouse gas emissions?

This is “Environmental Science?”

Curricular Competency

Elabo

Learning Standards

Students are expected to be able to do the following:

- How could you demonstrate to your city council the need to ban plastic bag use in your community?

Curricular Competency

Elabo

Learning Standards

Students are expected to be able to do the following:

- How could you demonstrate to your city council the need to ban plastic bag use in your community?

This is “Environmental Activism!”

Content

Learning Standards

Students are expected to know the following:

- changes to climate systems
- impacts of global warming

  increase in extreme weather events, flooding, desertification, ocean acidification, permafrost melting, drought, wildfires, hurricanes, migratory changes, human health, food security, traditional ways of being and doing

Content

Learning Standards

Students are expected to know the following:

- impacts of global warming

  increase in extreme weather events, flooding, desertification, ocean acidification, permafrost melting, drought, wildfires, hurricanes, migratory changes, human health, food security, traditional ways of being and doing

Content

Learning Standards

Students are expected to know the following:

- mitigation

  addresses the causes of climate change (e.g., emission reductions, renewable energy, green building and construction, urban green spaces, laws and regulations, organic agriculture, closed-loop production systems, recycling and upcycling)

Content

Learning Standards

Students are expected to know the following:

- personal choices and sustainable living

  diet (e.g., 100-mile diet, organic farming, community gardens, reducing meat consumption), sustainable building products, reduce household energy use, consumerism (reduce, reuse, repurpose, recycle, upcycle), conserve water, alternate transportation methods, traditional ecological knowledge (TEK)

Climate Anxiety among Children

Survey: Climate anxiety affects the daily life of nearly half of young people.

Most said they believe “the future is frightening”

Press release, *14 September 2021*

UNIVERSITY OF BATH

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From *Communications*

Government inaction on climate change linked to psychological distress in young people - new study

Largest scientific study of its kind finds climate anxiety affects the daily life and functioning of nearly half of children and young people surveyed globally.

Study based on surveys with 10,000 children and young people (16-25) across 10 countries

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Found 75% of young respondents believe ‘the future is frightening’

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Found 75% of young respondents believe ‘the future is frightening’

It found, for the first time, that climate distress and anxiety is significantly related to perceived government inaction and associated feelings of betrayal.

Mitzi Tan, 23-years-old, from the Philippines, said:

“I grew up being afraid of drowning in my own bedroom. Society tells me that this anxiety is an irrational fear that needs to be overcome - one that meditation and healthy coping mechanisms will ‘fix.’ At its root, our climate anxiety comes from this deep-set feeling of betrayal because of government inaction. To truly address our growing climate anxiety, we need justice.”

Beth Irving, a 19-year-old climate activist behind the Cardiff student climate strikes, said:

“When I was 16... I went through phases of feeling utterly helpless in face of this immense problem, and then would launch myself into organising protests or changing things within my school. To put so much energy into something and then see so little real life impact was exhausting; I had many occasions where I would hide myself away and think "None of this is enough". It's so damaging to put this problem on the shoulders of young people - hope needs to come instead from palpable structural action.”

The study found widespread psychological distress among children and young people globally and warns 'such high levels of distress, functional impact and feelings of betrayal will negatively affect the mental health of children and young people.’

