

Mini Presentations

3 September 2026

Jen Hunt - Atlantic Meridional Overturning Circulation

John Burke – Shades of Magic

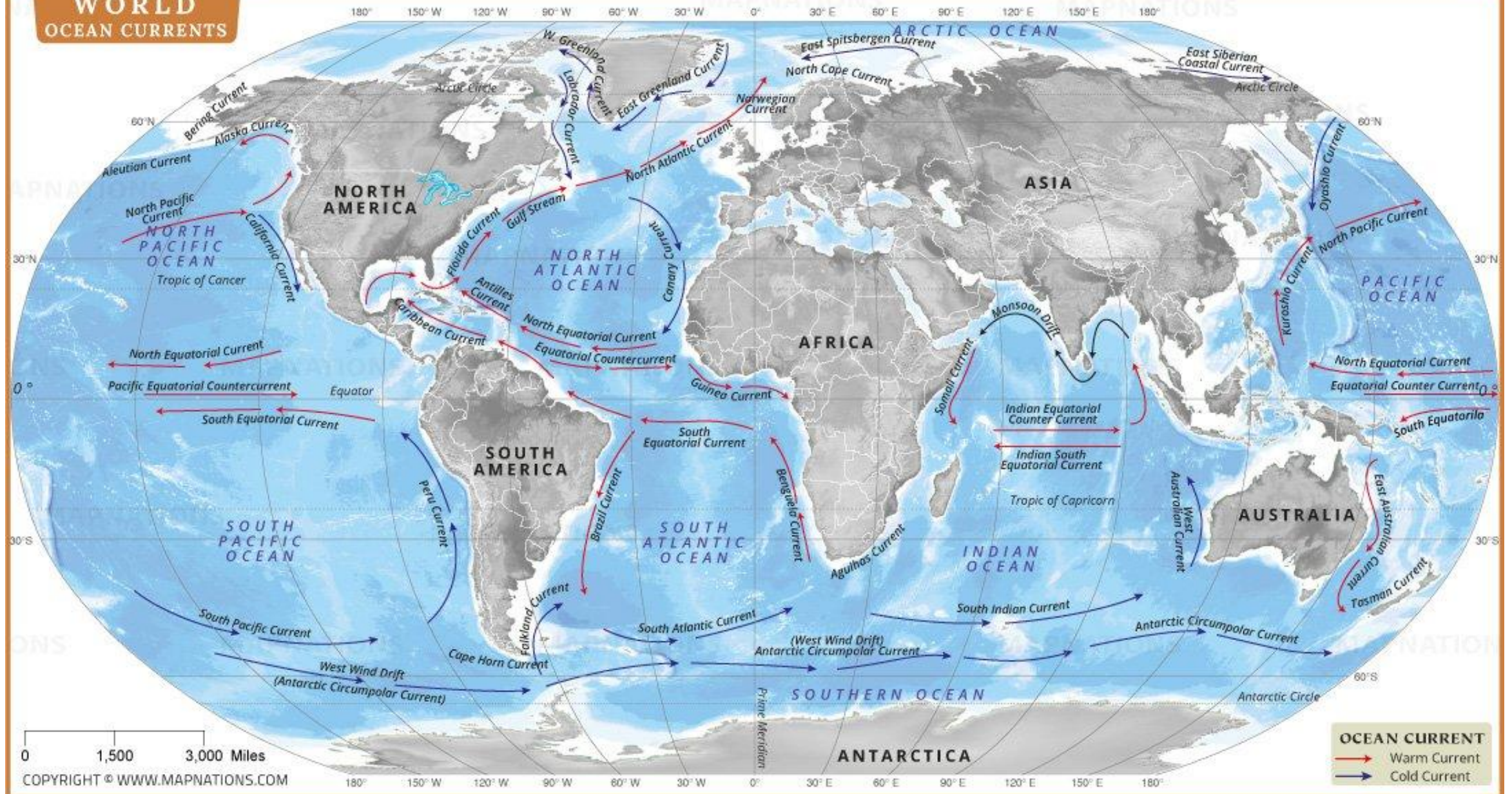
Anne Hagyard - Clinical advances in cancer care 1970 to 2000

