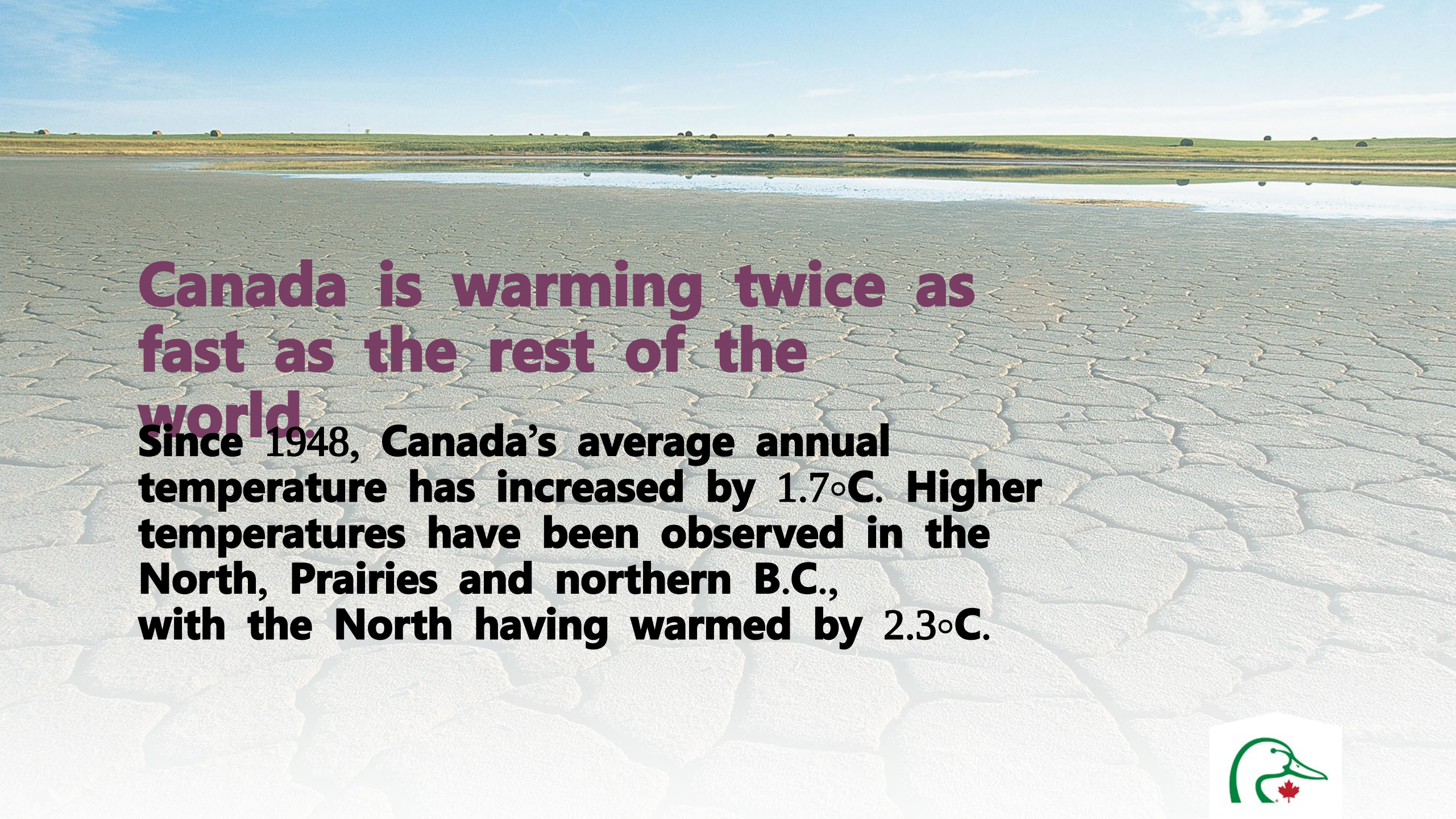
WETLANDS TO THE RESCUE!

How wetlands are a natural tool to limit the climate crisis

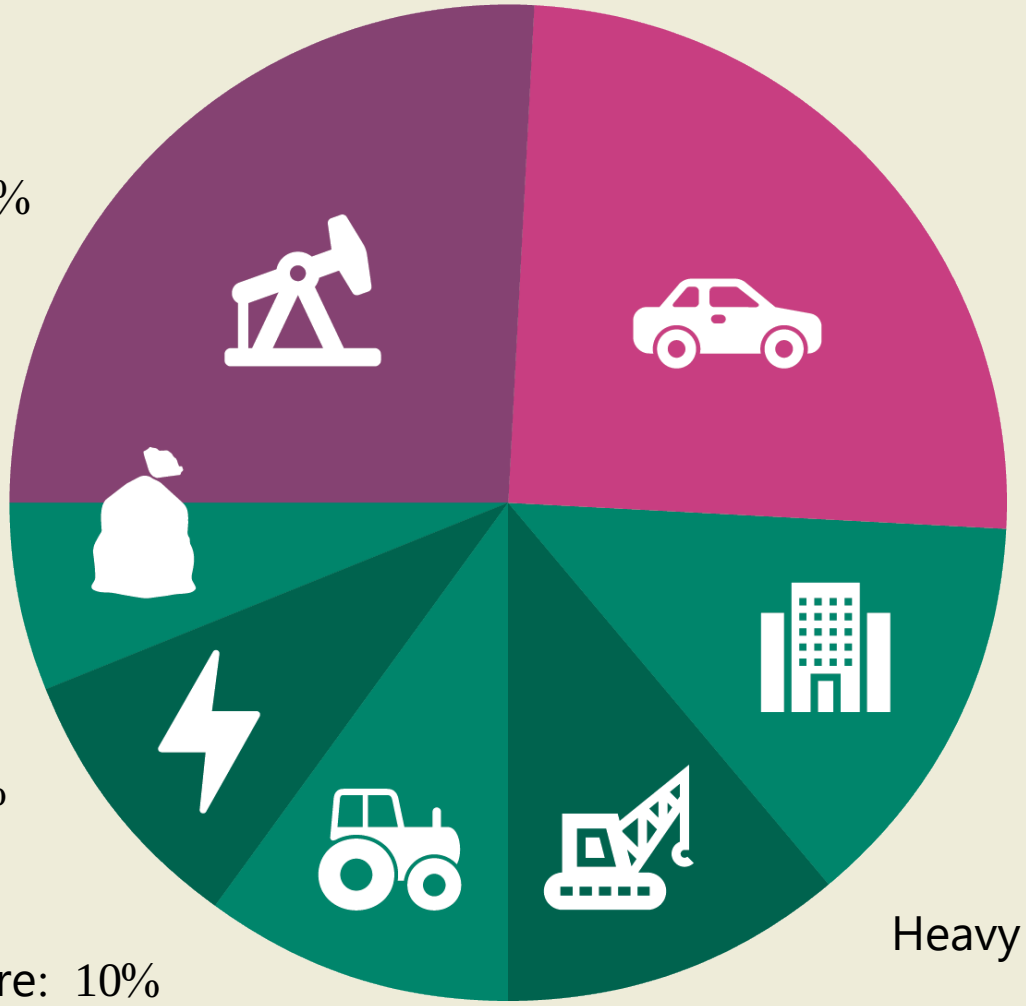
Climate change review



Canada is warming twice as fast as the rest of the world

Since 1948, **Canada's average annual temperature has increased by** 1.7◦**C. Higher temperatures have been observed in the North, Prairies and northern B.C., with the North having warmed by** 2.3◦**C.**

Canada's contribution sources



Oil & Gas: 26%

Transportation: 25%

Waste/Other: 6%

Buildings: 13%

Electricity: 9%

Heavy Industry: 11%

Agriculture: 10%

WE CAUSE
CLIMATE CHANGE
BUT WE CAN
ALSO SOLVE IT.

Solutions to climate change can be nature-based or behaviour-based.

Nature-based solutions involve protecting and restoring natural spaces

Behaviour-based solutions are household or lifestyle changes

Game time!

HAVE YOU EVER HEARD OF _____ AS A **CLIMATE CHANGE SOLUTION**?

