

Environmental Issues & Solutions

Ppt 3B

Linked to Readings B-5

*Tell us Planet, Mother Earth,
Creator, what's wrong!*

We're listening...

*Oh, wait! Let us first tell you
what we are thankful for...*

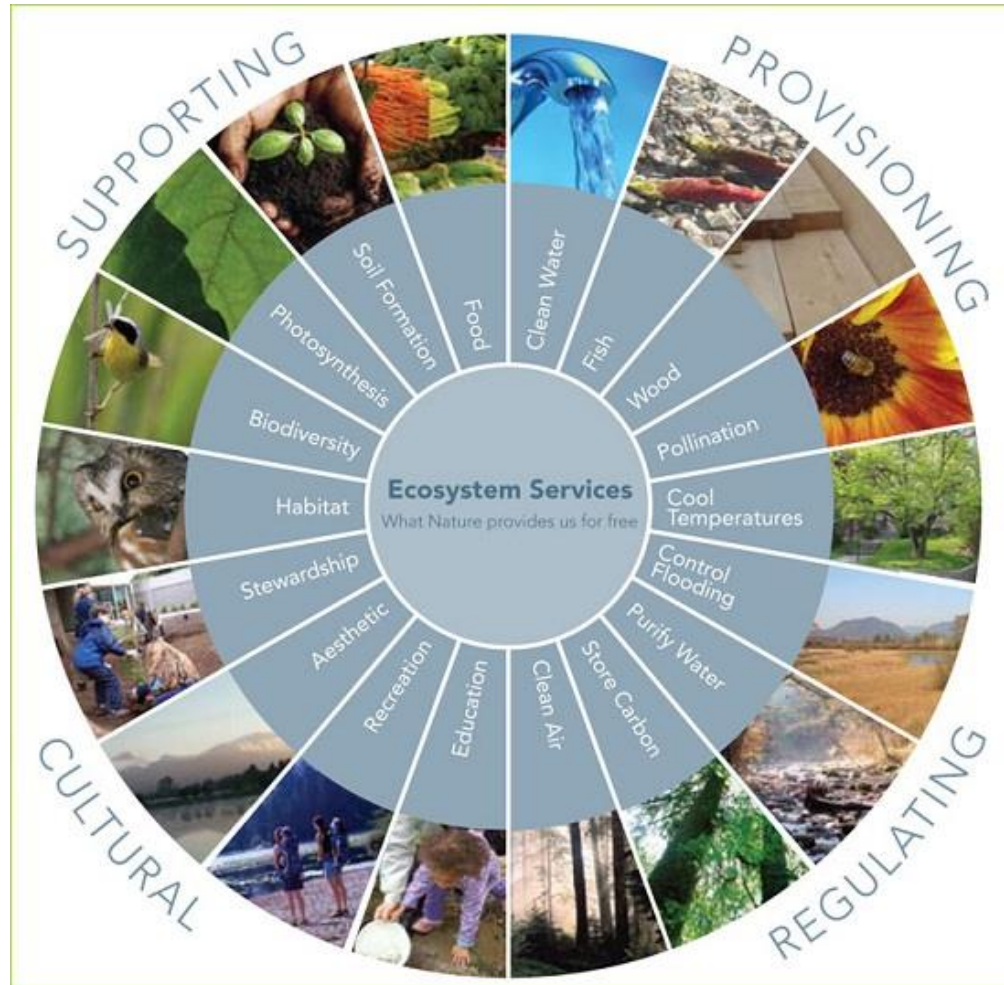


Well, let's see...
Where do I start??



All your generous Ecosystem Services!

