

An aerial photograph of a vast, turbulent ocean. The water is a deep, dark blue-green, with numerous white-capped waves breaking across the surface. The sky above is filled with heavy, grey clouds, with some light breaking through near the horizon. The overall mood is one of power and fragility.

Our Fragile Oceans

Caring for the Oceans



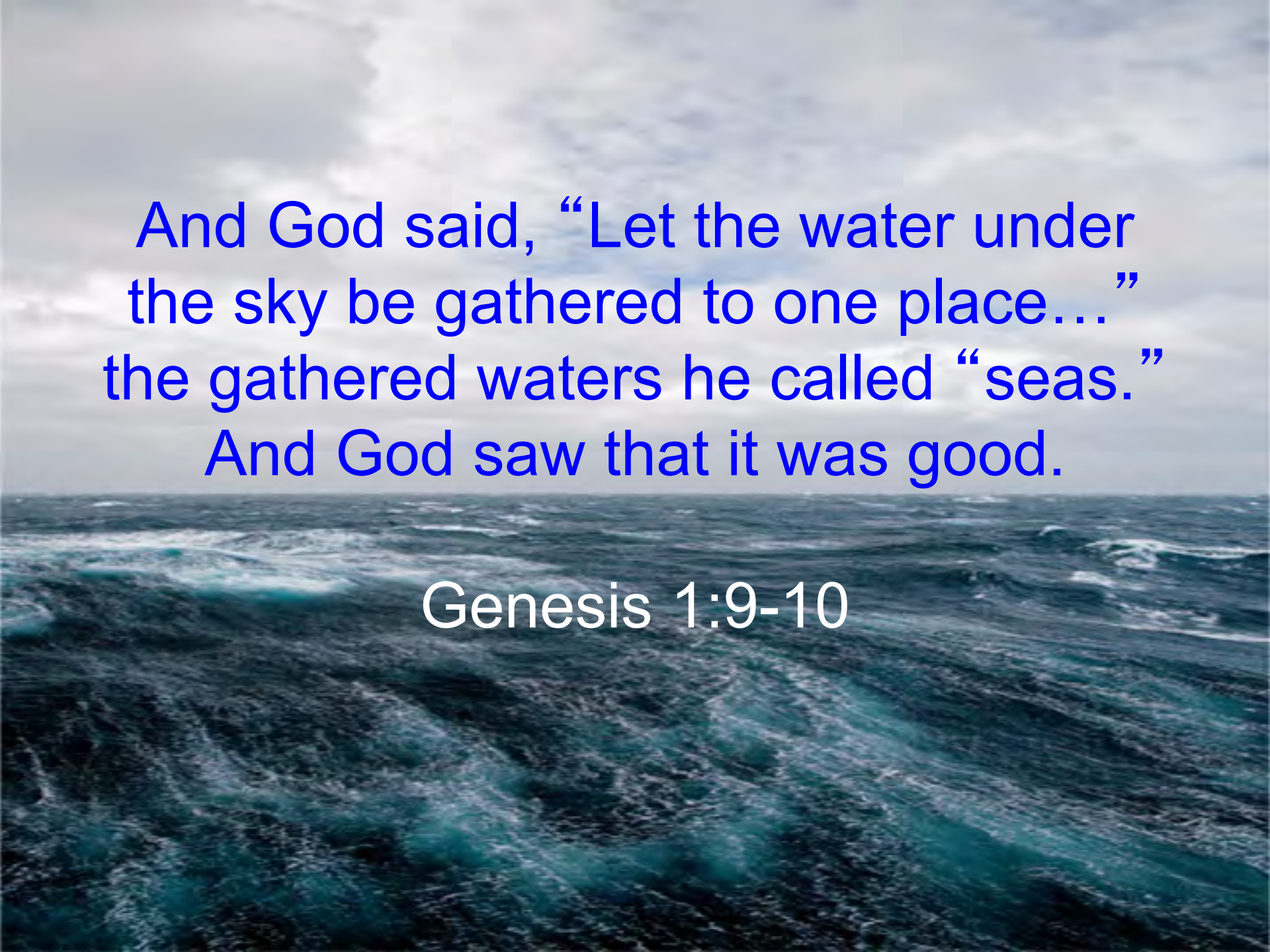
God's story & the Earth's story

All good stories have beginning, middle and end

The Earth's story is no different:

- ✖ Gen 1:1 in the beginning God made the heaven and the earth
- ✖ Rev 21:1 then I saw a new heaven and a new earth

We are living in the middle of and affecting the Earth's story! Embedded in God's story...

The background of the slide is a photograph of a vast, turbulent ocean. The water is dark and churning, with white foam from the waves contrasting against the deep blue and green tones. The sky above is filled with heavy, grey clouds, creating a somber and powerful atmosphere. The text is overlaid on the upper portion of the image.

And God said, “Let the water under the sky be gathered to one place...”
the gathered waters he called “seas.”
And God saw that it was good.

Genesis 1:9-10



Oceans & climate

- Water has high thermal capacity: top 3m of ocean holds as much heat as entire atmosphere
 - ❖ Average ocean depth ~4km
- Ocean modifies climate over long time periods through links to the atmosphere
- Ocean circulation moves heat over huge distances
 - ❖ North Atlantic ocean releases ~1 Petawatt (= 10^{15} watts) to atmosphere
 - ❖ ~30,000 times average output of all UK power stations



The Day after Tomorrow

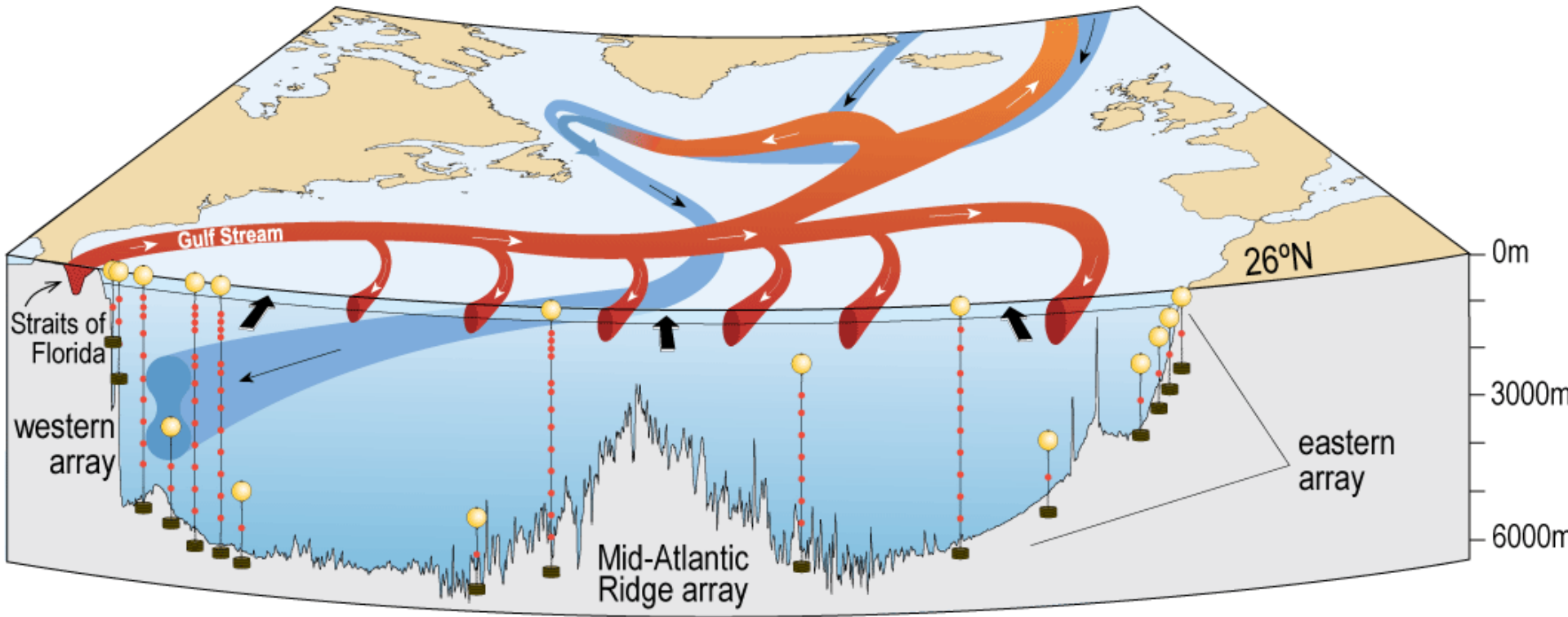
- “polar melting might disrupt the North Atlantic Current”
- Fact or fiction? Should we be worried?
- What will happen the day after tomorrow?