Have you ever heard of _____ as a climate change solution?

Carpooling, biking, walking to school, taking public transit

Are these nature-based or behaviour-based solutions?

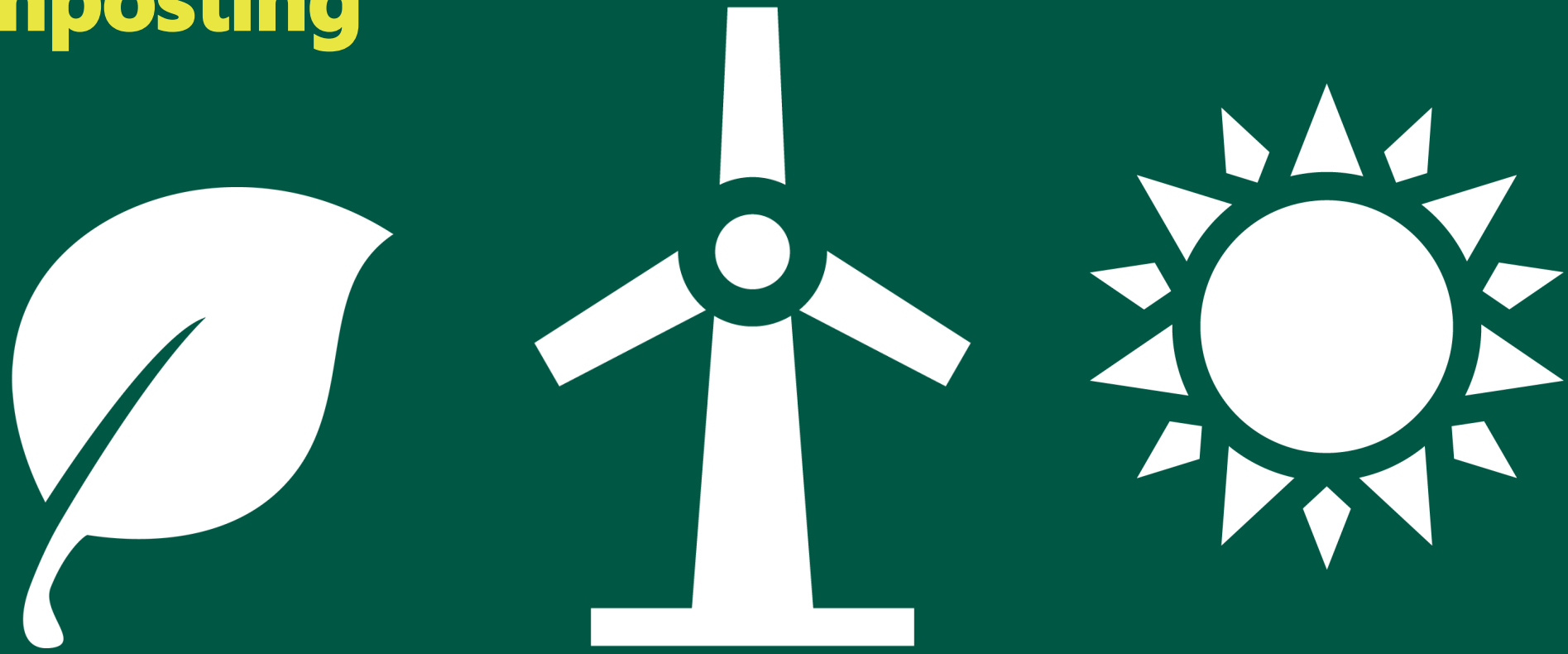
Have you ever heard of _____ as a climate change solution?

Turning off lights when not needed
Unplugging/turning off electronics

Are these nature-based or behaviour-based solutions?

Have you ever heard of _____ as a climate change solution?

Renewable energy: solar and wind
Composting



Are these nature-based or behaviour-based solutions?

Have you ever heard of _____ as a climate change solution?

Planting a tree
Protecting forests
Protecting coral reefs

Are these nature-based or behaviour-based solutions?

PROTECT
WETLANDS?

N

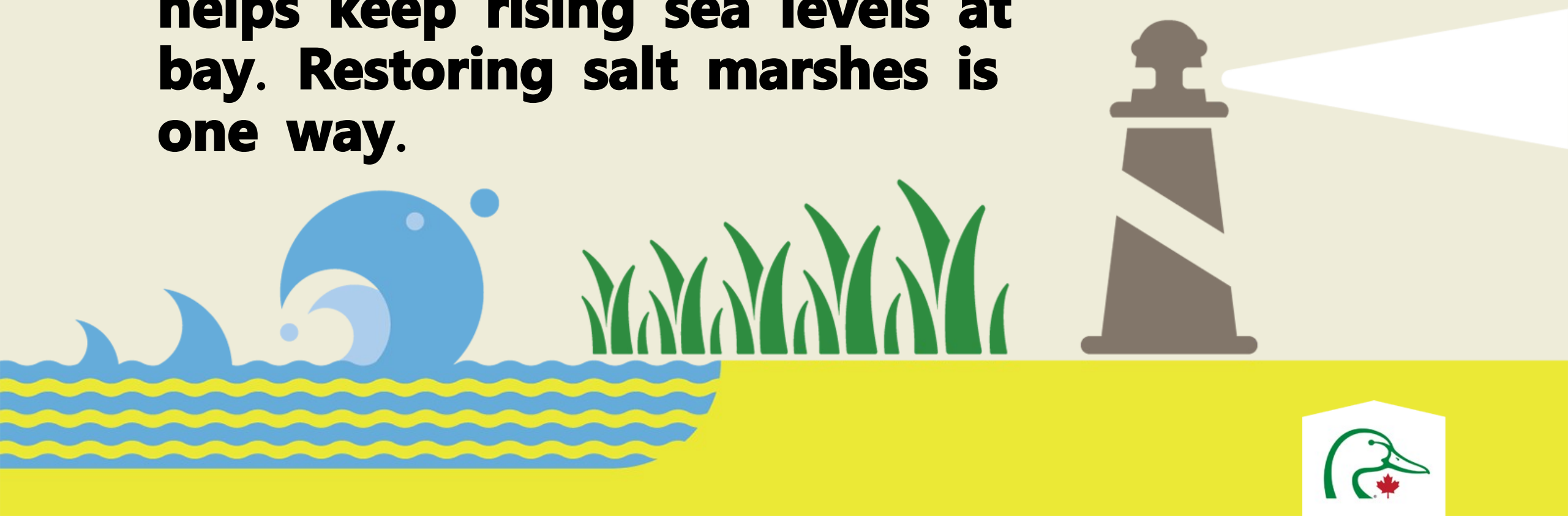
What is a wetland again?

WETLANDS: HOW DO THEY LESSEN THE IMPACTS OF CLIMATE CHANGE?