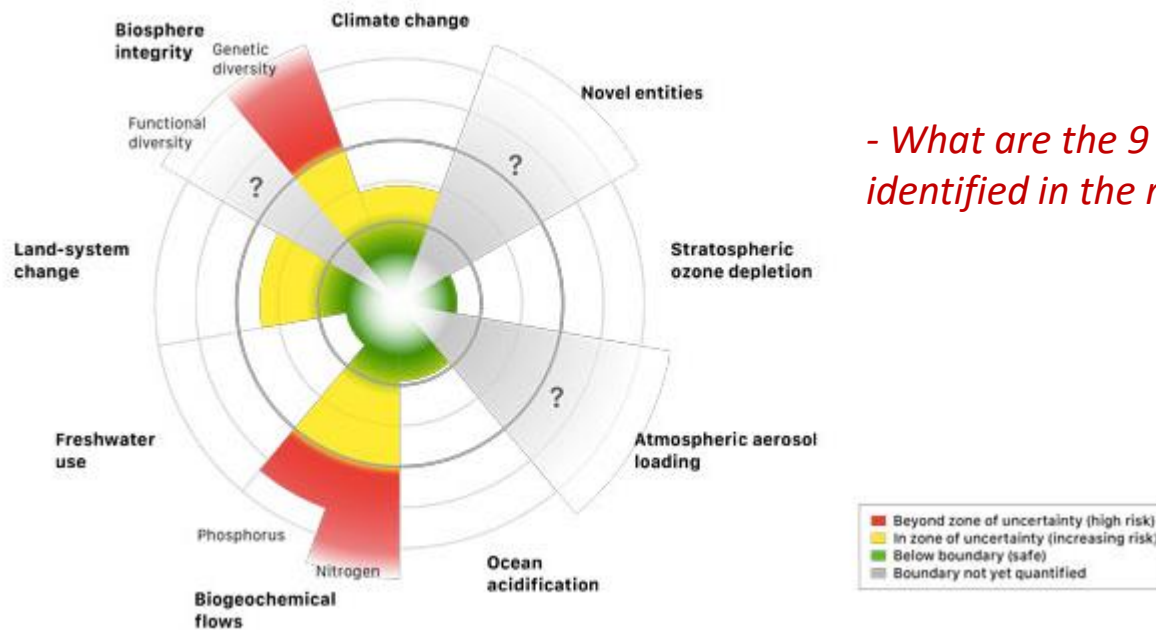
- Can you think of a few?



Ecosystem Services and Resources (gifts) + Economic Growth and rising Standard of Living (*greed?*) = Planetary boundaries

Stockholm Resilient Centre put together

The nine planetary boundaries



- What are the 9 boundaries identified in the reading?

Note that your B-5 reading is missing a line at the top of p. 5. The above [link](#) provides the complete document.

Missing part:

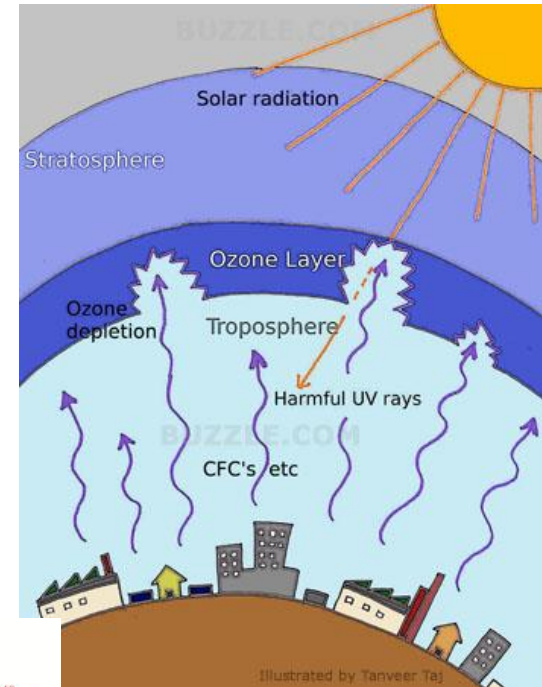
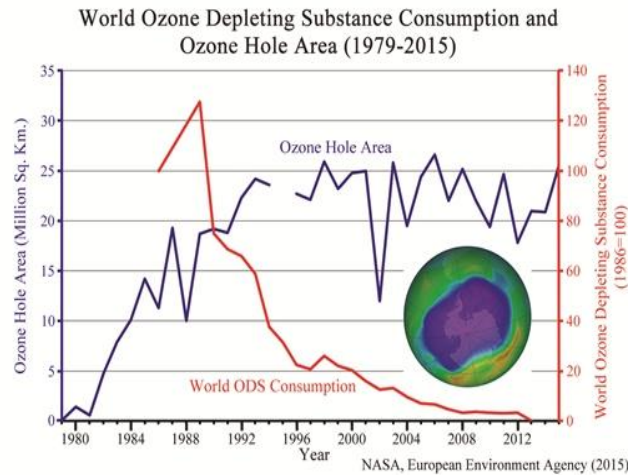
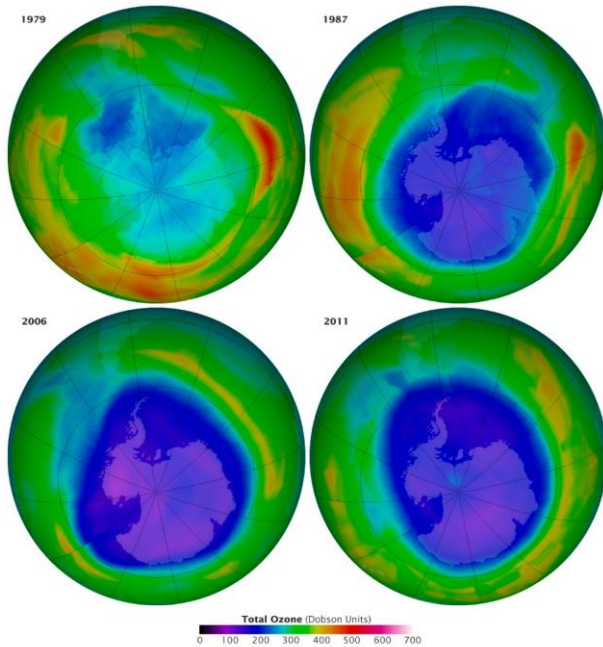
“Atmospheric aerosol loading (9th boundary)