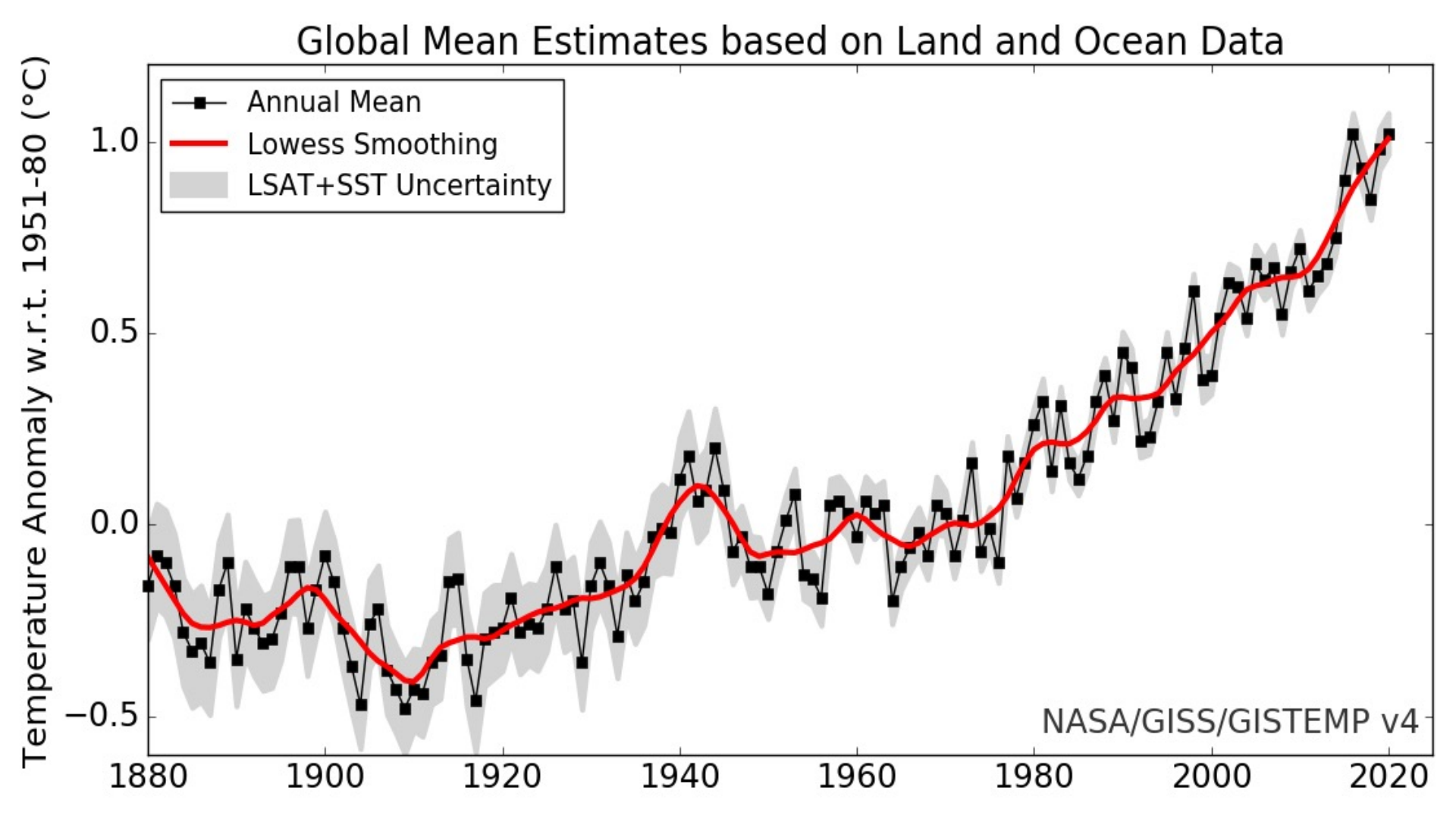
Experts warn that because continued government inaction on climate change is psychologically damaging, it potentially amounts to a violation of international human rights law.

Caroline Hickman, University of Bath, Climate Psychology Alliance and co-lead author on the study said:

“This study paints a horrific picture of widespread climate anxiety in our children and young people. It suggests for the first time that high levels of psychological distress in youth is linked to government inaction. Our children’s anxiety is a completely rational reaction given the inadequate responses to climate change they are seeing from governments. What more do governments need to hear to take action?”

Protect Young People Against Climate Anxiety By:

Quietly showing them “The Other Side of the Story” by directing them to “climate realist” information, encouraging them to see things in perspective.


