

# PLASTIC POLLUTION IN EARTH'S OCEANS

An overview of how  
**human** and **physical**  
factors create a global  
pollution problem

# PLASTIC WASTE

- Plastics were created in the late 1800s and early 1900s
- Their use has accelerated over time
- More plastic was produced in the 'noughties' than during the whole 20<sup>th</sup> Century

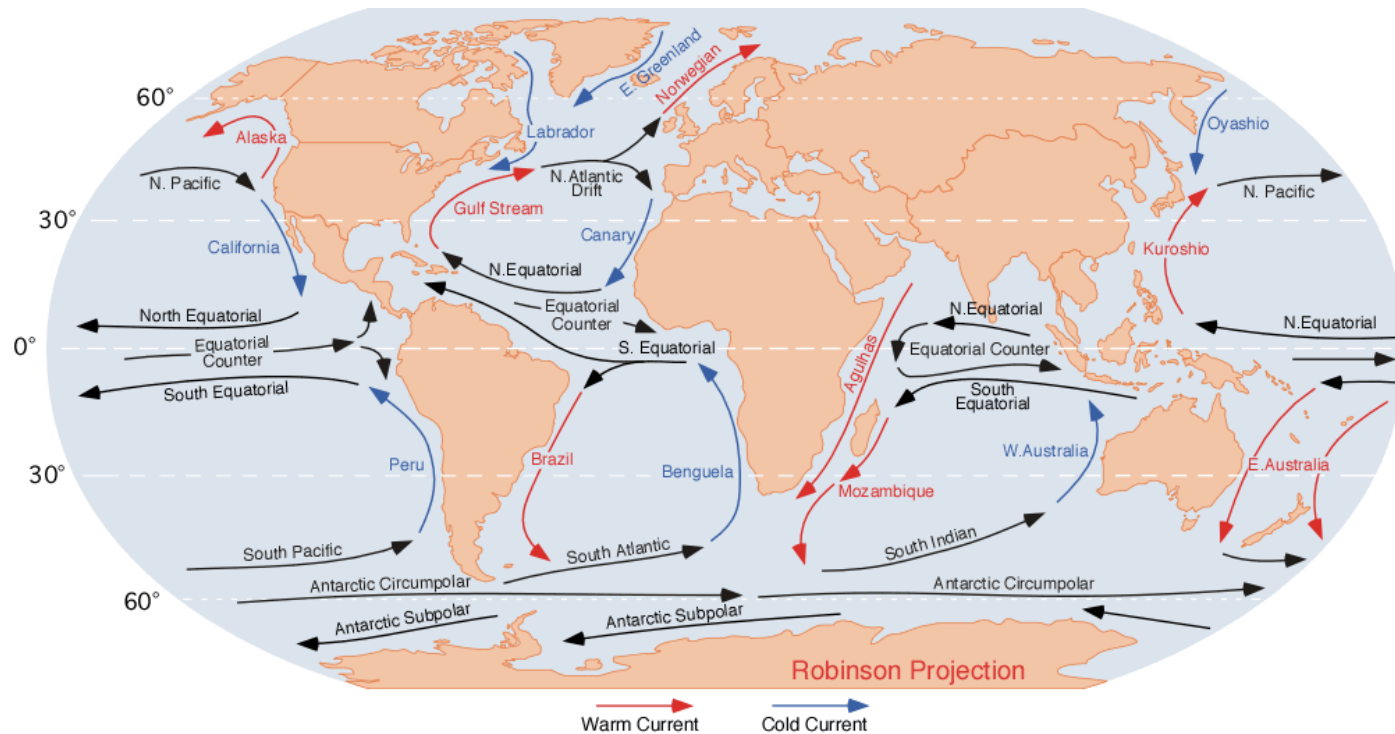


# HUMAN FACTORS

- **Low-cost manufacturing in newly industrialising countries** adds to the perception of some plastic goods being 'throwaway' items
- Un-necessary **packaging** and the growth of **bottled water** consumption