An atmospheric aerosol planetary boundary was proposed... primarily because of the influence of aerosols on Earth's climate system.”

1- Ozone Layer Depletion

- Destruction of stratospheric O₃ by human-made chemicals.
- A success story of world commitment!

- How is that?



Montreal Protocol

- **Signed** 16 September 1987
- **Location** Montreal
- **Effective** 1 January 1989 if 11 states have ratified by then
- **Condition** ratification by 20 states
- **Signatories** 46
- **Ratifiers** 197 (all United Nations members, as well as Niue, the Cook Islands, the Holy See and the European Union)
- **Depository** Secretary-General of the United Nations
- **Languages** Arabic, Chinese, English, French, Russian and Spanish.

Watch [NASA 2019](#) update and explanation (1 min.)

* **Dubson unit:** a unit of measurement for the total amount of ozone in the atmosphere above a point on the earth's surface, one Dobson unit being equivalent to a layer of pure ozone 0.01 mm thick at standard temperature and pressure.

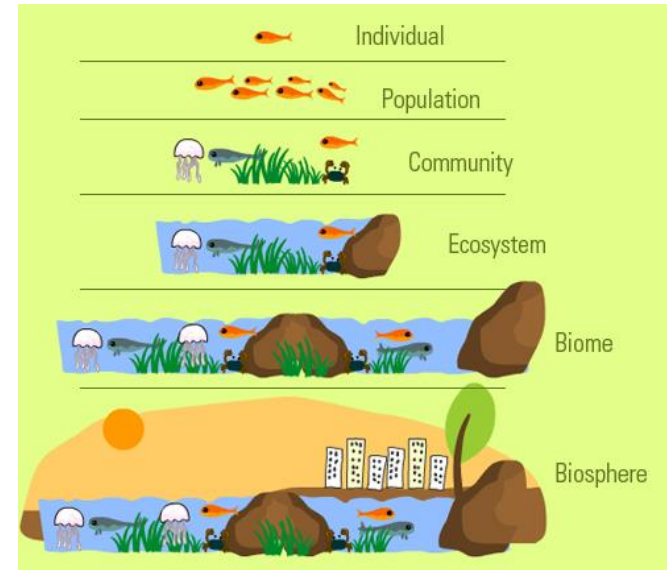
2- Loss of Biodiversity & extinction

- Concepts & Organigram:
- Significance & impacts:

- *Can you think of some?*

- *Have you heard of the **Holocene extinction?***

= 6th mass extinction or Anthropocene extinction



- *What is particular about these two biomes?*



FYI: Article that just came out in The Guardian: [World fails to meet a single target to stop destruction of nature – UN report](#)

UN News link: [UN report highlights links between ‘unprecedented biodiversity loss’ and spread of disease](#)

BUT, we need to stay positive with a solution-oriented mindset...
Worldwide, a movement is exploding, and you can be part of it!

In Montreal...