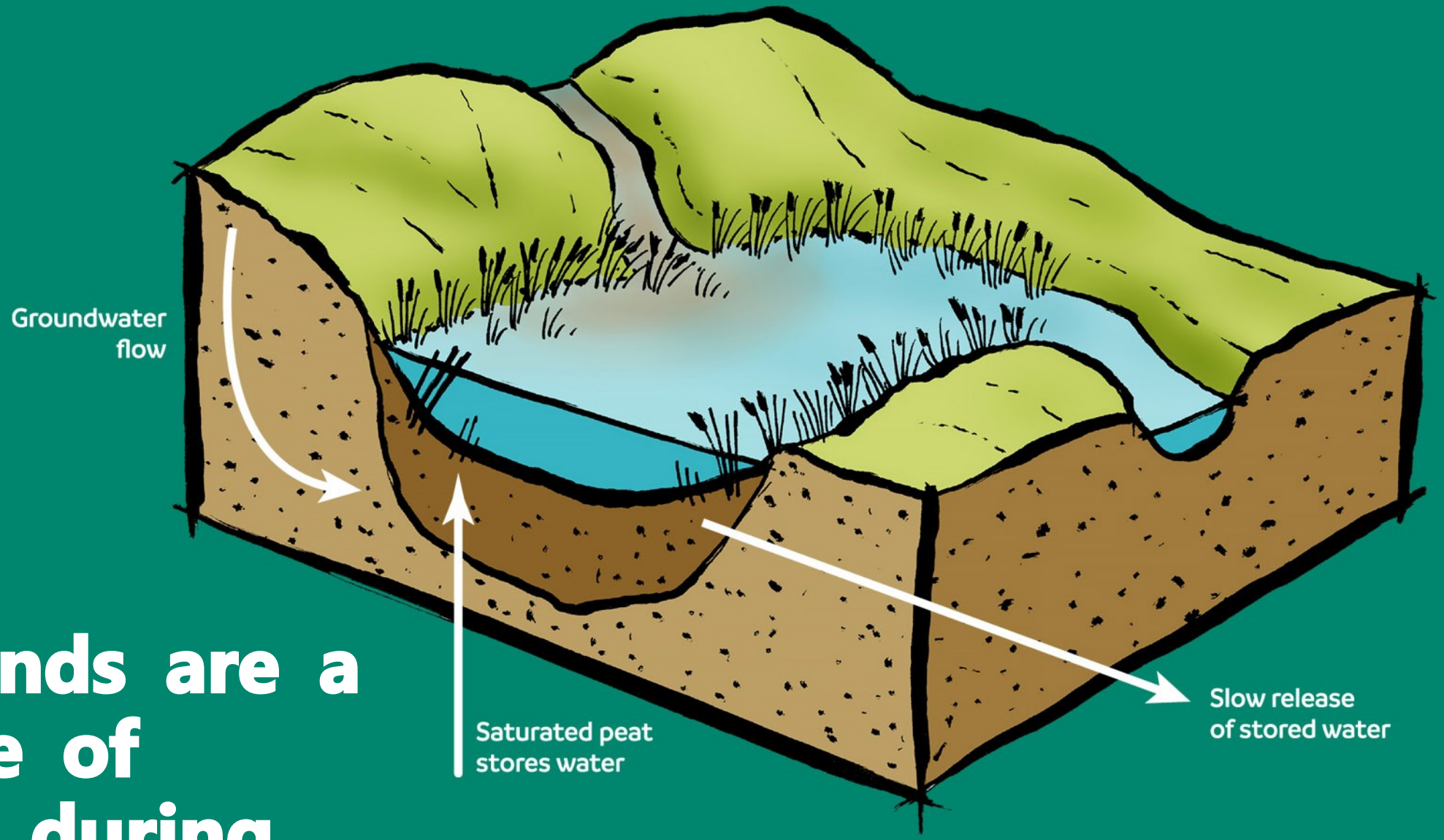
Wetlands protect coastal regions from storms

Wetlands protect coastal regions from sea-level rise

Conserving coastal wetlands helps keep rising sea levels at bay. Restoring salt marshes is one way.



Wetlands are a source of water during droughts



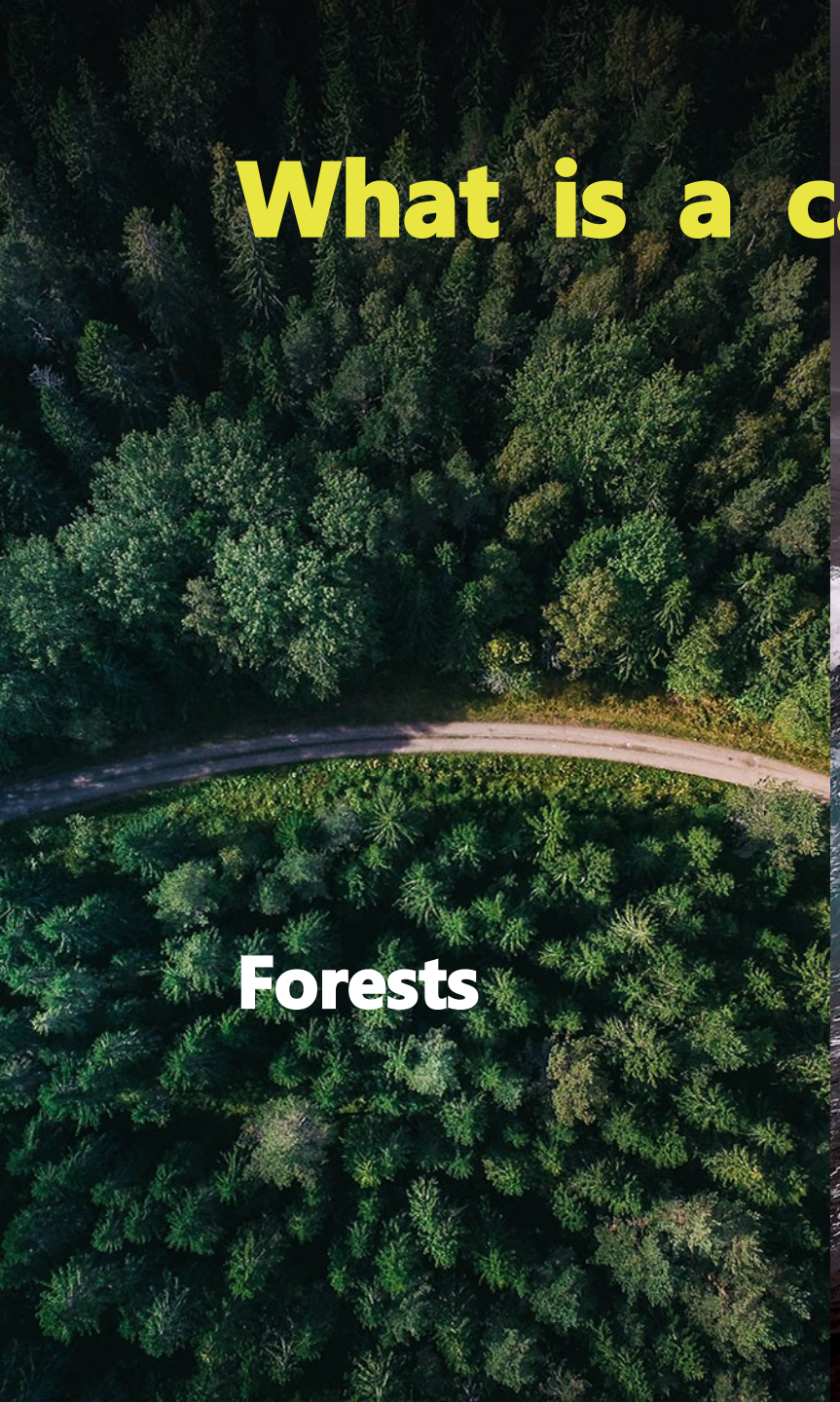
Wetlands store and slow water during floods