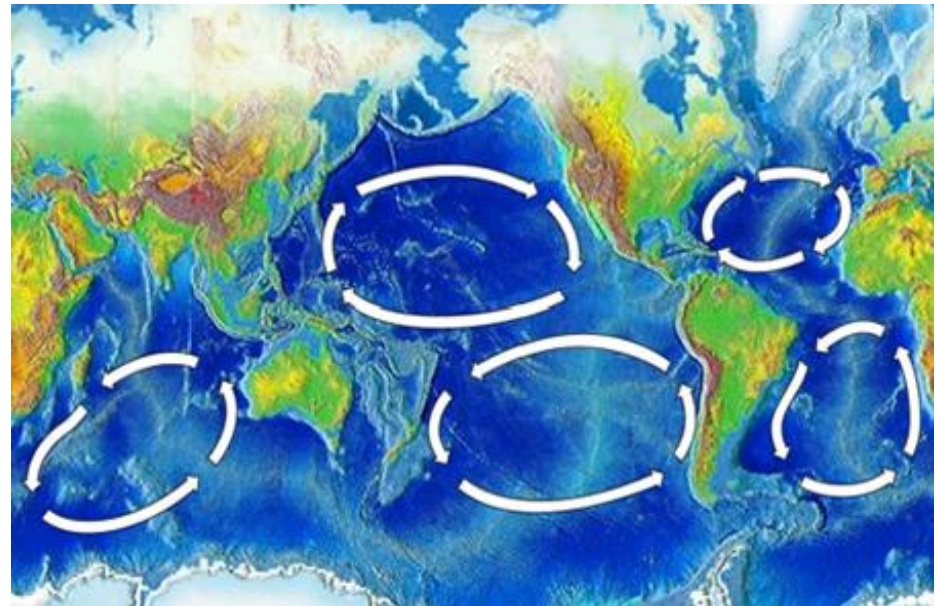
# OCEAN CURRENTS



- The world's oceans are **dynamic** systems
- **Surface** and **deep** flows of warm and cold water

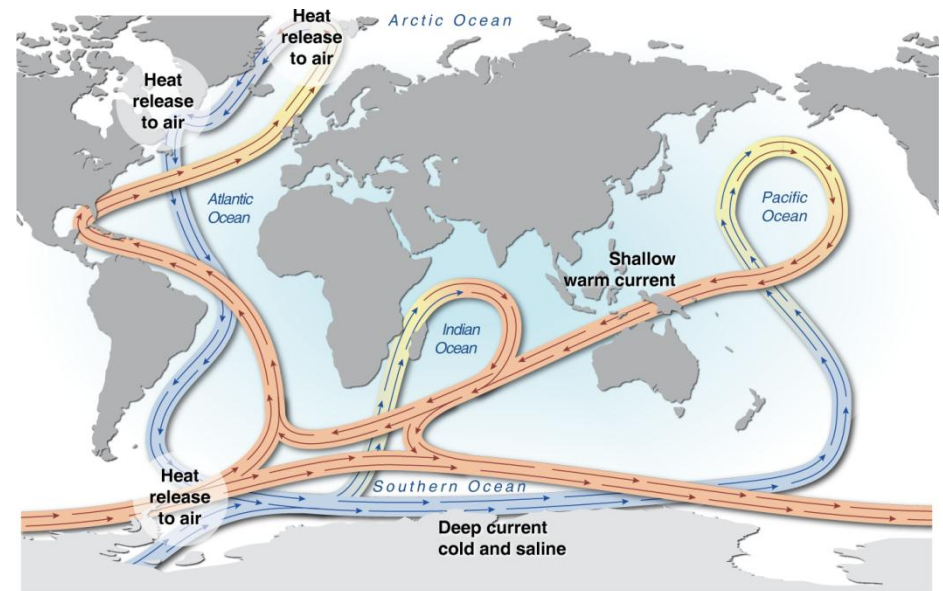
# SURFACE GYRES

- **Gyres** are large-scale circular currents in the major oceans
- They are a product of wind patterns and the **Coriolis force** (a function of Earth's rotation)