Check: [Agriculture Montreal](#) map

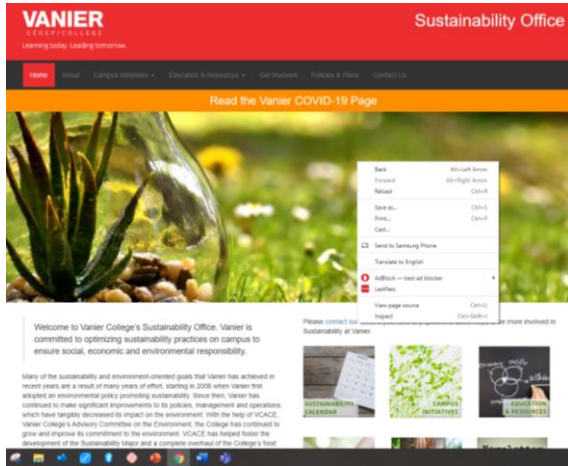
Find the “jardins collectifs du Collège Vanier”
(click on Communautaires)

- *What are the 3 initiatives closest to your home (or where you are presently staying)?*

FYI: [Vanier College Collective Gardens](#) website
Some [videos](#) and more [videos](#)

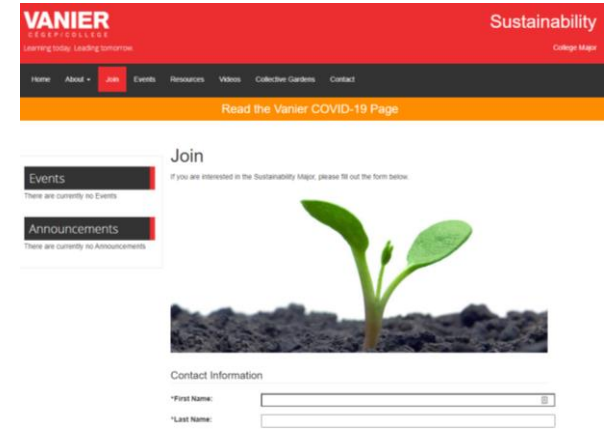
Beyond the Vanier Gardens, at Vanier ...

The Sustainability Office

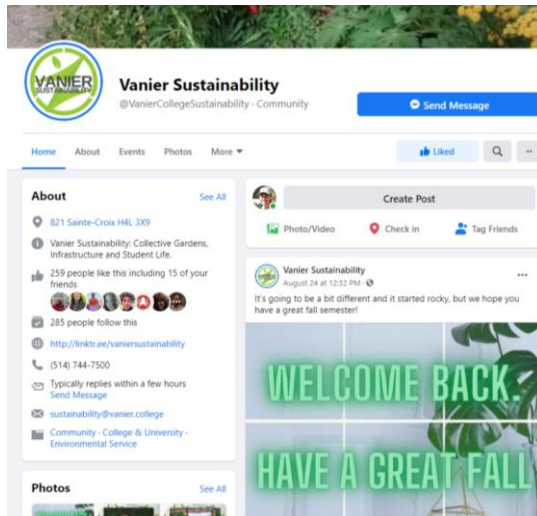


The Sustainability Major

Open to students in ANY program at Vanier



Facebook group



Linktree

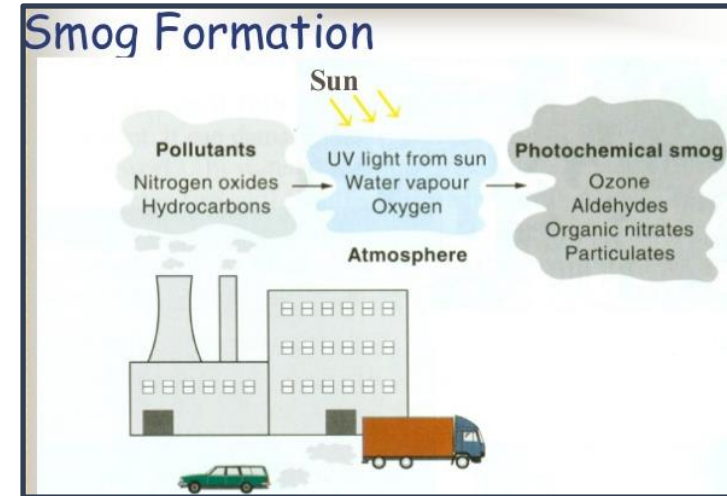
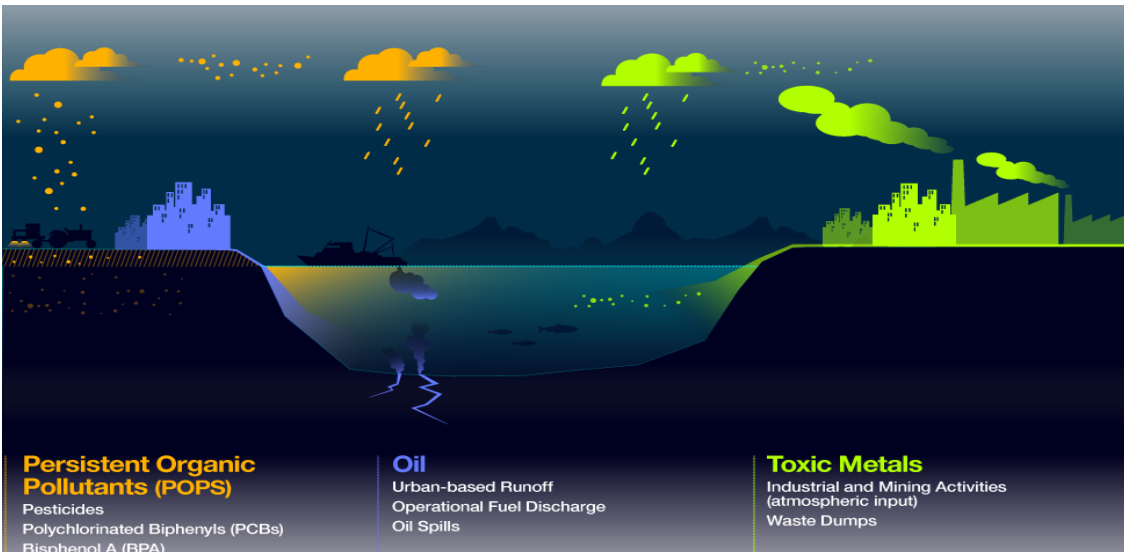