Wetlands create a cooling effect

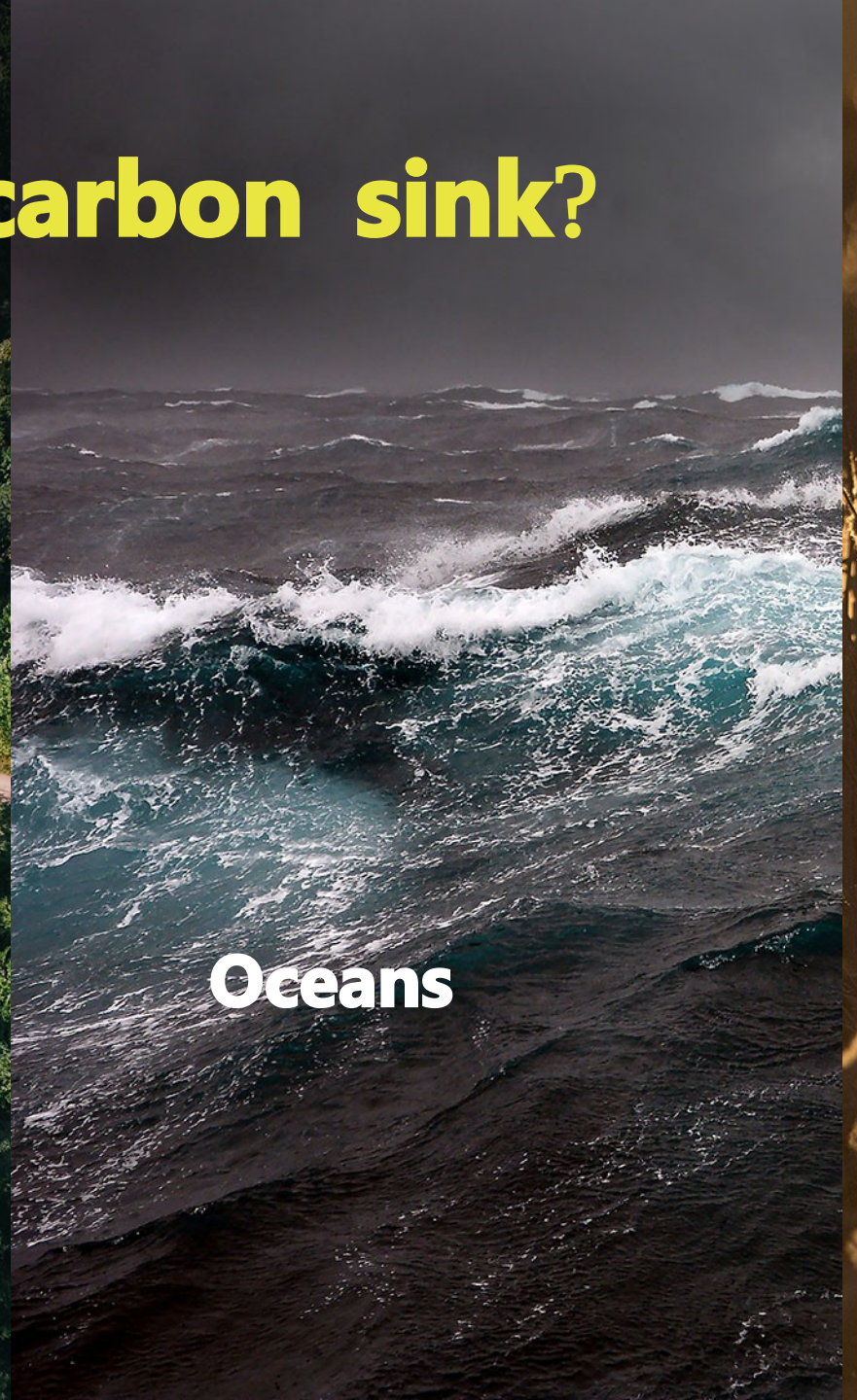
Wetlands store carbon

Wetlands cover a small amount of the Earth's surface (2-5%), but account for 20-30% of carbon stored in the ground.

What is a carbon sink?