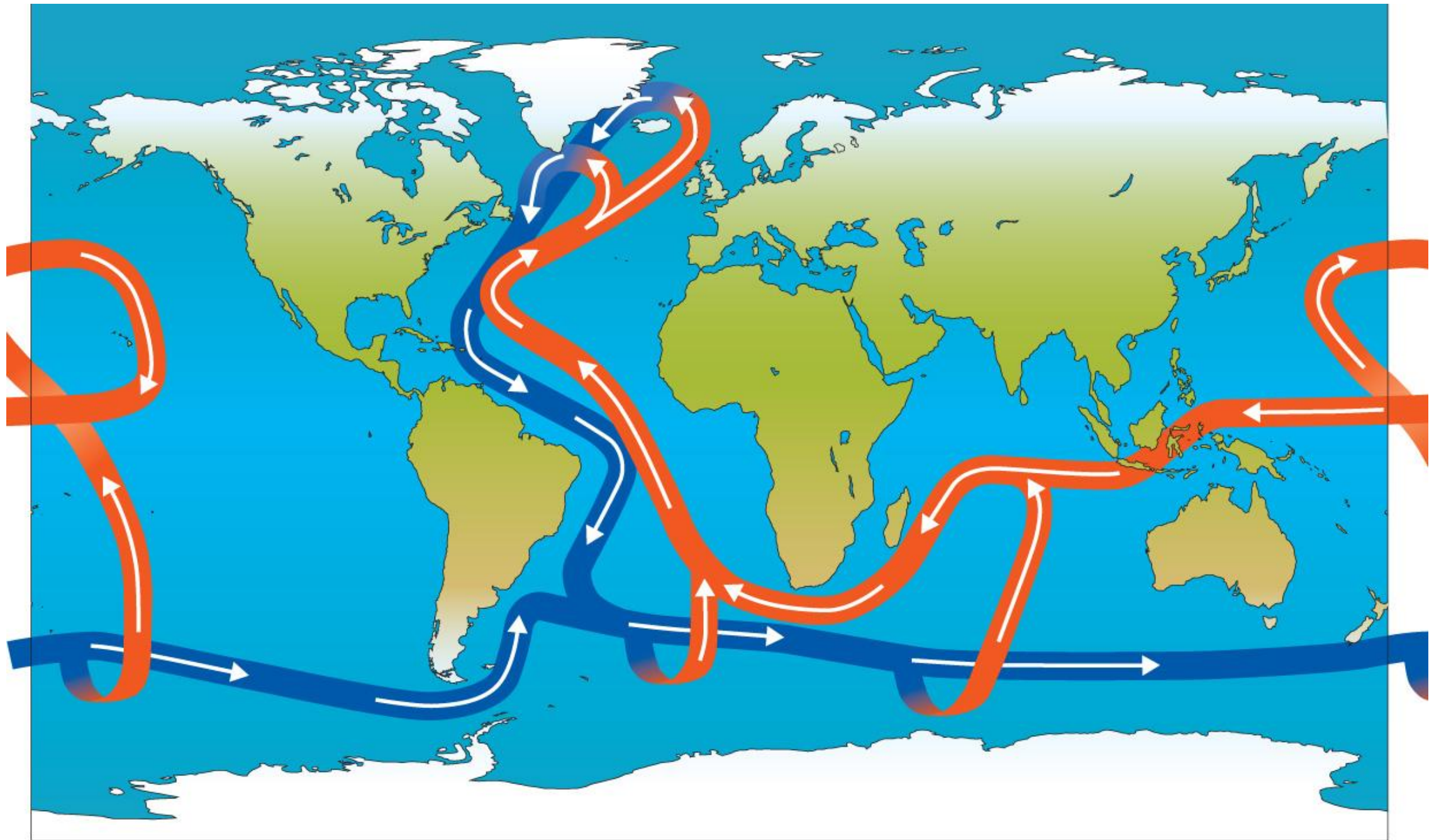
AMOC

Atlantic Meridional Overturning Circulation

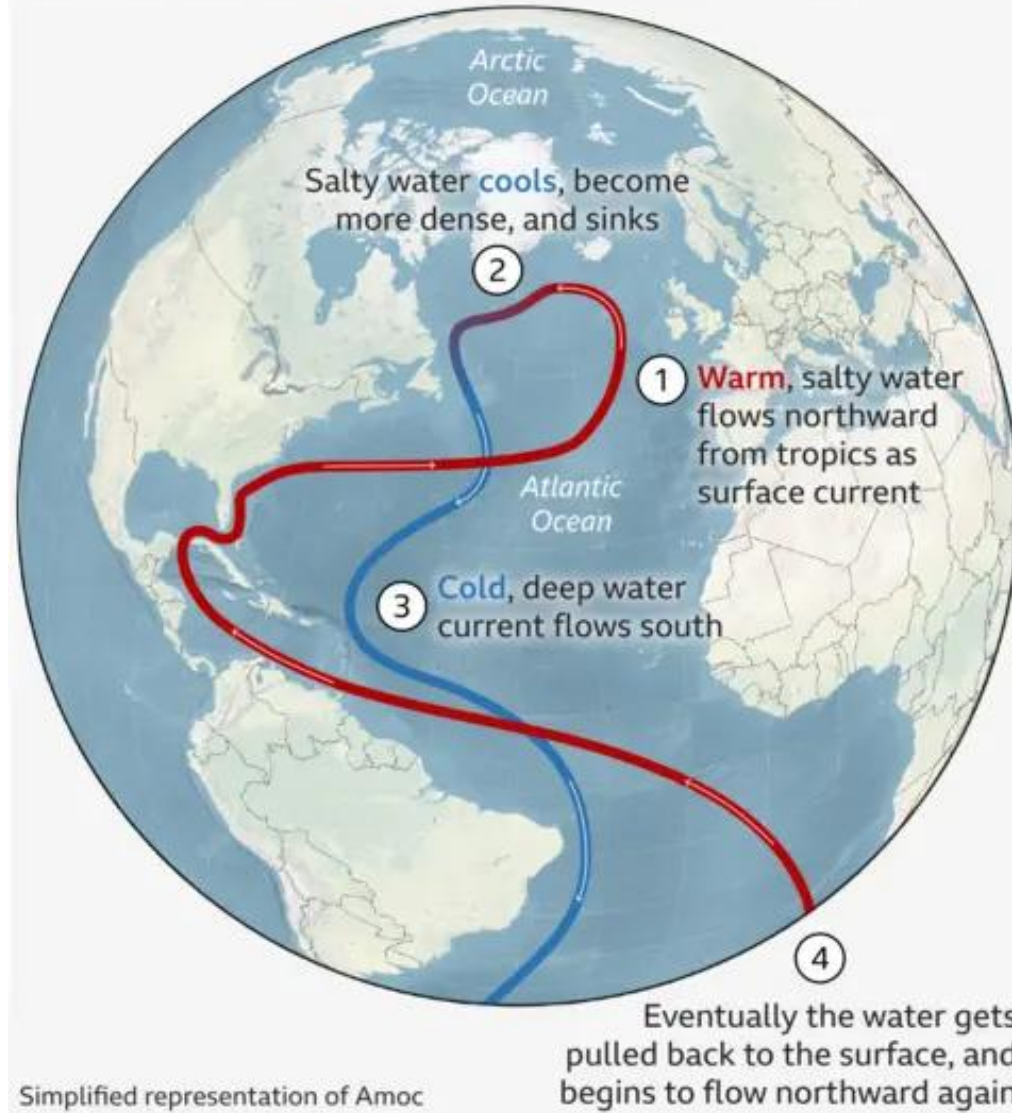
Jen Hunt

WORLD OCEAN CURRENTS