Global Mean Estimates based on Land and Ocean Data
Annual Mean
Lowess Smoothing
LSAT+SST Uncertainty
Temperature Anomaly w.r.t. 1951-80 (°C)
1.0
0.5
0.0
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1880
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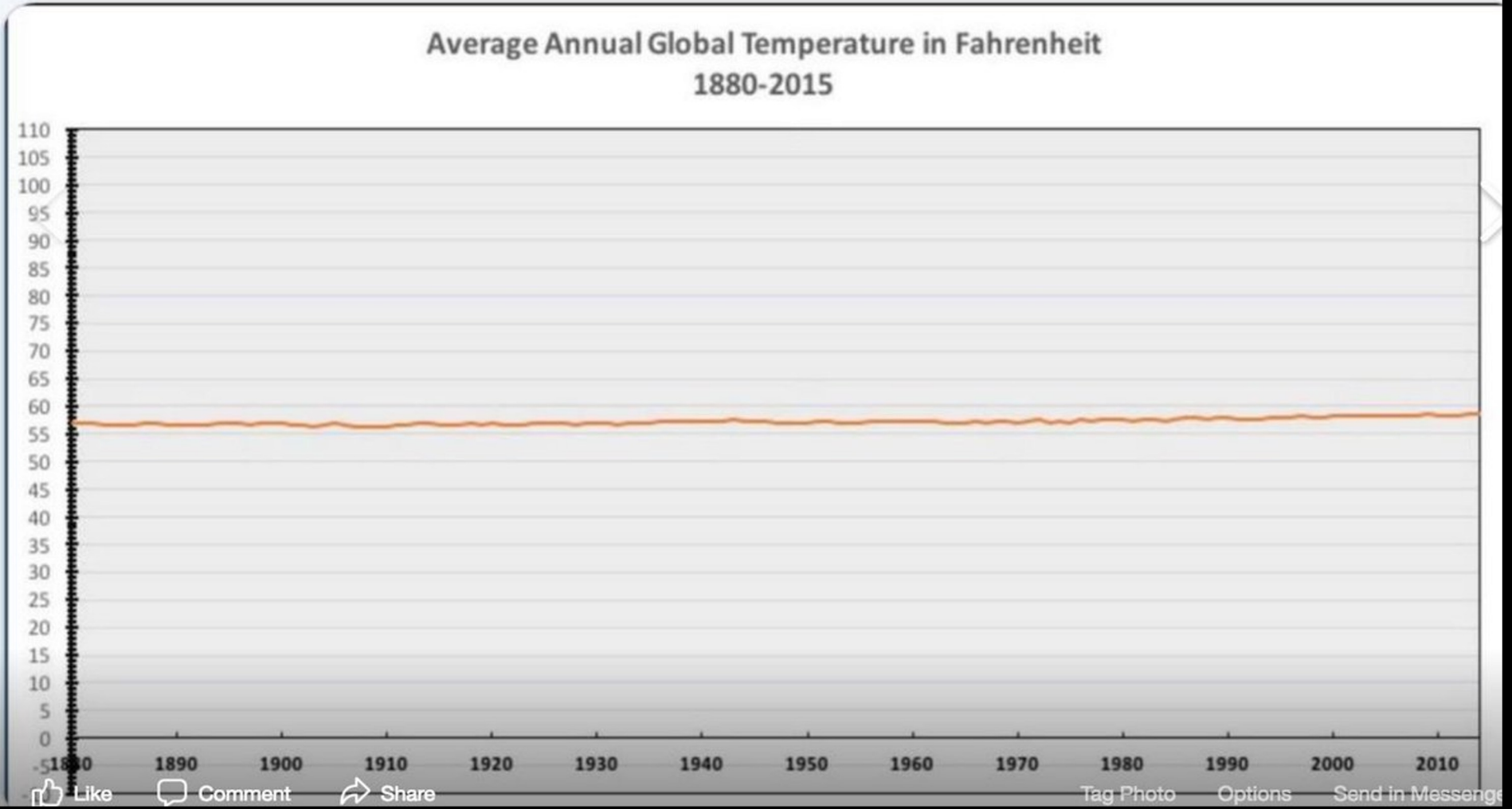
NASA/GISS/GISTEMP v4



Protect Young People Against Climate Anxiety By:

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Explaining the role of propaganda in creating fear and government control in our lives

Protect Young People Against Climate Anxiety By:

Quietly showing them “The Other Side of the Story” by directing them to “climate realist” information

Explaining the role of propaganda in creating fear and government control in our lives

Encouraging them to ask revealing questions in class such as:

Revealing questions students can ask in class:

How much has it warmed across the world since 1880?

Answer: Just over 1 deg C

Revealing questions students can ask in class:

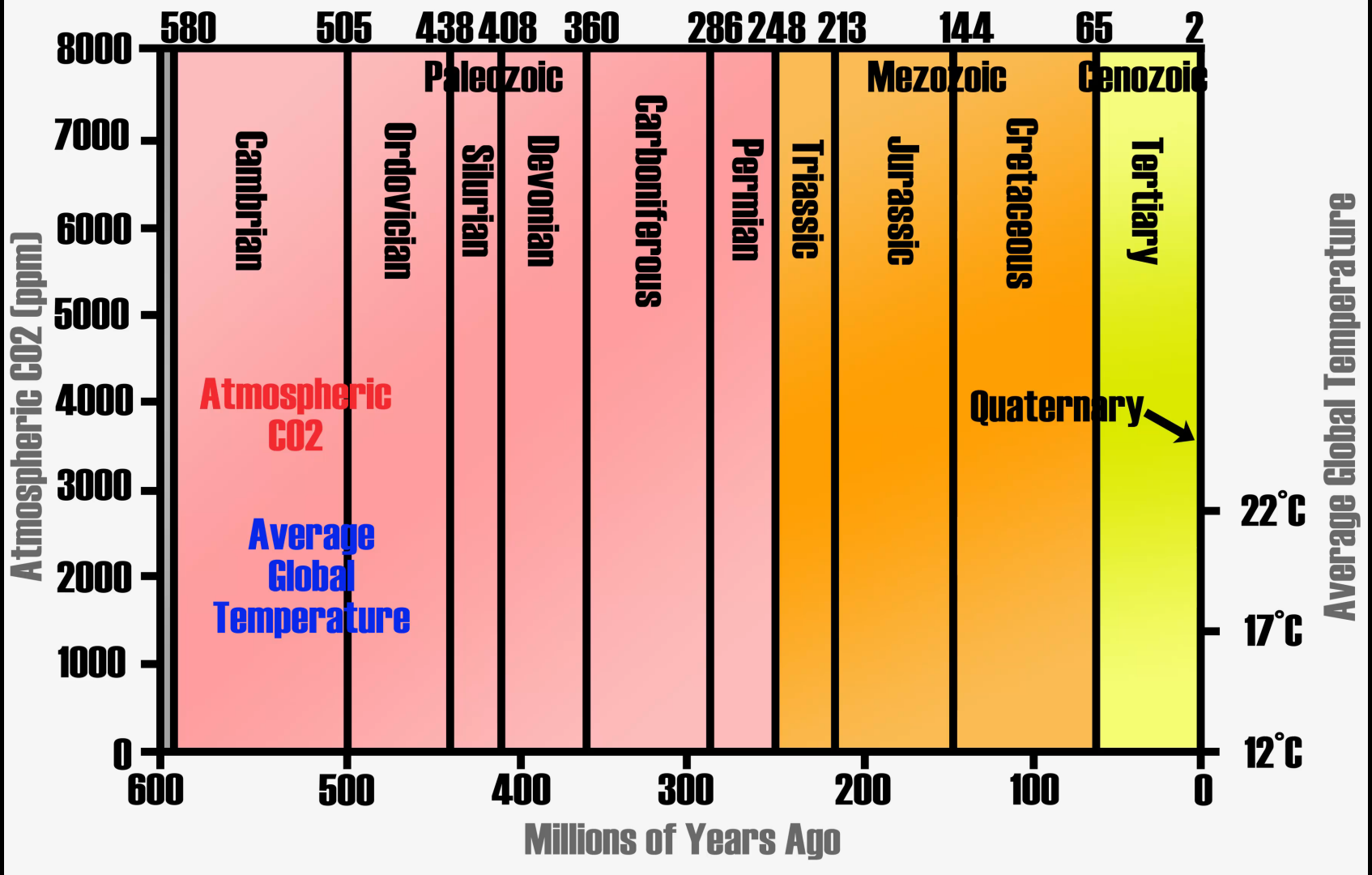
Has carbon dioxide ever been as high as today in the past?

Answer: Yes, in fact we are at one of the lowest levels of CO2 in Earth's history.

Revealing questions students can ask in class:

What happened when CO2 was higher in the past than it is today?

Answer: Temperature was all over the map


580
505
438
408
360
286
248
213
144
65
2
Paleozoic
Mezozoic
Cenozoic
Cambrian
Ordovician
Silurian
Devonian
Carboniferous
Permian
Triassic
Jurassic
Cretaceous
Tertiary
Quaternary
Atmospheric CO2
Average Global Temperature
Atmospheric CO2 (ppm)
8000
7000
6000
5000
4000
3000
2000
1000
0
22°C
17°C
12°C
Average Global Temperature
600
500
400
300
200
100
0
Millions of Years Ago

Revealing questions students can ask in class:

When were the most extreme weather records set in the historical record?

Answer: In the Dirty Thirties

Revealing questions students can ask in class:

How well did previous forecasts of impending environmental catastrophe match with what actually happened?

Answer: They did not – see some samples:

UN'S FIFTY YEARS OF ECO-DOOM WARNINGS

1972: UN "environment protection boss" warns:


"Vi har tio år på oss att hejda katastrofen"

"We have ten years to stop the catastrophe"

1982: *Tolba, head of UN Environment Programme in* The New York Times *:*

If the nations of the world continue their current policies they will face **by the year 2000:**


U.N. Ecology Parley Opens Amid Gloom

"an environmental catastrophe as irreversible as any nuclear holocaust"

1990*: Mostafa Tolba, head of UN Environment Programme:*

We must to fix climate change before 1995:

"The ozone layer protection agreements took ten years to conclude. We must reach a comparable agreement to combat climate change in a third of that time. We shall win —or lose—the climate struggle in the first years of the 1990s. The issue is as urgent as that."

"We shall win – or lose – the climate struggle in the first years of the 1990s"

Revealing questions students can ask in class:

Why do greenhouse operators pump CO2 into greenhouses?

Answer: Because plants grow faster and need less water. As a result of rising CO2 in the atmosphere, NASA tells us we have seen a great “greening” of the Earth.

Protect Young People Against Climate Anxiety By:

Encourage them to get involved in sports, music and other exciting and absorbing activities that enrich their bodies and minds.

ICSC - Canada

https://www.icsc-canada.com/

International Climate Science Coalition - Canada

Climate Propaganda in Canadian Schools, and How to Fight it

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