Forests

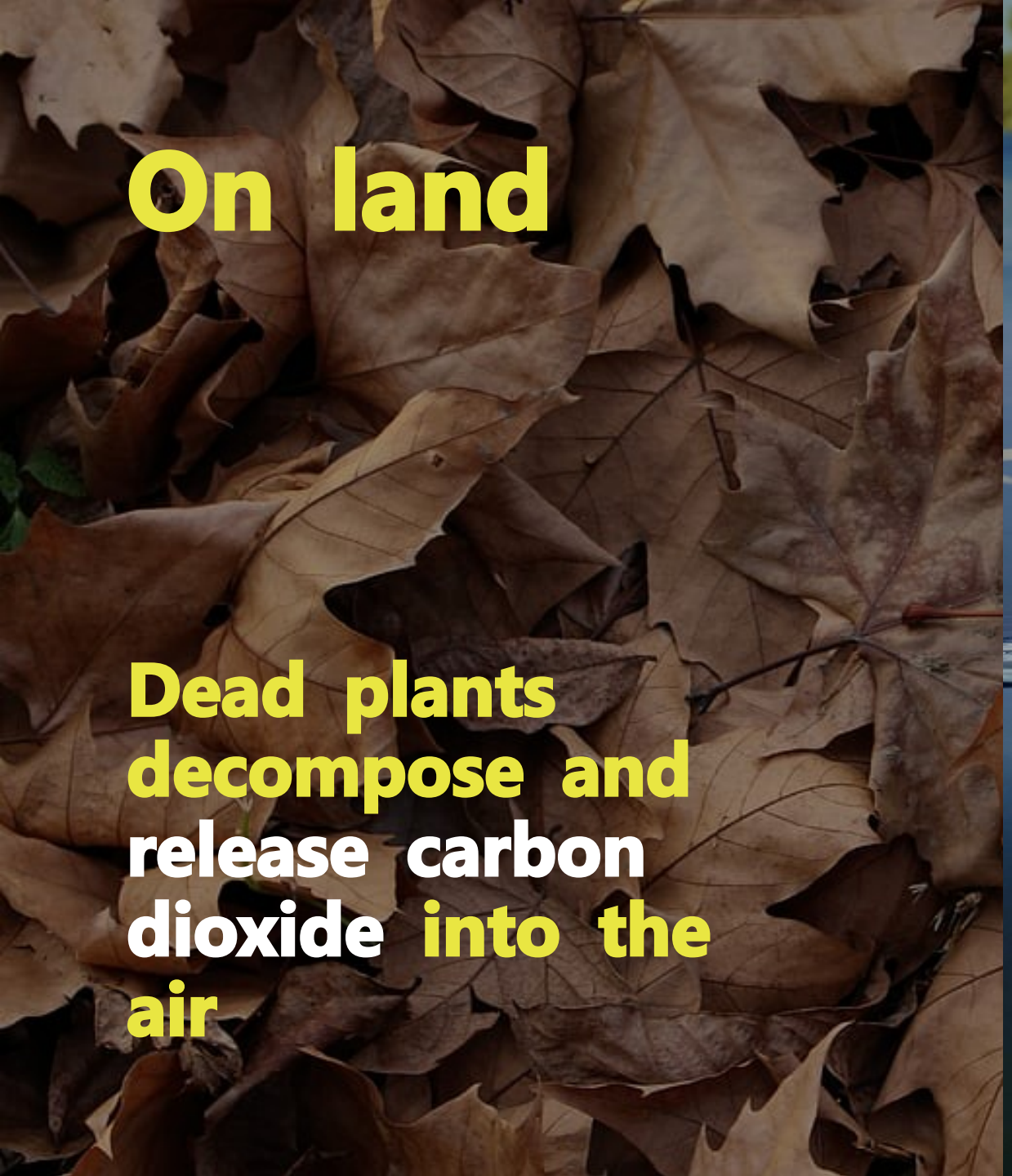


Oceans

Wetlands

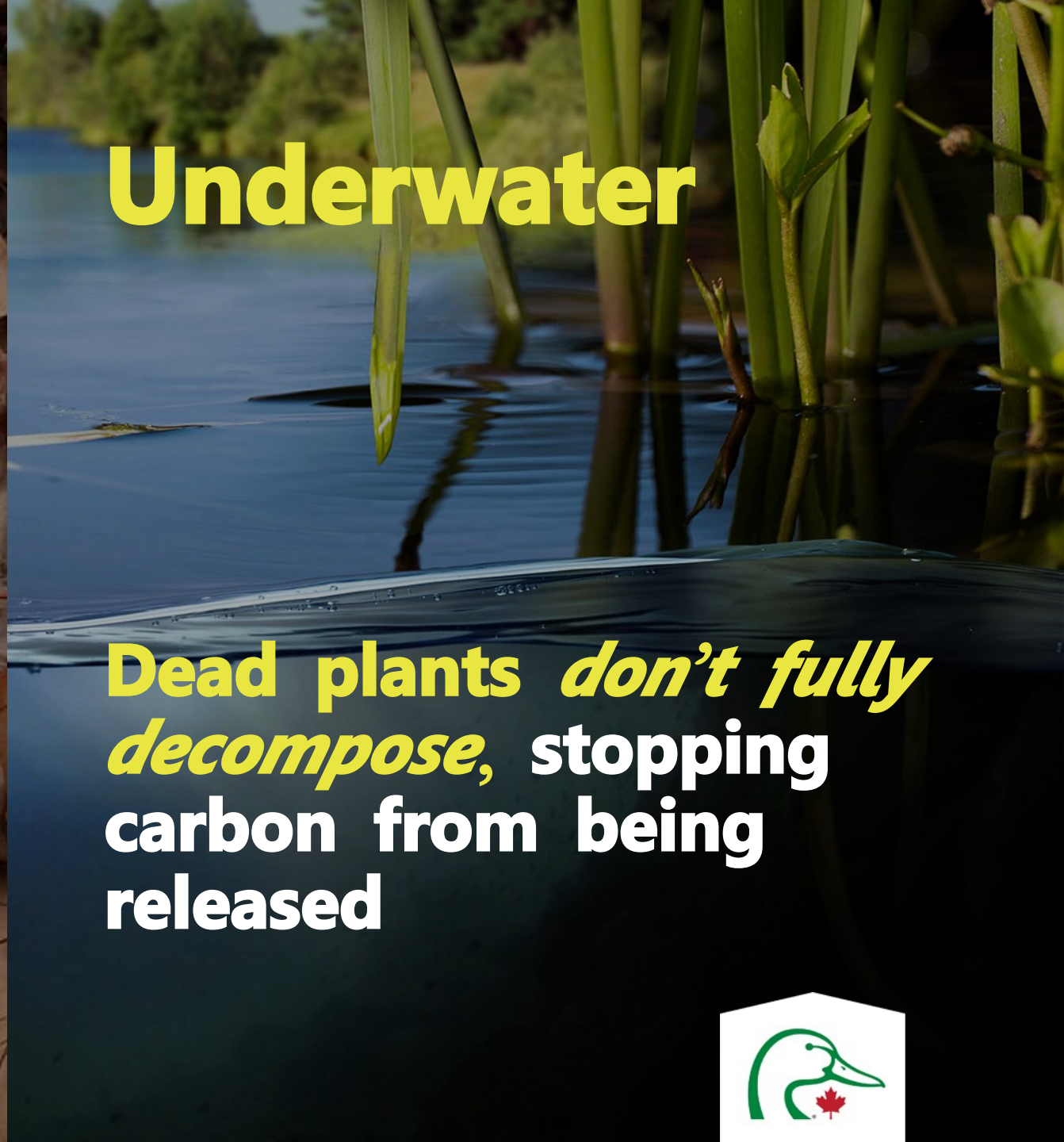
What is a carbon source?

How do wetlands store carbon?



On land

Dead plants decompose and release carbon dioxide into the air



Underwater

Dead plants *don't fully decompose*, stopping carbon from being released

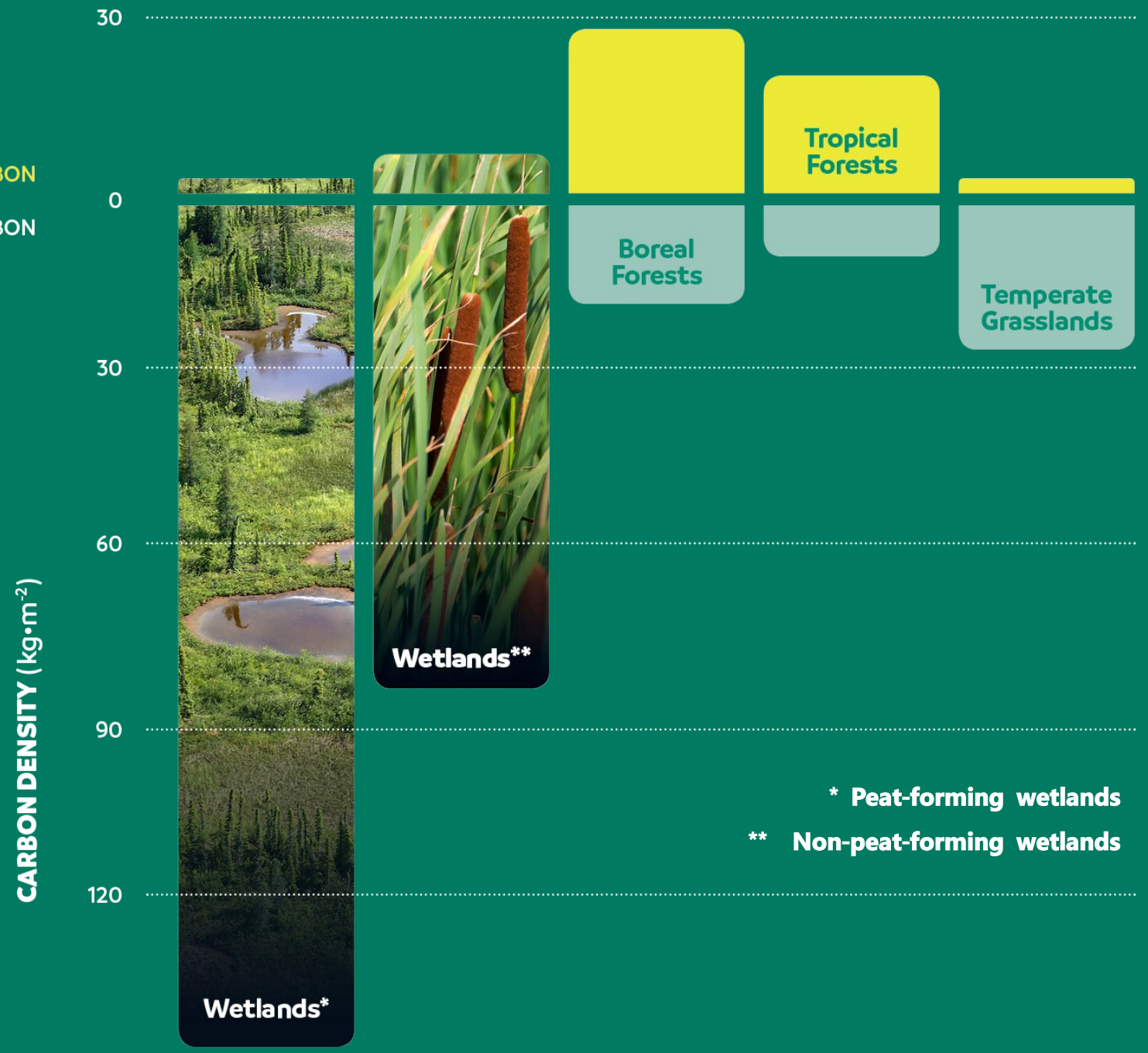

On land
Underwater
Oxygen available for decomposition
Little to no oxygen available for decomposition