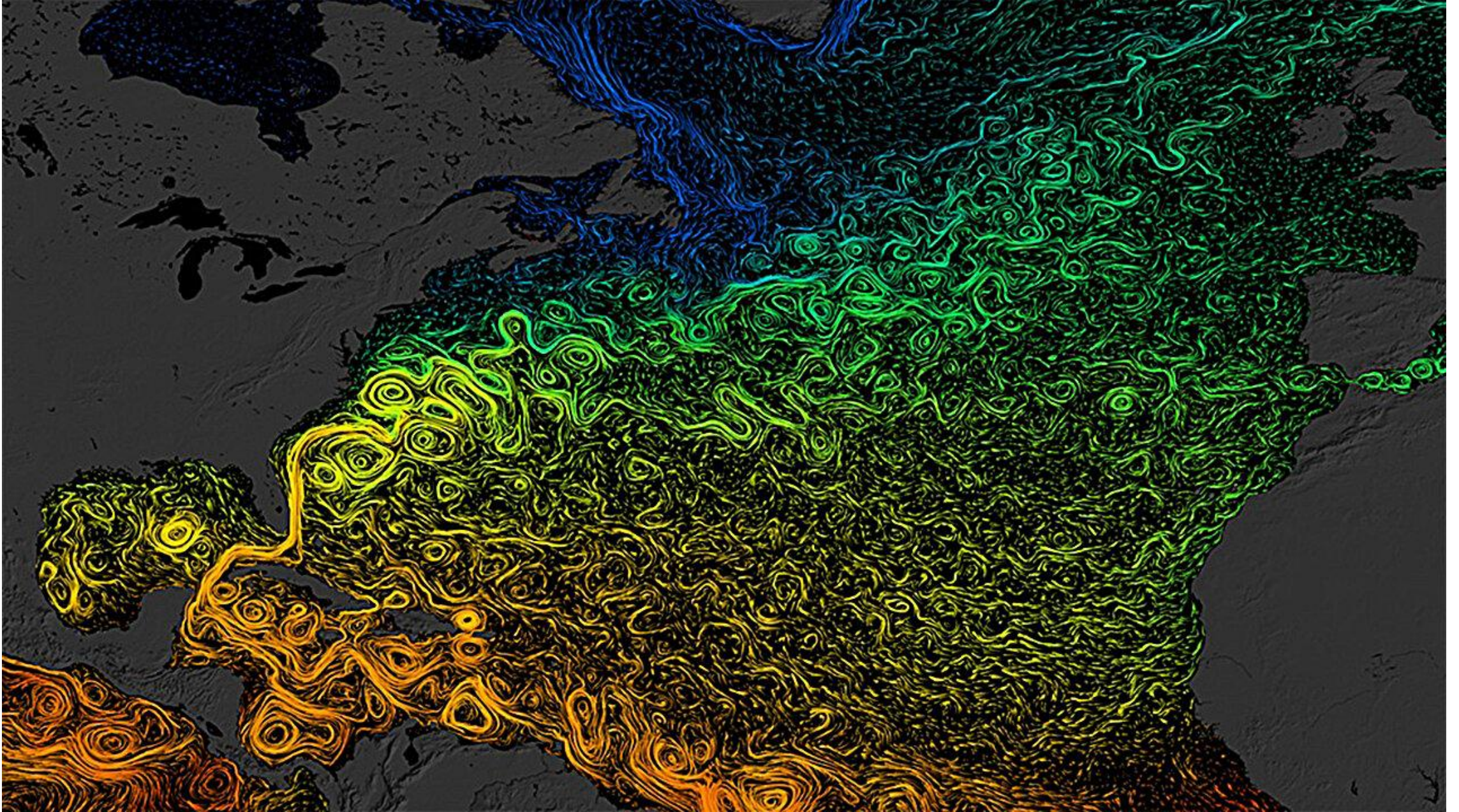
How Atlantic ocean circulation works



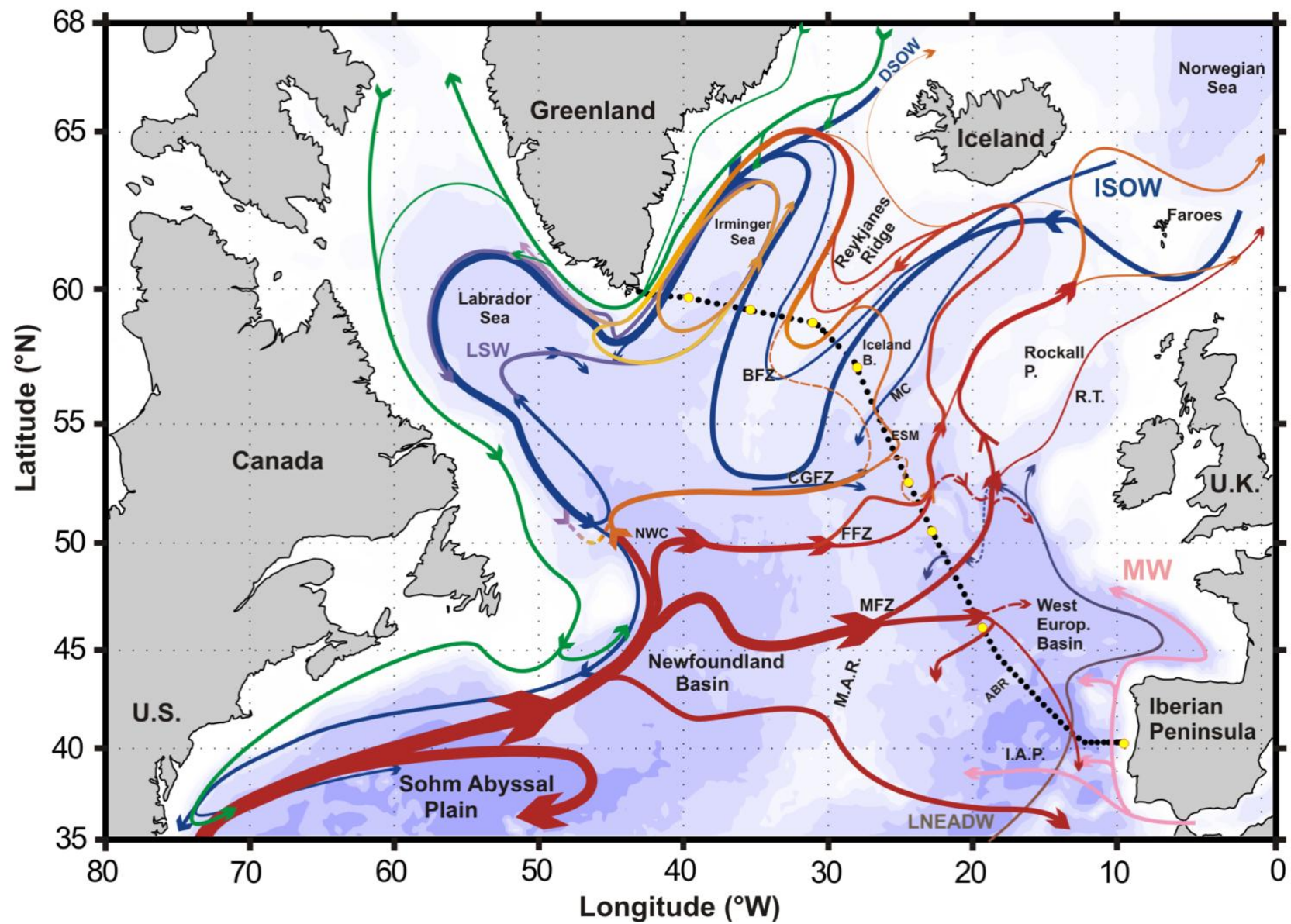
Simplified representation of Amoc

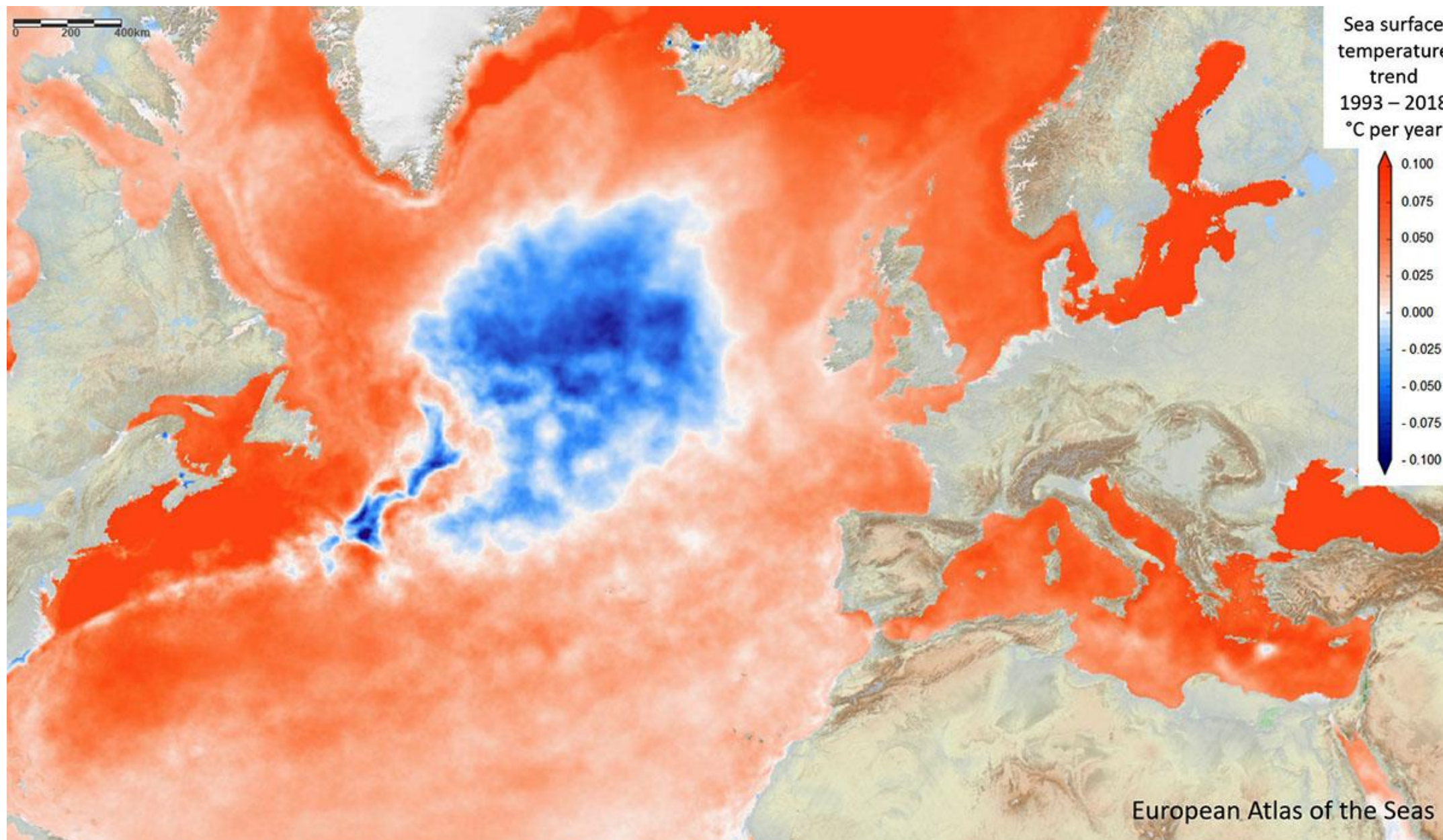