@vaniersustainability

- VC 2020 Orientation Facebook Group
- Vanier Sustainability Office
- Sustainability Resources for Students
- Volunteer for the Vanier Gardens
- Vanier Sustainability Newsletter
- Sustainability Workshop Registration
- Vanier Sustainability Instagram
- Vanier Sustainability Facebook

3- We live in a chemical era!

- Chemical pollution: When human-made & in quantities too large for nature to absorb.
 - *Solution? Getting back to basics?*
 - *Or can high-tech come to the rescue? At what other cost?*



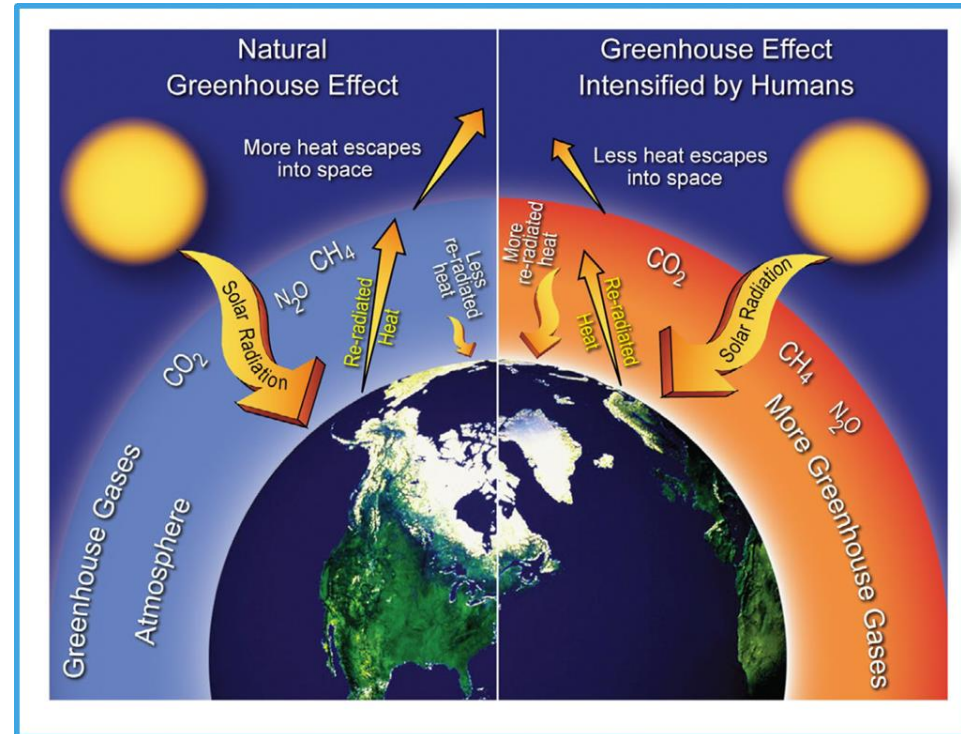
Some boundaries, among others...