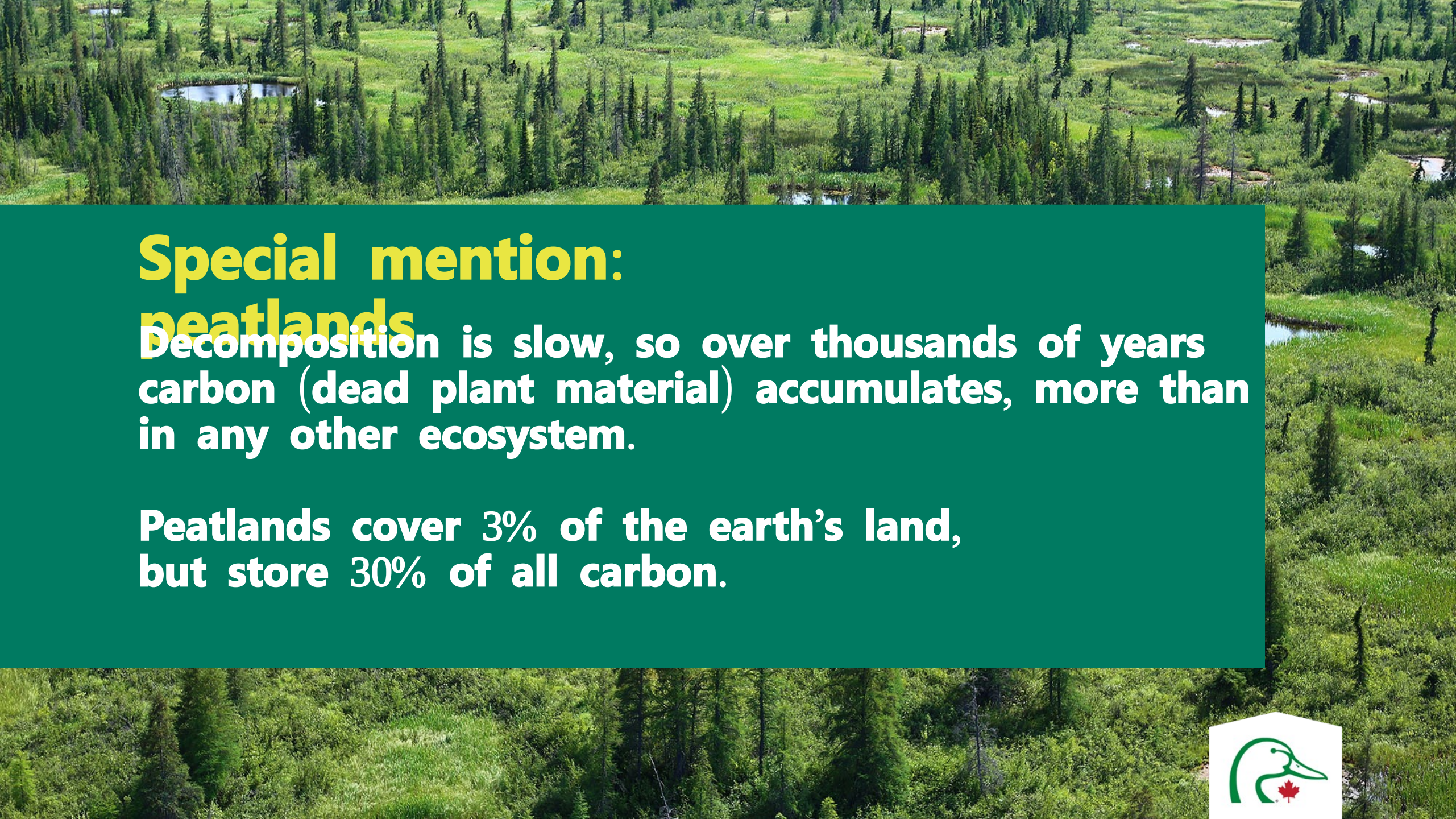
RECAP!

How do wetlands store carbon?

- Wetland plants absorb carbon dioxide from the air as they grow
- When they die, that carbon doesn't get released back into the air

Storing carbon

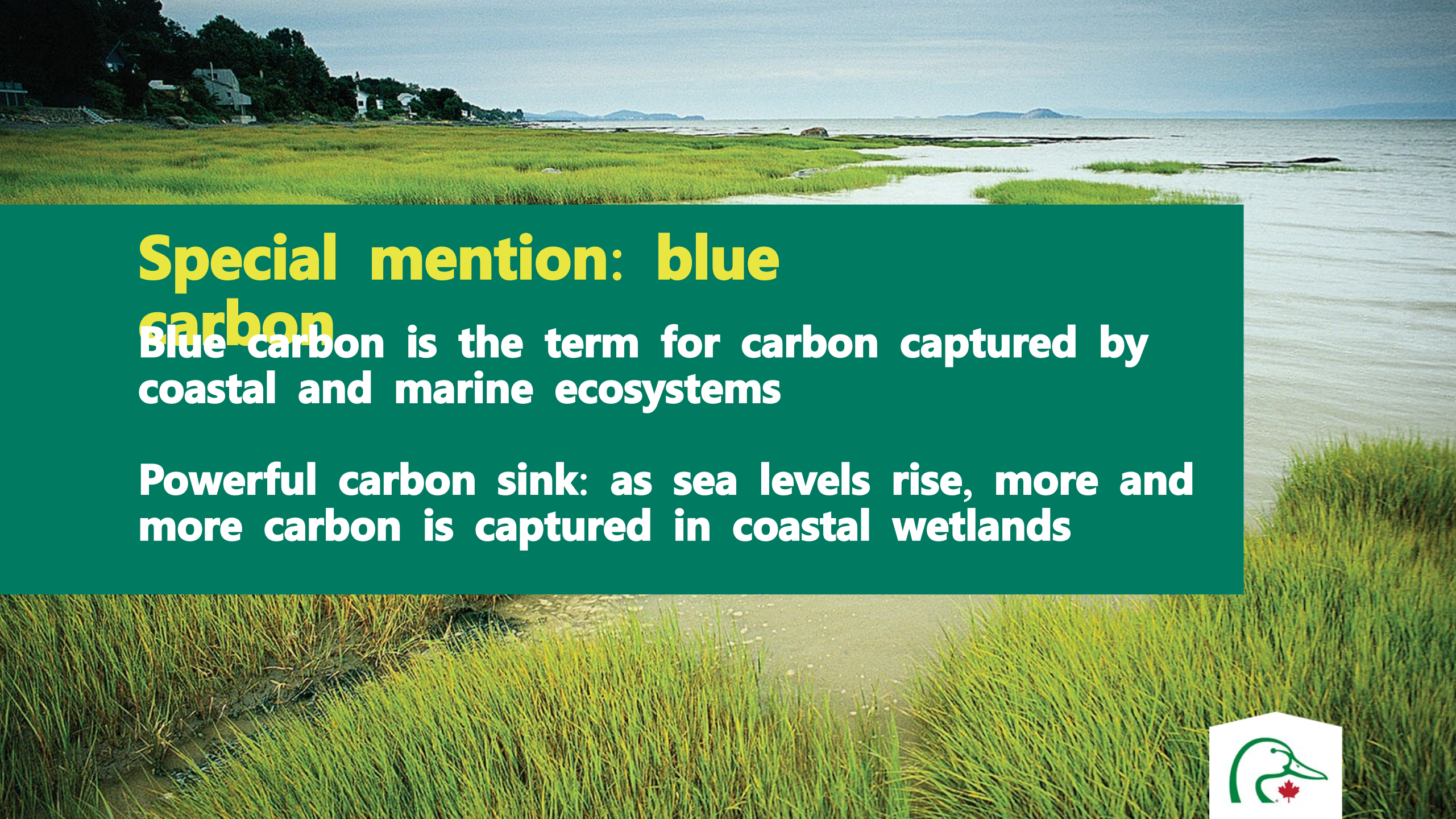




Special mention: peatlands

Decomposition is slow, so over thousands of years carbon (dead plant material) accumulates, more than in any other ecosystem.

Peatlands cover 3% of the earth's land, but store 30% of all carbon.



Special mention: blue carbon

Blue carbon is the term for carbon captured by coastal and marine ecosystems

Powerful carbon sink: as sea levels rise, more and more carbon is captured in coastal wetlands

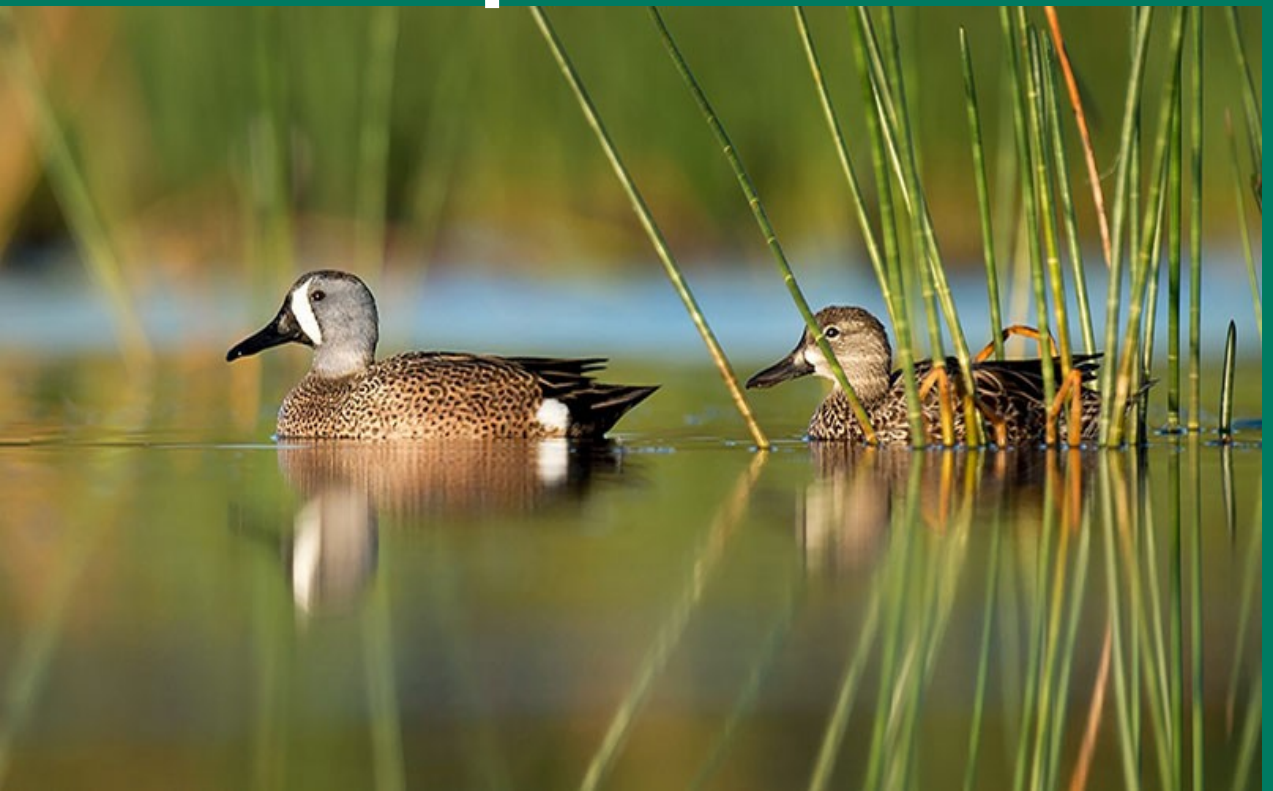
CAN WETLANDS BECOME A **CARBON SOURCE?**