Source: Nasa

BBC

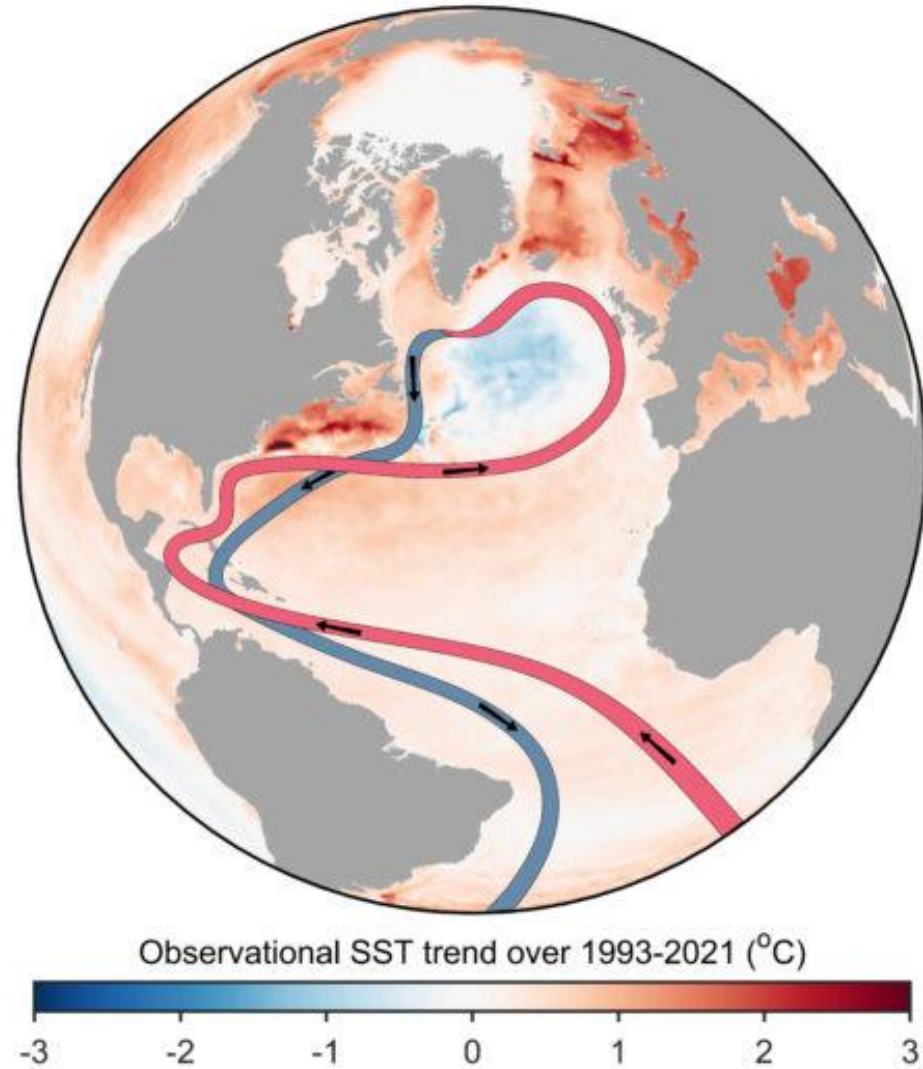


- Surface flows and gyres in the N Atlantic ..NASA



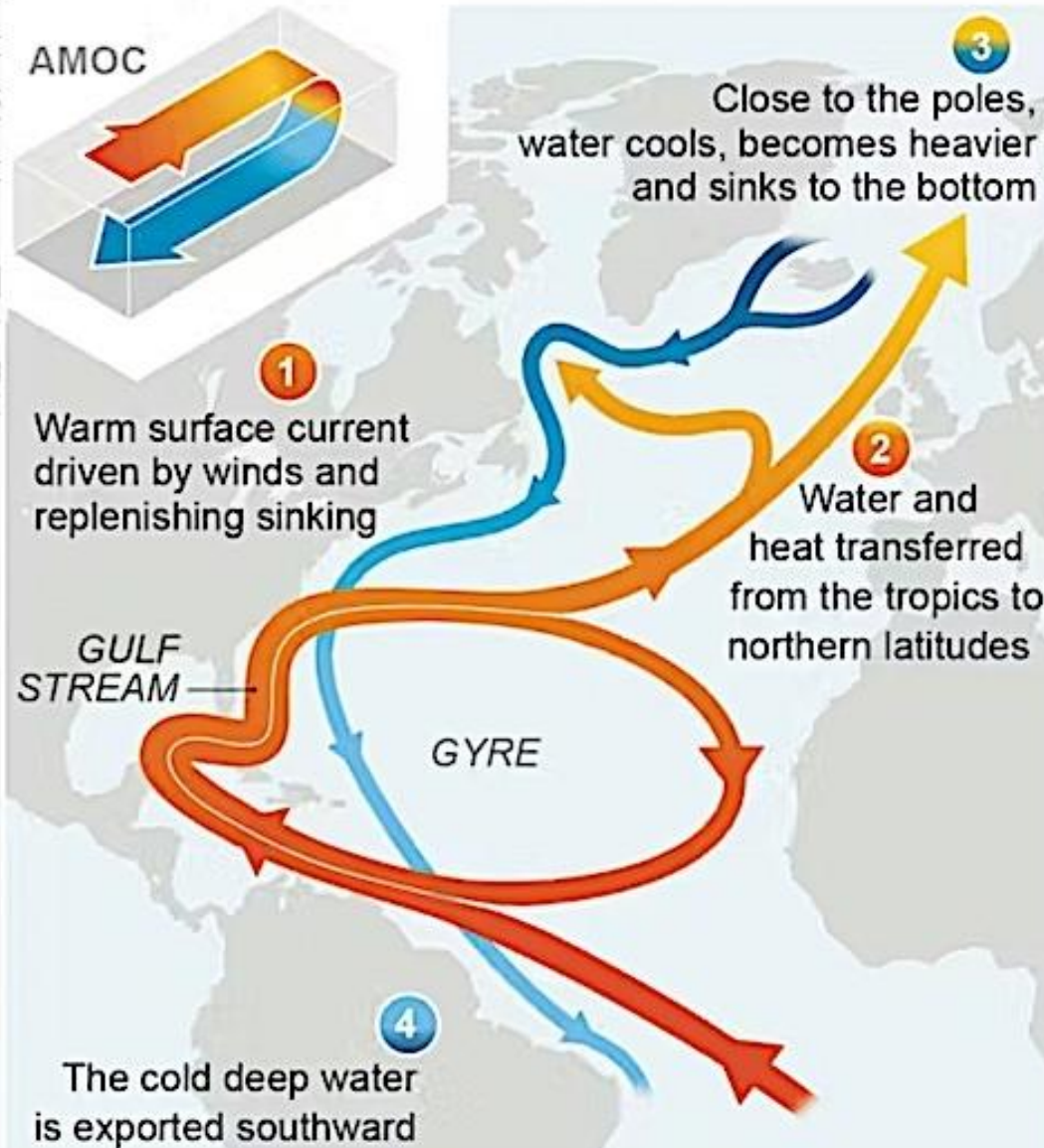


The White Blob