4- Climate change

- GHGs: *Include?*
- GH Effect: *Good or bad?*
- Global Warming: *good or bad?*
- GW *triggers...?*
- Climate Change

now referred to as

Climate Crisis



Watch these 3 trailers:

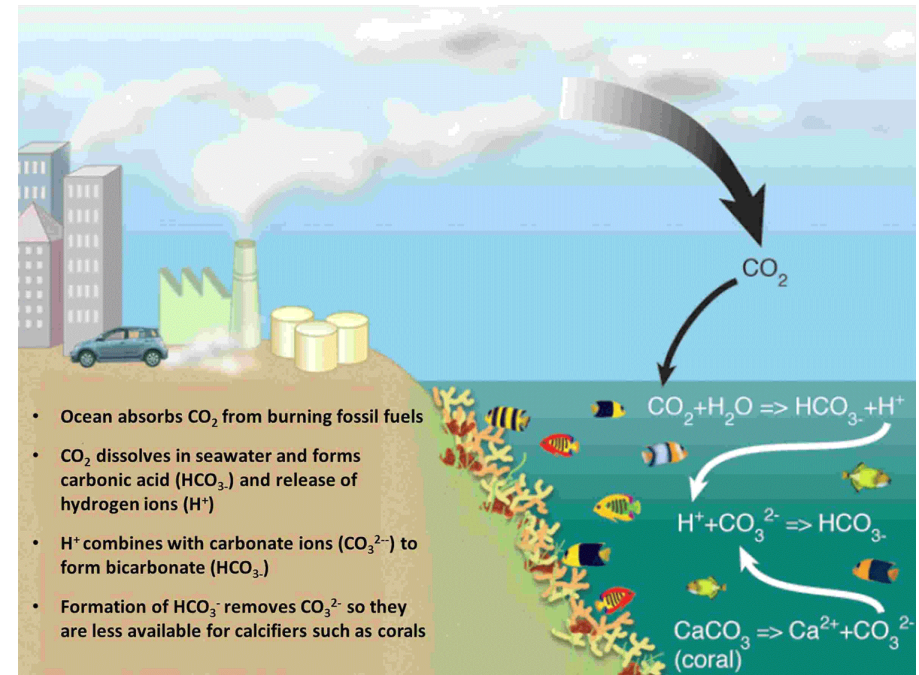
- [An Inconvenient Truth](#) (2006) Official Trailer #1 - Al Gore Movie HD
- [An Inconvenient Sequel: Truth To Power](#) | official trailer (2017) Al Gore
- [This Changes Everything](#) Trailer | Festival 2015 with Naomi Klein

- *In which of these 3 clips do we hear this quote?*

“There are limits. Let’s celebrate the limits, because we can reinvent our different future.”