The Atlantic Ocean circulation



**very
simplified**

RAPID @ 26.5°N (2004-2020)



Deployed and array of moorings that measure temperature, salinity (saltiness) and currents at the east and west and either side of the mid-Atlantic Ridge.

Measuring the strength and vertical structure of the Atlantic Meridional Overturning Circulation (AMOC) and associated heat transport



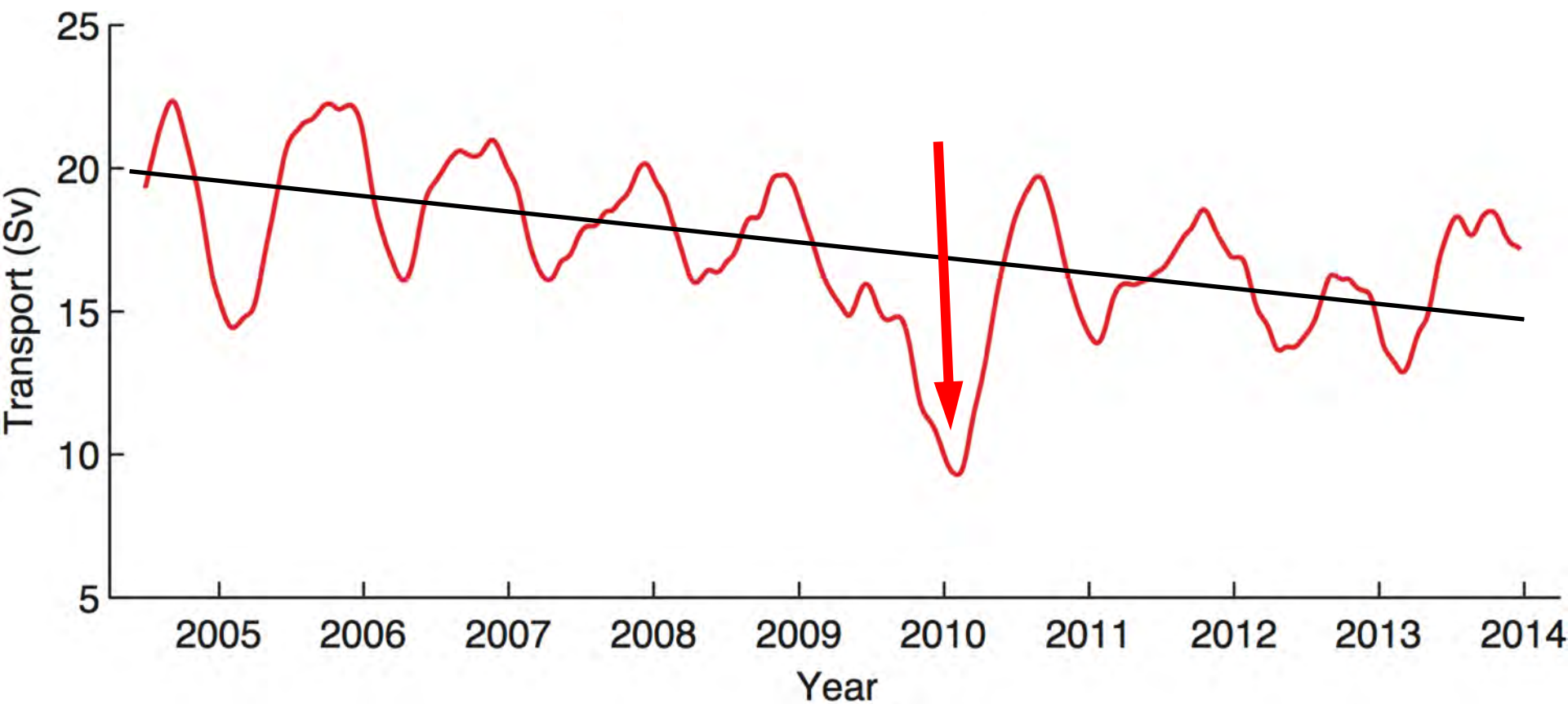
Geostrophy

Balance between pressure gradient and effect of Earth's rotation on flow

For atmosphere (N. hemisphere):
“if the wind is at your back the low pressure will be on your left”
(Buys-Ballot's law)

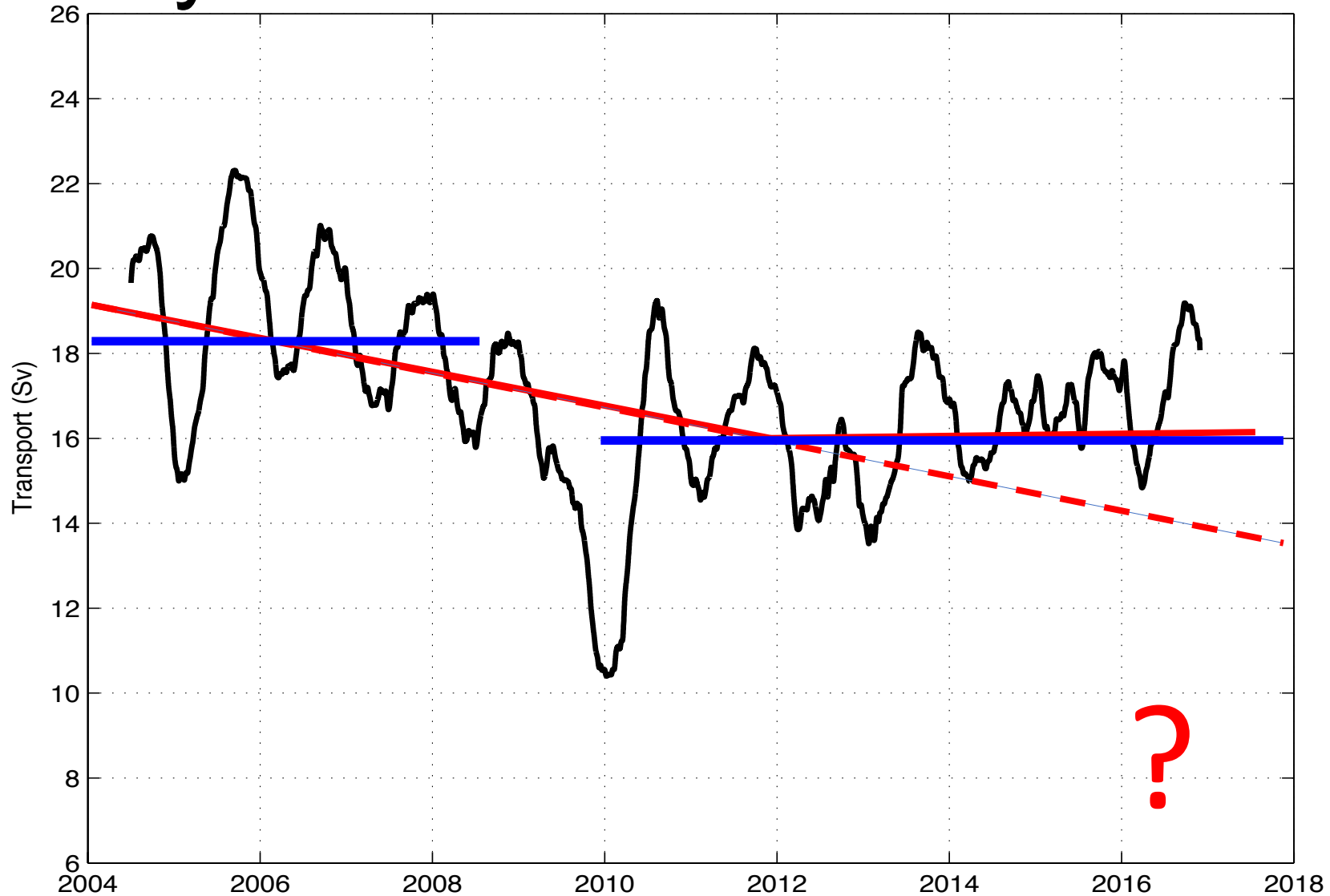
n.b. from Greek: *geo* (of Earth) *strophe* (turning)