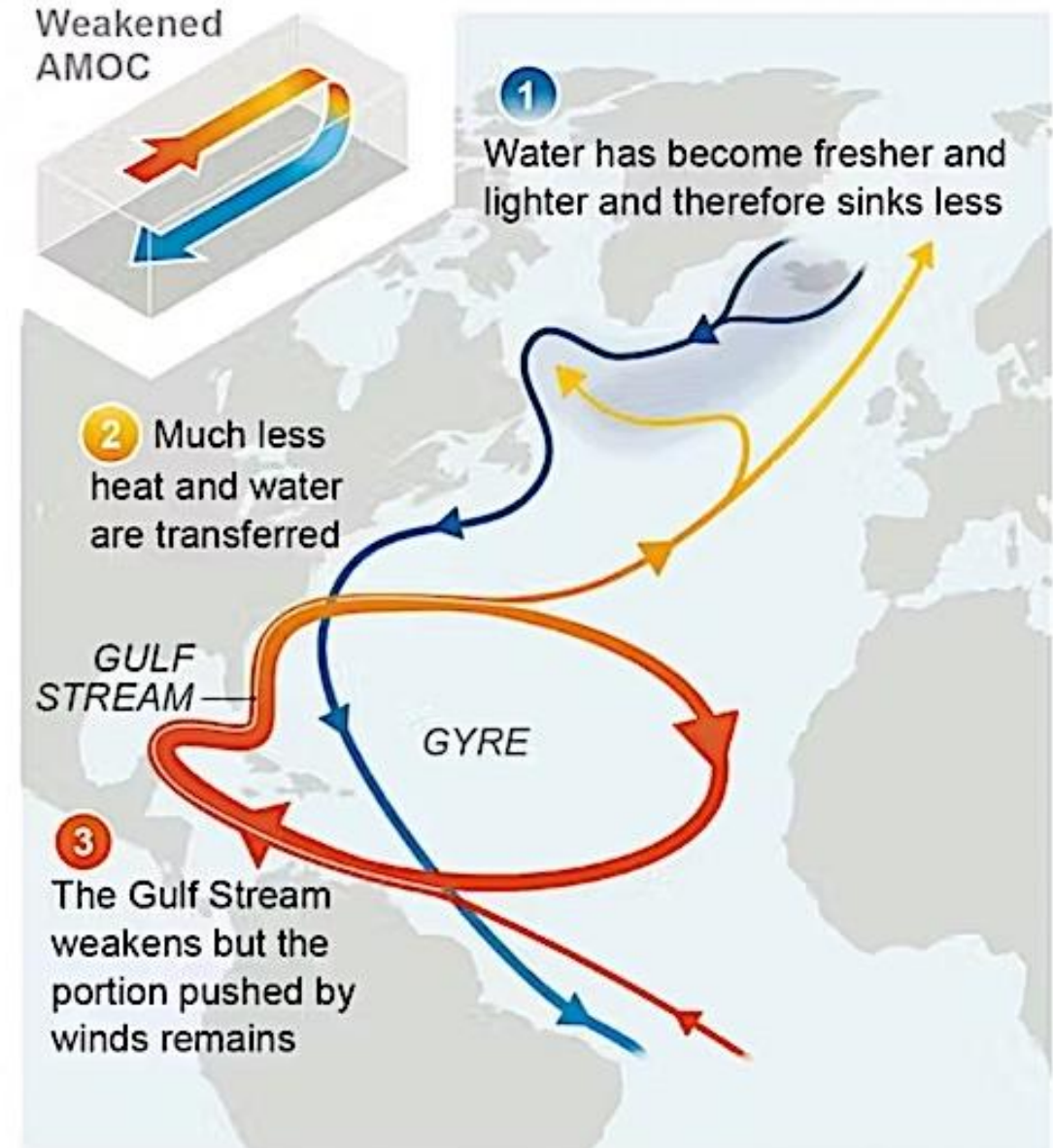
Today

The Gulf Stream is part of both the horizontal, subtropical gyre and the vertical, Atlantic Meridional Overturning Circulation (AMOC)