Yes, when they are drained! The balance of carbon that goes in versus out, tips over to more carbon being released into the atmosphere than captured.

CAN CLIMATE CHANGE NEGATIVELY AFFECT WETLANDS? **YES!**

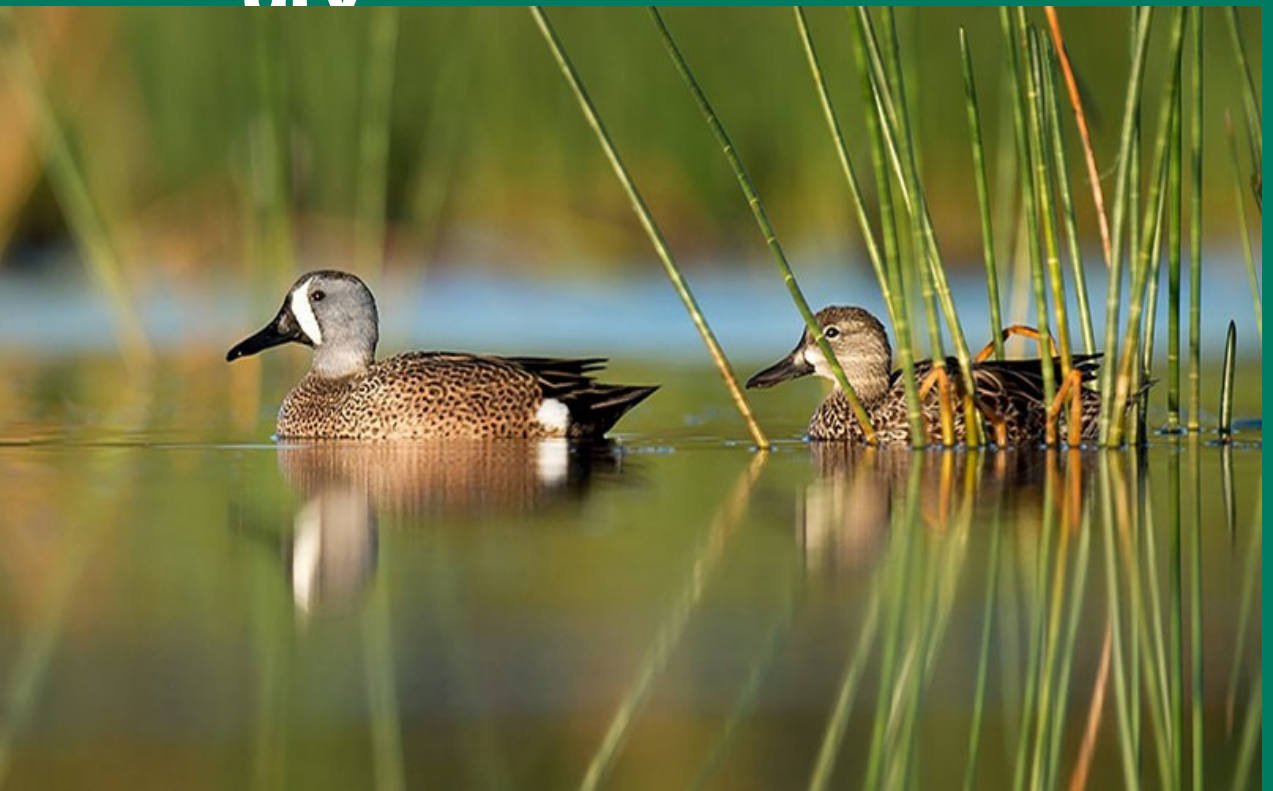
What makes a wetland is its hydroperiod

This is the amount of consecutive days/year that a wetland is wet – affecting what vegetation grows and which species use the wetland for shelter, food and reproduction.



Climate change is affecting the lengths of “wet periods” in wetlands

In some places, wetlands will become more wet – while in other places wetlands will become more dry



Climate change is affecting the lengths of "wet periods" in wetlands

This may make it harder for wetlands to provide us with:

- productive ecosystems
- habitat for wildlife to thrive
- natural filtration of contaminants

IT'S OK TO NOT FEEL OK WHEN TALKING ABOUT CLIMATE CHANGE.

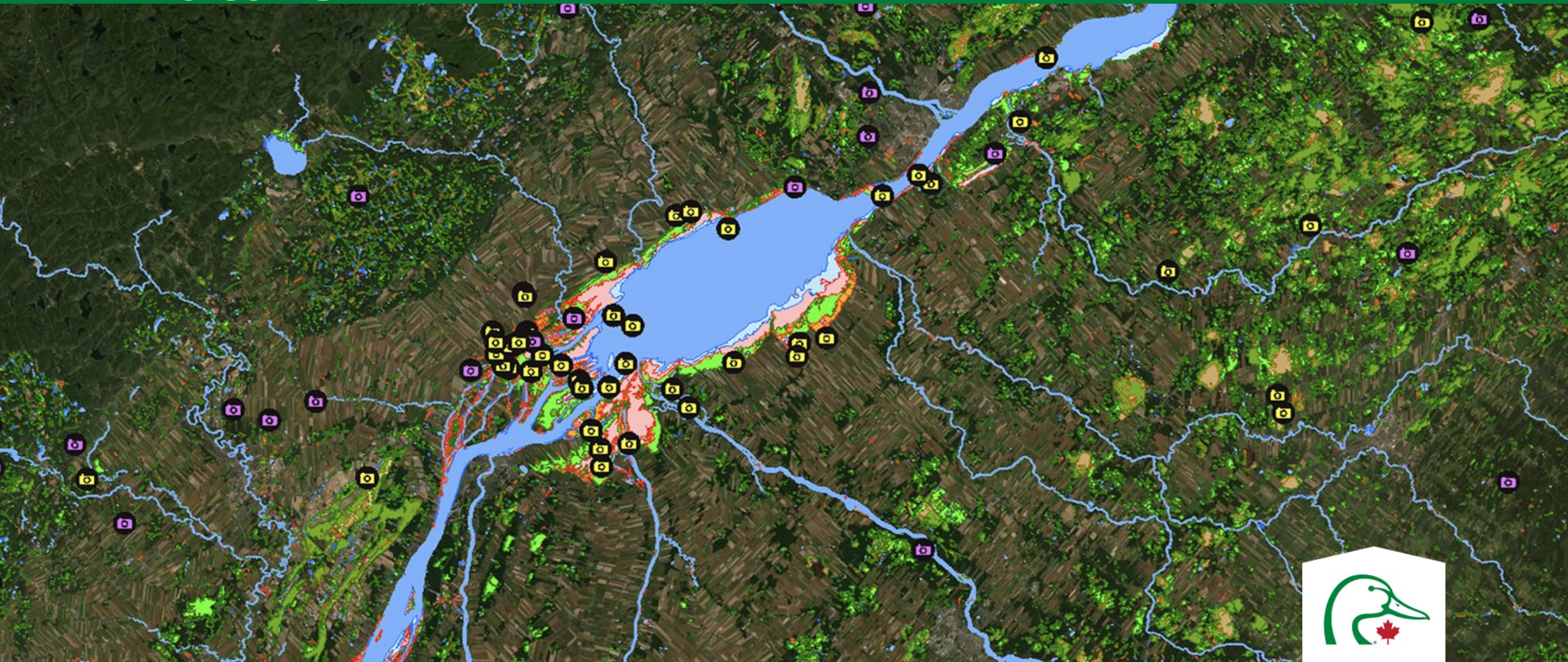
FEAR ANGER
ANXIETY
HOPELESSNESS
DENIAL
GRIEF

WHAT IS DUCKS UNLIMITED CANADA DOING ABOUT IT?