5- Ocean acidification

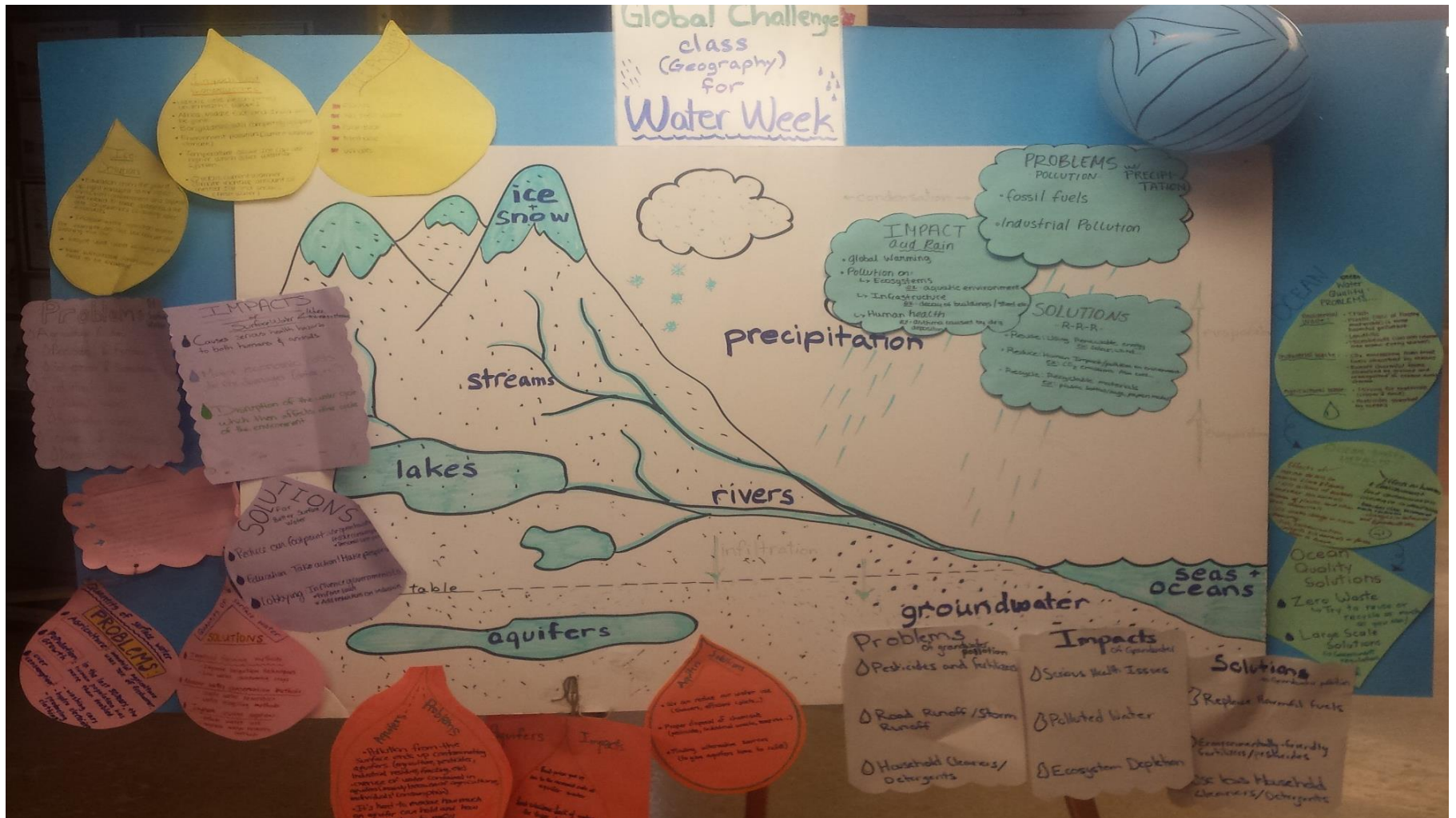
- Decreasing of ocean's pH
 - *Caused by?*
- *Process: see explanation below*
 - *Which of the two ions are increasing?*
 - *Which of the two ions are decreasing?*
- *Consequences:*
 - *What is affected and how?*
- *Solutions:*
 - *What would you suggest?*



Further explanation: <http://oceanservice.noaa.gov/facts/acidification.html>

6- Fresh water resources: overuse & pollution

- *Students project!* 😊



7- Land misuse/overuse

- Meaning of misuse/overuse...

- *Types of misuse/overuse? (Causes?)*

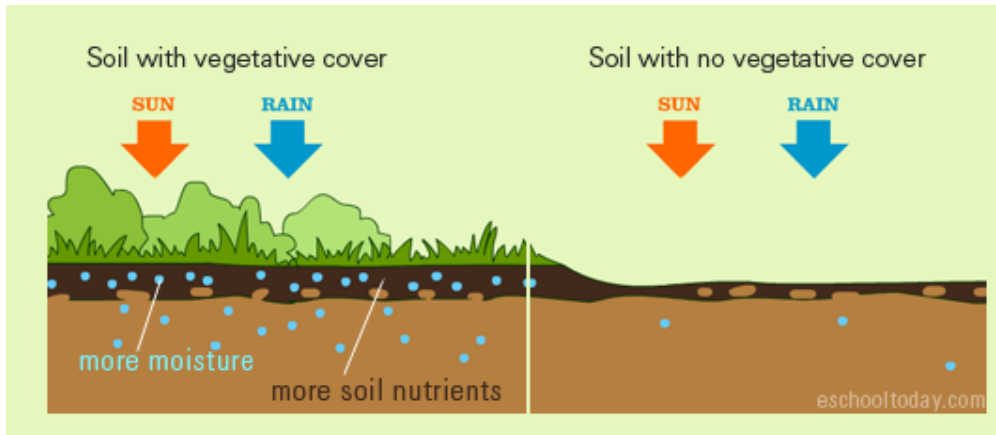
For e.g.: Fragmentation:

- *Is it "less bad" of than deforestation?*

- Consequences: Some many!