In a warmer world

Climate change weakens the AMOC, which slows the Gulf Stream down





Shades of Magic

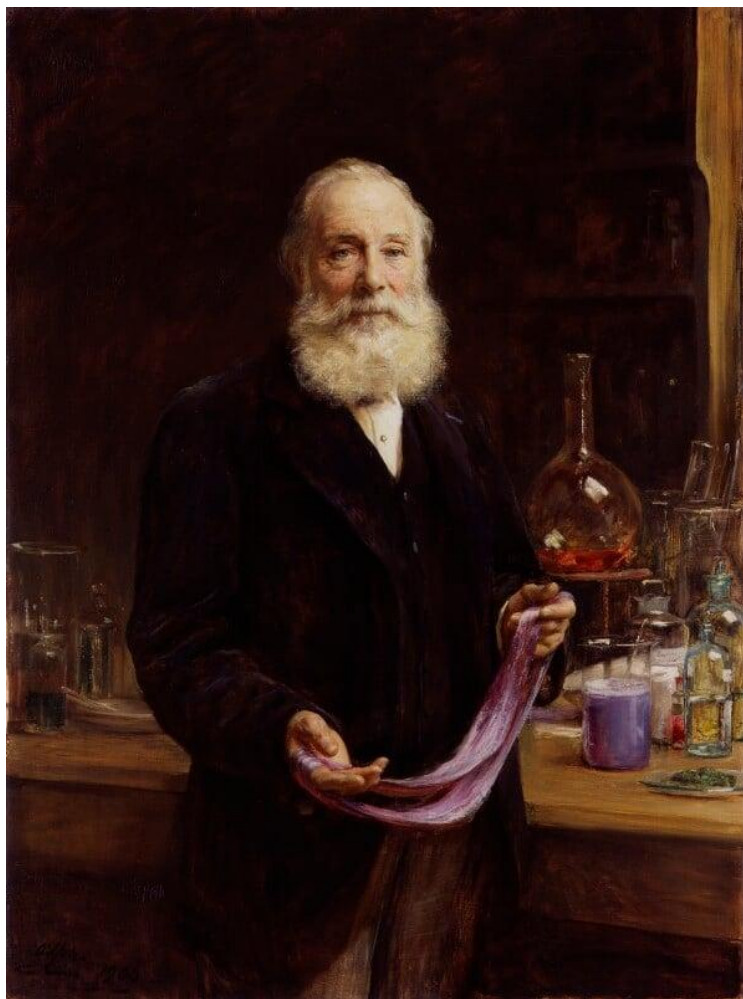
John Burke



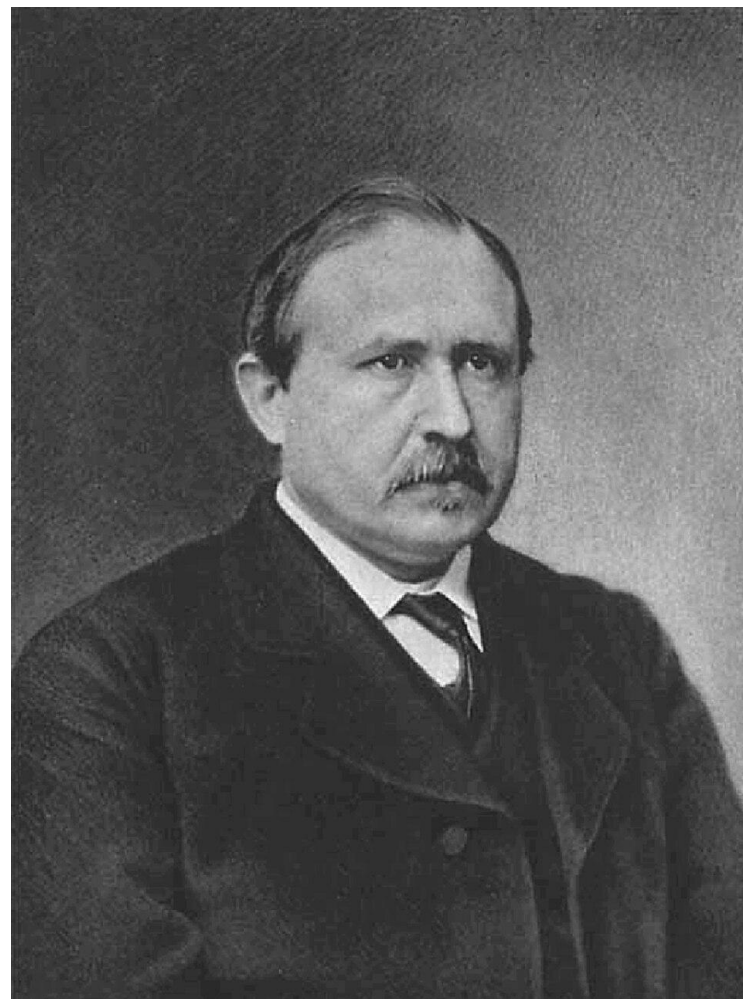
Shades of Magic

Bringing colour to your wardrobe

Diazotisation and coupling



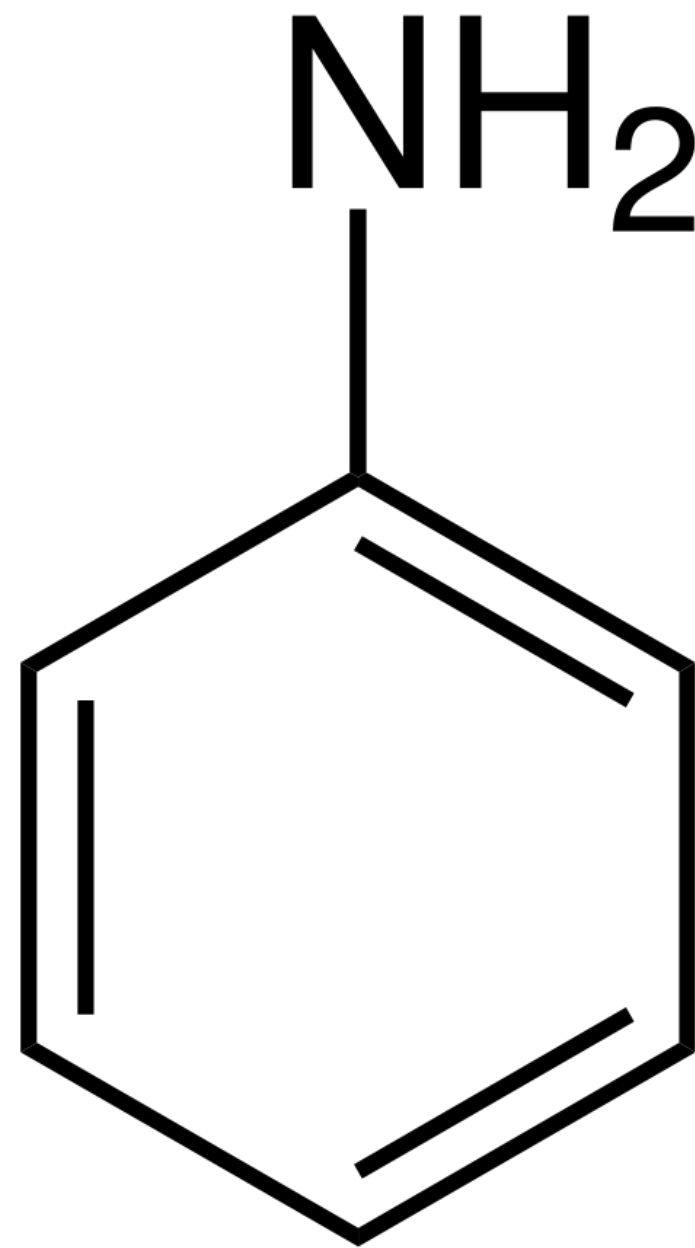
1856 first synthetic dye ...
Henry Perkin ... (quinine)