10 years of circulation 2004-14



1 Sverdrup (Sv) = $10^6 \text{ m}^3 \text{ s}^{-1}$ and global discharge of fresh water from all rivers to the ocean is $\sim 1\text{Sv}$

13 years of data 2004-17



A dramatic seascape with a storm brewing over the ocean under a cloudy sky. The water is dark blue and turbulent, with white foam from waves. The sky is filled with heavy, grey clouds, suggesting an approaching storm. The overall mood is somber and urgent.


What will happen the day
after tomorrow?

Not an ice age, global
warming will continue,
but the ocean will affect
where the heat goes!



What should our response be?

Is there a Christian view?



God's story & Earth's story

- creation - Genesis 1 & 2
 - fall - Genesis 3 - disobedient humanity (Adam & Eve) excluded from garden of Eden
 - Israel - God's people (Old Testament)
 - Jesus - birth, death & resurrection
 - church - God's people (New Testament)
 - Jesus returns to Earth - Revelation 19 & 20 - true humanity
- new creation - Revelation 21 & 22

Genesis first and Revelation last books in the Bible



What will happen the day
after tomorrow?

Eschatalogical
(ultimate) answer:
a new heaven
and a new earth



God's plan

To rescue all of creation

- ▼ **creation itself will be set free from its slavery to decay (Romans 8:19-21)**

Plan not just for individuals, but for the whole of creation

- ▼ People and planet!

The key question is:

- ▼ **how then shall we live?**



Back to basics

Jesus' two commandments

Jesus: greatest commandment

Love God (Matthew 22:37-38)

- ❖ The Earth is God's gift to us as humans
- ❖ It belongs to Him ("the Earth is the Lord's", Psalm 24:1)
- ❖ "Trashing someone else's property is incompatible with any claim to love the other person" & "...our treatment of the earth will be ... a measure of our relationship with the creator" (Wright C.)



Jesus: second commandment

Love your neighbour as yourself

(Matthew 22:39)

- ❖ Are our actions causing harm to others elsewhere on the planet?
- ❖ E.g. our CO₂ emissions => global warming => sea level rise / droughts / floods => environmental refugees (mainly the poor)
- ❖ The bible has a lot to say about caring for the poor...





Caring for the oceans

- With regard to ocean warming and acidification need to reduce our use of fossil fuels – i.e. cut CO₂ emissions
- With regard to oceanic plastic pollution need to reduce our use of plastics and prevent them entering the ocean

God's story and Earth's story

Both present a challenge:

- ❖ To understand what we are doing to the Earth and how it is responding
- ❖ To live in a way that cares for both people and planet