- *Can you think of some?*

For e.g.: Soil topsoil erosion and loss



- *Can you link this to agriculture?*



- *Mitigation to fragmentation?*



8- Chemical fertilization

- *When did it start? Why? Which elements?*
- *Is it really necessary?*
- *How was fertilization done before?*
- *What are some of the consequences?*
- *And what about consequences of over-fertilization?*



We often hear that we cannot feed the world population without chemical fertilizers.

- *What do you think I think? What do you think?*

Watch - [What Cuba can teach America about organic farming](#) (6 min.)

- [Ron Finley Teaches Gardening](#) | Official Trailer | MasterClass (2 min.)

- Trailer (bottom left) [Les fermiers](#) About that farm: [Ferme Quatre-Temps](#) (2 min.)

- **Check location** on [Google Maps](#) – *How far from Montreal?*

9- Atmospheric Aerosol Loading

- *Are atmospheric aerosols (particules in the atmo) naturally occuring?*
- *E.g. of particules?*

FYI: more on the **natural roles** of aerosols from [NASA](#)

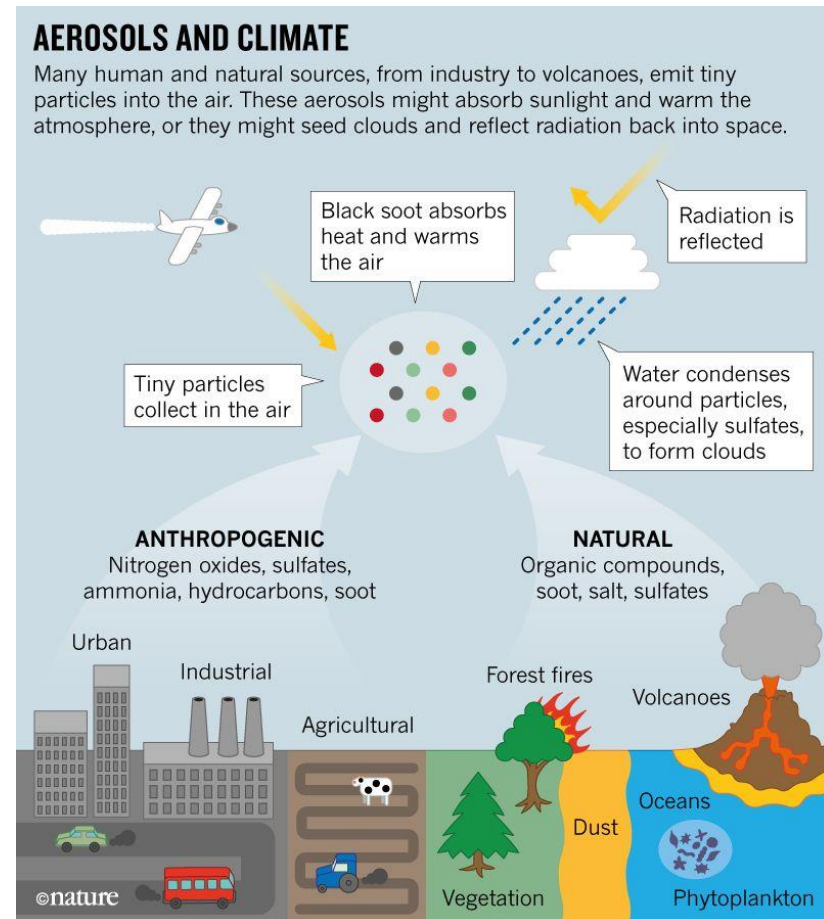
- *So, where is the problem?*

Atmo Aerosol “**loading**” = particulate **anthropogenic** air pollution

- *E.g. of particles from human activity?*

Source categories: “road transport, combustion of solid fuels in small furnaces, use of organic solvents, disposal of organic wastes on landfills, and ruminant husbandry.” [Source](#)

- *Have you heard of “cloud seeding with silver iodide? Purpose? Risks?*



[Source](#)



Before I let you go...

- Have you heard of **Denmark's** new revolutionary law on **Climate Change**?

Read B-6!

- *What are the main tenants of this law?*
- *Why is it so ambitious and unheard of?*
- *Who pushed for it? Who is it empowering?*

I trust you, humans.
The sky is the limit!
Everything is possible!

I am inviting you for an informal invitation to discuss Denmark's initiative on **Tuesday, Sept. 22 29** during class time - OPTIONAL



Source