1858 diazotisation reaction
... Peter Griess

Chromophores

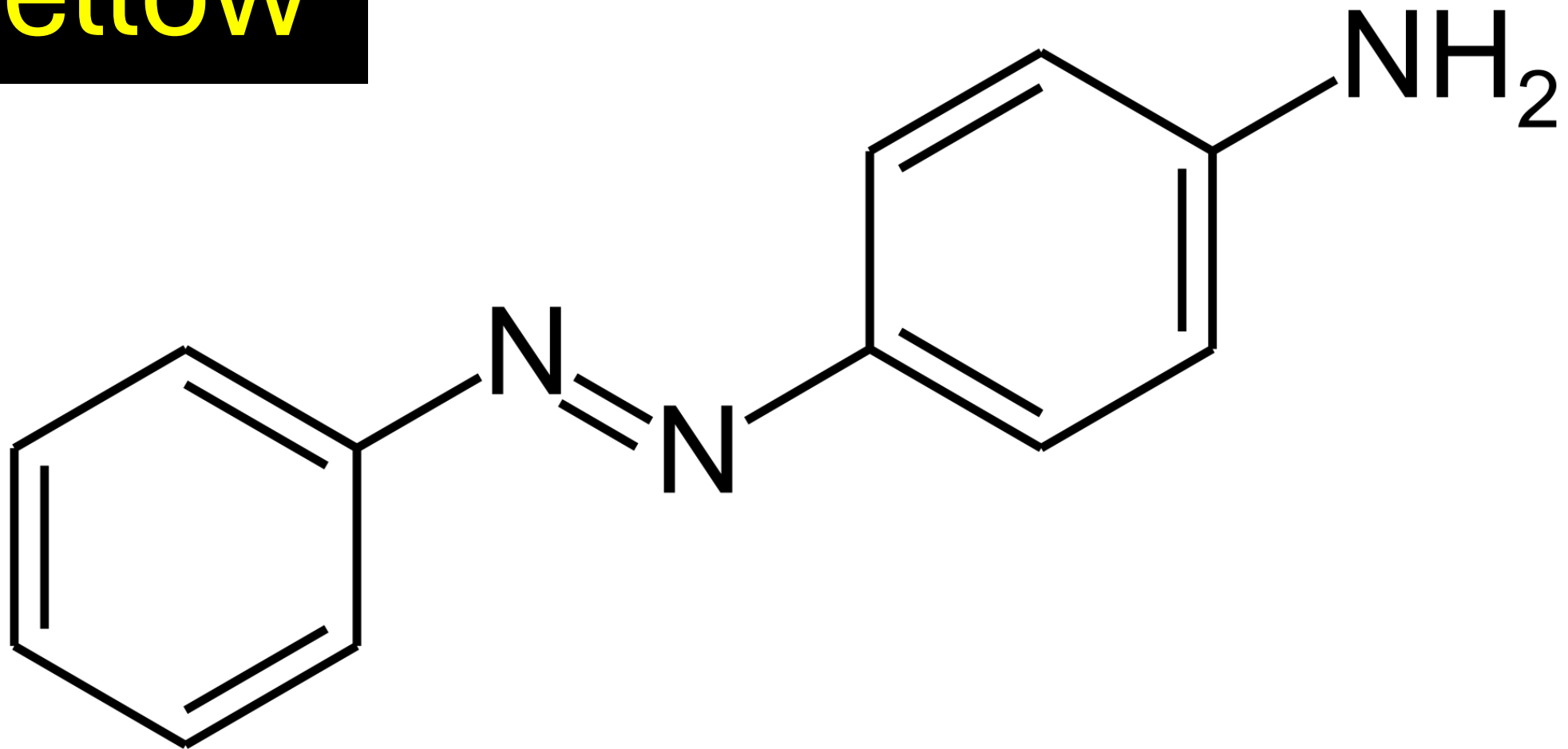
Aniline

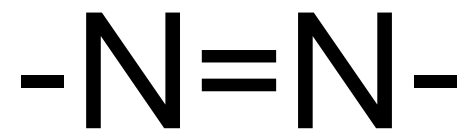


Nitrous acid HNO_2



Aniline Yellow



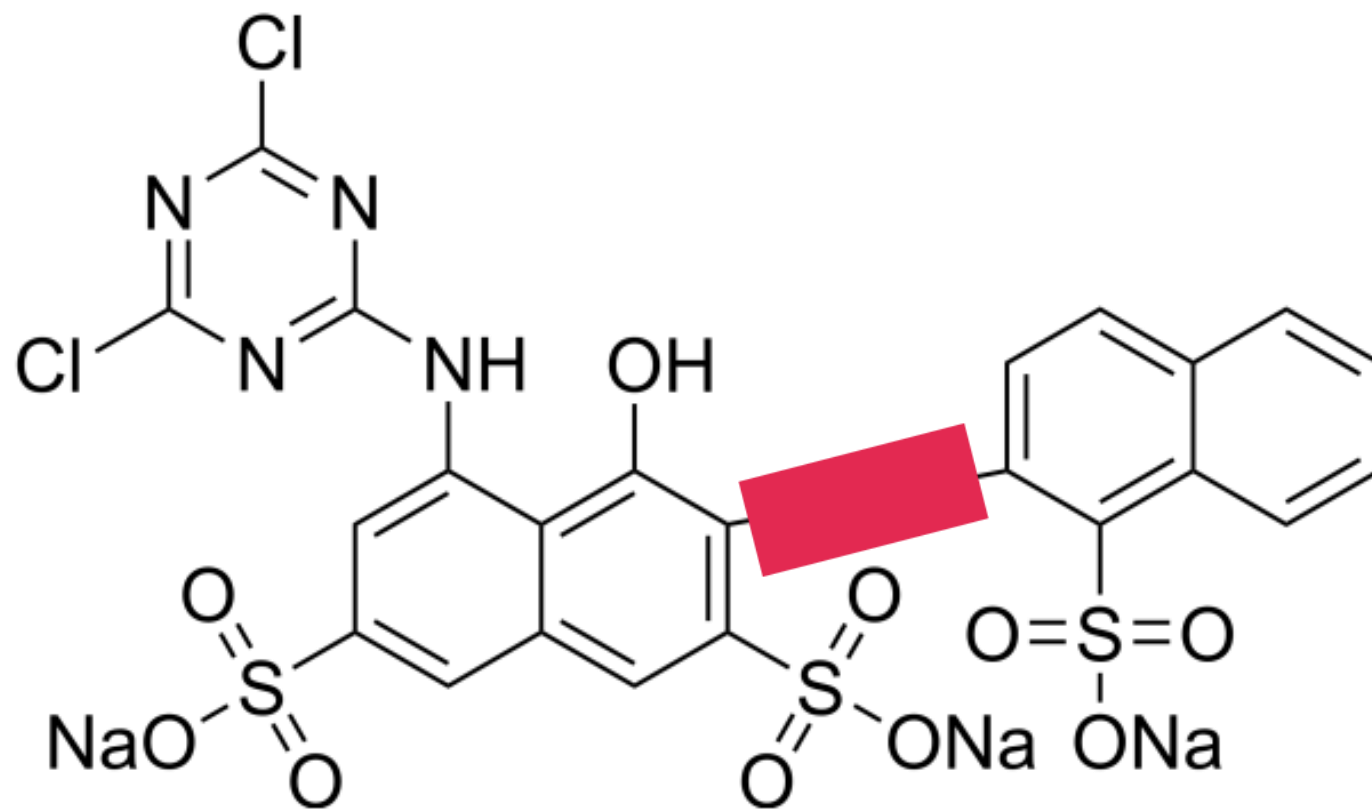


Adding radicals: electron donors,
electron withdrawing, both

Shade changers

Substituent Added	Effect on Electron System	Typical Shade Change
None (azobenzene)	Basic conjugation	Yellow-orange
-OH	Electron donation	Orange
-NH ₂	Stronger donation	Orange-red
-N(CH ₃) ₂	Very strong donation	Red
-NO ₂	Electron withdrawal	Deep orange/red
Donor + acceptor combination	Maximum conjugation and polarisation	Red → Violet → Blue