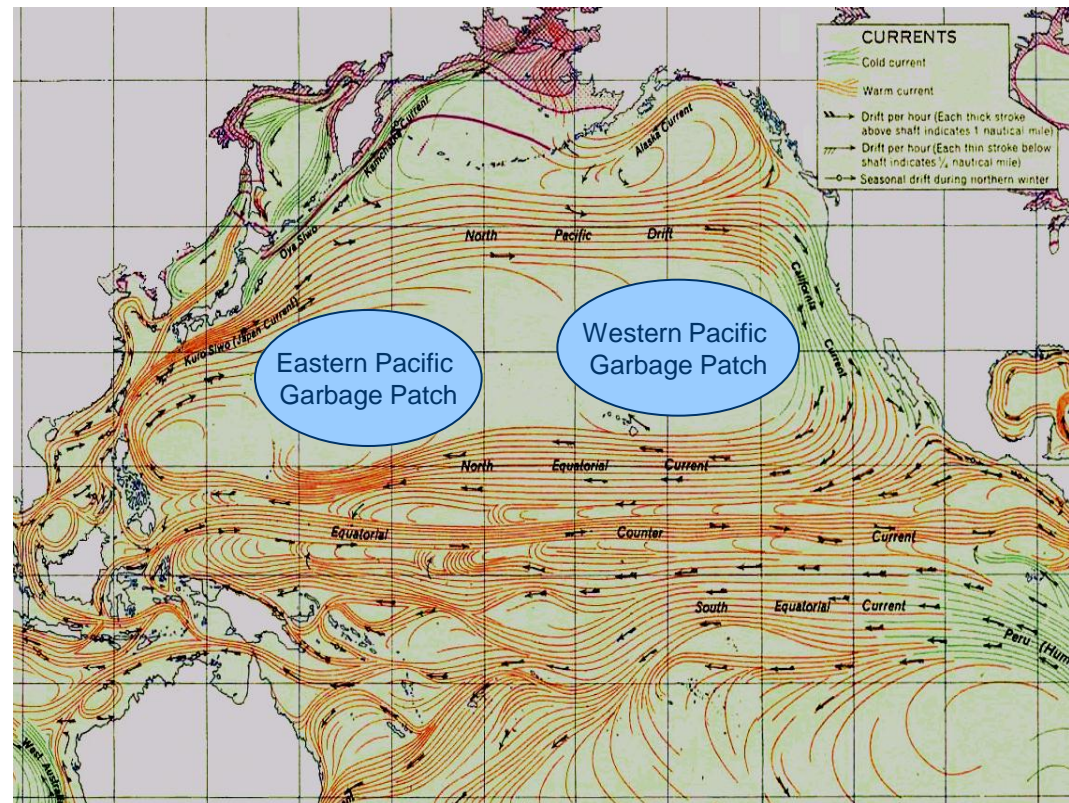
# THE OCEAN CONVEYOR

- Deep ocean currents are driven by changes in water density
- These are linked with variations in water **temperature** and **salinity**
- The main flows are linked to form one global 'motorway' system



# NORTH PACIFIC GARBAGE PATCH

- Two giant pools of 'plastic soup'
- Split into Eastern & Western areas
- Slowly rotating due to the gyres
- Each one is the size of Texas
- One million pieces of floating plastic per square mile



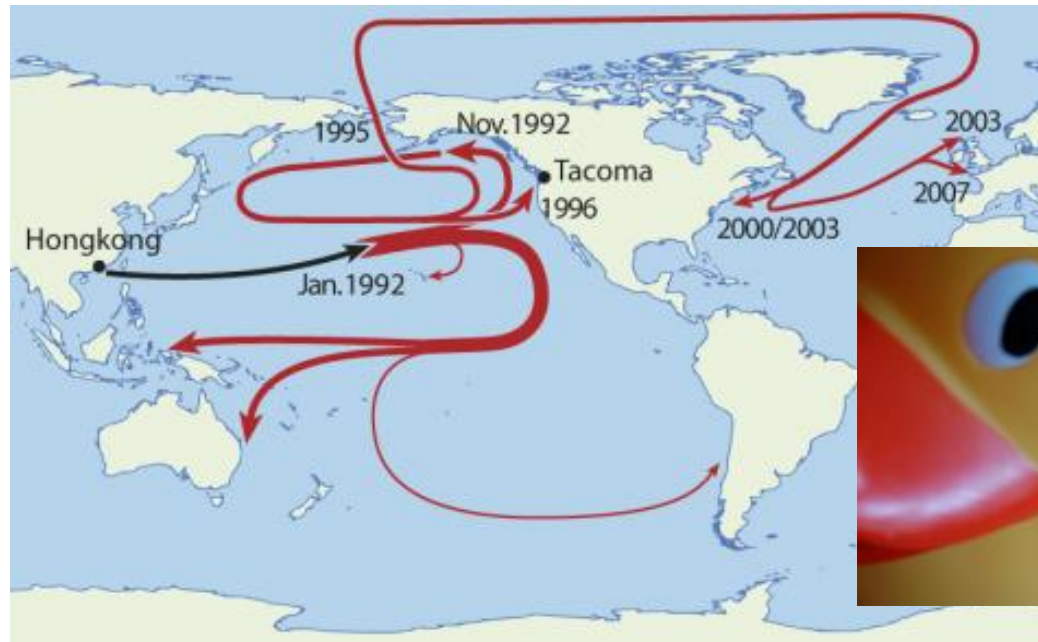
# DESPOILING WILDERNESS

- Plastic waste makes landfall along the shorelines of many **wilderness** regions, far from civilisation
- Pacific Hawaiian islands
- Arctic circle islands e.g. Muffin Island
- Alaskan beaches





# DUCK STORY



- 29,000 rubber ducks washed into Pacific in 1992
- Nearly 20 years later they are still being carried around the world by ocean currents

# PLASTIC POLLUTION

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