Research

Our scientists have discovered that it's better to conserve existing wetlands than build new ones.

Research: Modeling the future



Conservation


Ask for change
Working on policy changes to increase wetland protections

Education

Wetland Centres of Excellence

Network of schools engaging in student-led conservation

Wetland Activities

Award-winning resources available for teachers and students

Education

DUC Interpretive Centres

Centres that connect people of all ages with the wonders of nature

Online Education

Virtual field trips where students discover what makes wetlands special

Education

Wetland Heroes Program

Recognizing young leaders making a difference for our wetlands

Time for a change of pace!
Take a 45-minute break to complete the "My Hobby, Our Climate" exercise.

(If not, jump to slide 51.)

Meet five teenagers from across Canada

What activities do you enjoy doing?

WE HAVE ALL OF THIS TO GAIN IF WE TACKLE THE CLIMATE CRISIS NOW

THE FUTURE IS NOT WRITTEN YET

Yes, our future will be different – but it is up to us to decide what our future will look like. We can choose a different path!

A BETTER FUTURE MEANS A CHANGE OF BEHAVIOUR

On a personal scale and on a societal scale – communities, cities, provinces and countries need to change behaviours.

Why is change hard?

- Loss aversion: being afraid of losing what we have, more than what we can gain
- Knowing it will be difficult
- Frustrating because of uncertainty around it
- Thinking all or nothing, which is a counterproductive to reach our goal. Change is gradual and has setbacks, and that is OK!

REMEMBER: CHANGE DOES HAPPEN

...and youth can make a difference!

Example: Maple Spring (2012) – Quebec students protest tuition fee hikes

Result: Tuition fee hike cancelled

Autumn Peltier, 13

Result: New fund created to protect water for First Nations communities

PHOTO © MANUEL ELIAS

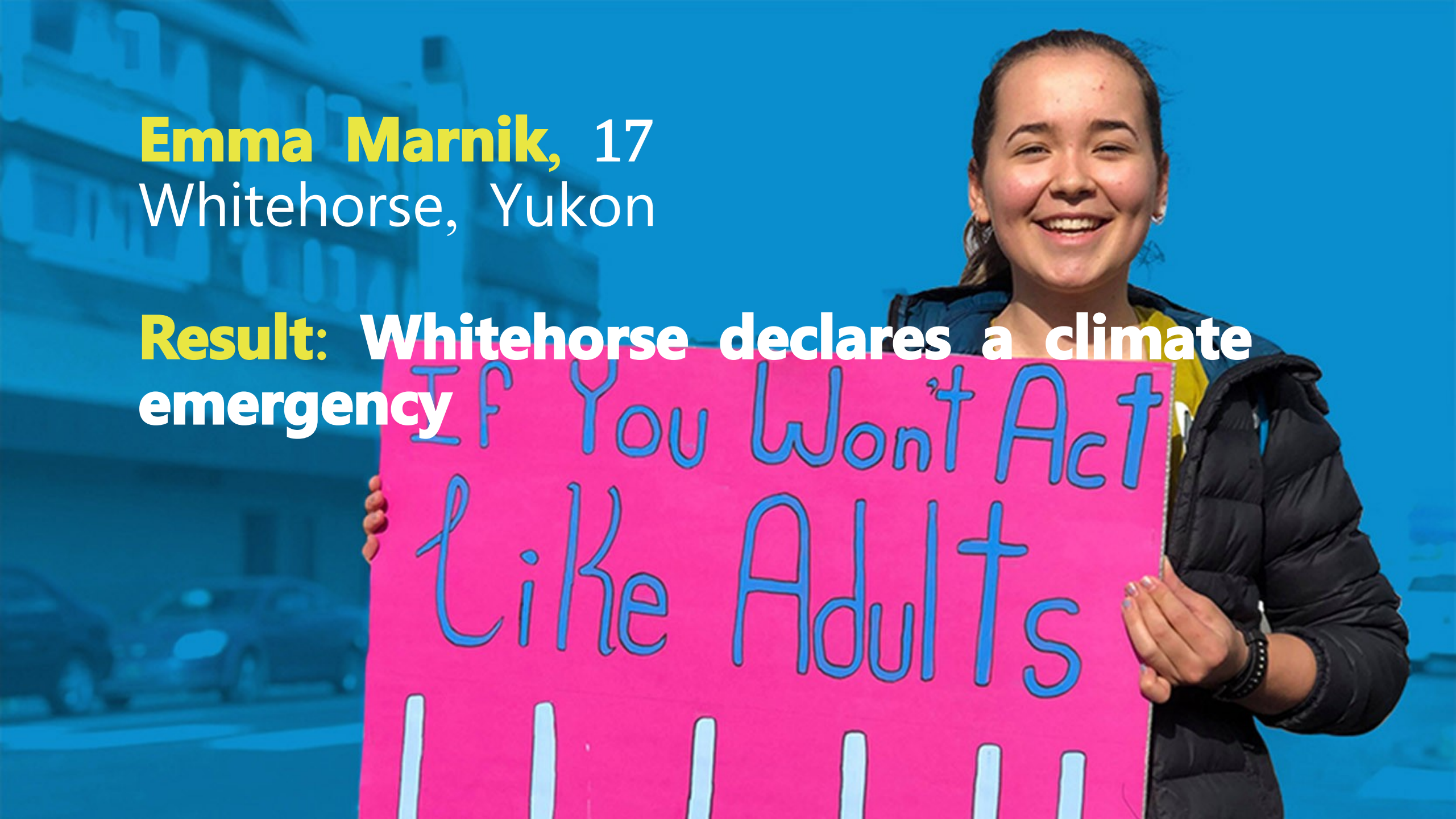
Greta Thunberg, 17

Result: Climate strikes in 160+ countries

PHOTOS © MICHAEL CAMPANELL/KATE MUNSCH

Emma Marnik, 17
Whitehorse, Yukon

Result: Whitehorse declares a climate emergency




Chase Cardinal, 19
Calgary, Alberta
Result: Climate strikes grew to thousands of supporters

Savi Gellatly-Ladd,
17
Toronto, Ontario
Result: Brought hundreds of people into the climate movement

WHAT CAN I DO ABOUT IT?

LET'S TALK SOLUTIONS!

Take action... IN YOUR SCHOOL

Advocate for curriculum changes

Start a schoolyard compost bin

Join the environment club

Take action...
IN YOUR COMMUNITY

Meet local politicians

Join an advocacy group

Join a local community garden

Take action... PERSONALLY

Start a project

Bike or carpool to **get around**

Get out and vote

If you take action…

LET US KNOW!

Nominate yourself as a Wetland Hero

We recognize young leaders making a difference for our wetlands!

What's your idea?

- We want to hear about it! Send us a message at education@ducks.ca
- A good plan helps make an idea come true. Check out our student planning guide to help your project succeed.
- Nominate yourself as a Wetland Hero: www.ducks.ca/initiatives/wetland-heroes/
- Like us on Facebook: @educationducks