Procion Red 8b





Acid Lemon MX-8G



Black MX-K



Black MX-Mix



Blackcurrant MX-B



Blue MX-2R
New



Bottle Green MX-3G



Bright Magenta MX-B *New*



Bright Pink MX-B



Bright Turquoise MX-G



Brilliant Emerald MX-G



Brilliant Lime MX-G



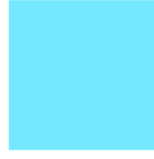
Brilliant Orange MX-2R



Buttercup Yellow MX-GR



Cerise Red MX-5B



Cerulean Blue MX-GN



Charcoal MX-G



Chestnut Brown MX-R



Dark Brown MX-3G



Deep Purple MX-R



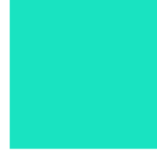
Golden Yellow MX-3R



Indigo Navy MX-2G



Intense Red MX-GN



Jade Development #1



Lemon Yellow MX-4G



Magenta Red MX-8B



Mid Navy MX-R



Mustard MX-R



Navy MX-3R



Navy Blue MX-4GD



Olive Green MX-G



Orange Scarlet MX-G



Raspberry MX-B



Red Brown MX-5BR



Royal Blue MX-R



Rust Brown MX-2R



Sage Green MX-B



Scarlet Red MX-3G



Slate Blue MX-2R



Tan Brown MX-GRN

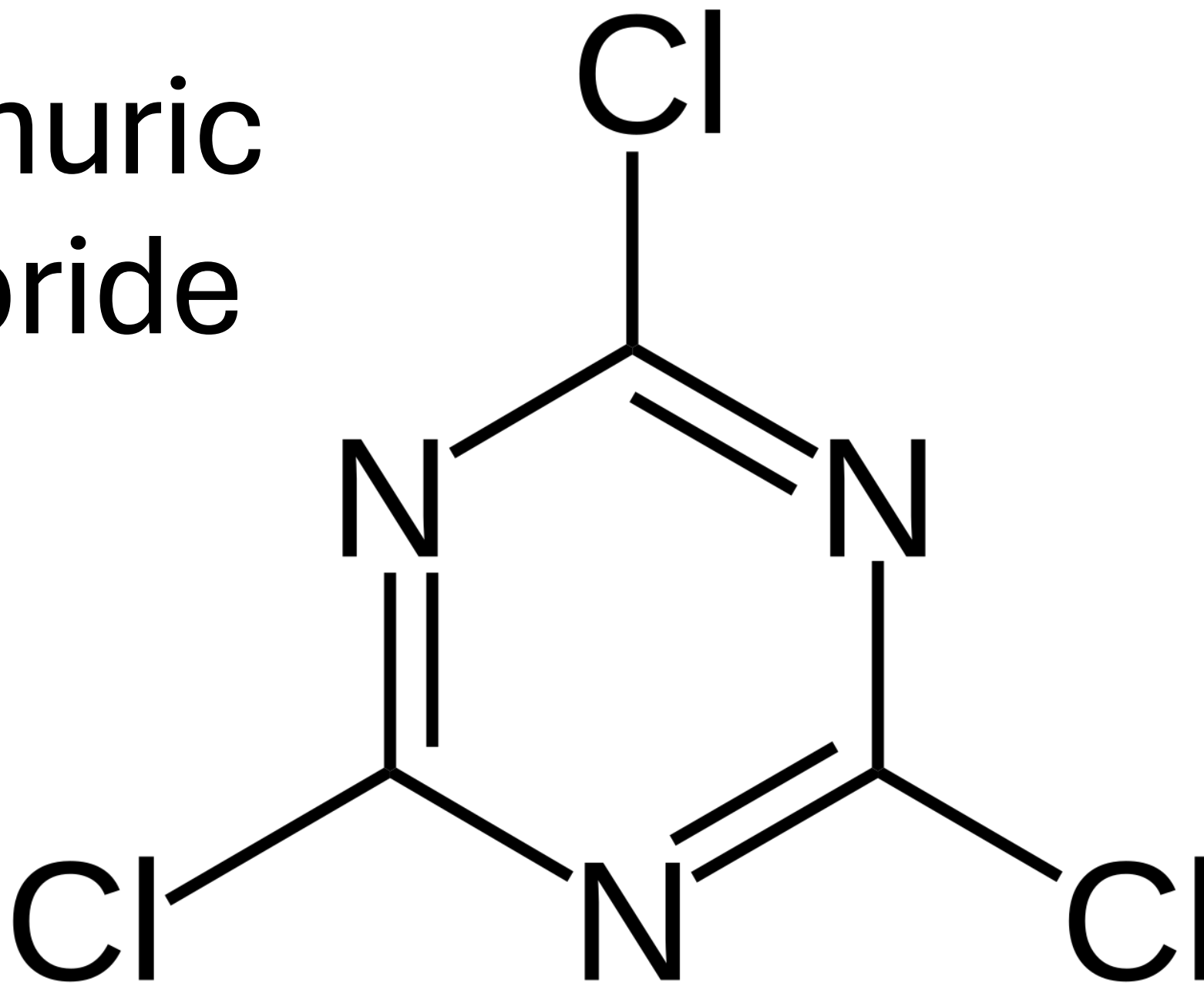


Terracotta MX-N



Violet Navy MX-4RD

Cyanuric
chloride



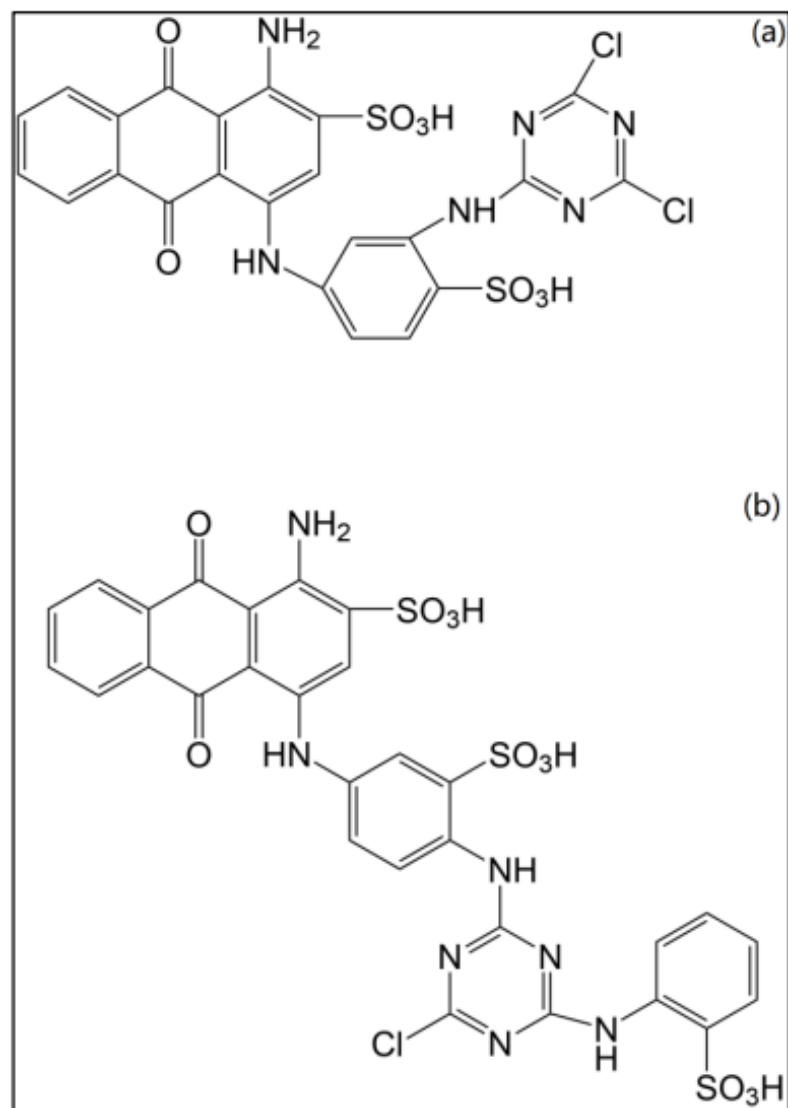


Figure S1. Structures of reactive blue 4 (a) and cibacron blue 3GA (b)



Cotton, rayon, wool, silk etc.

