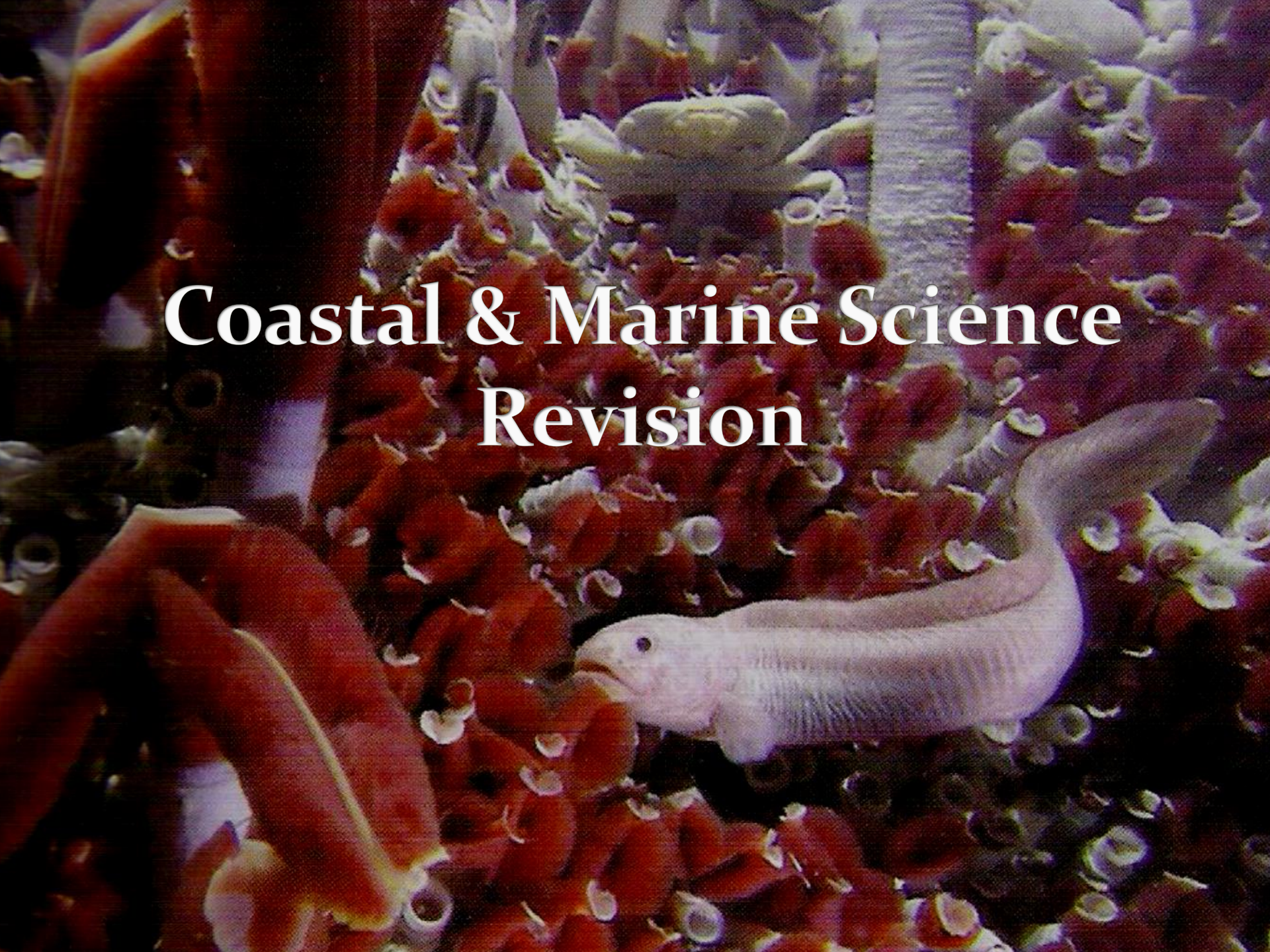




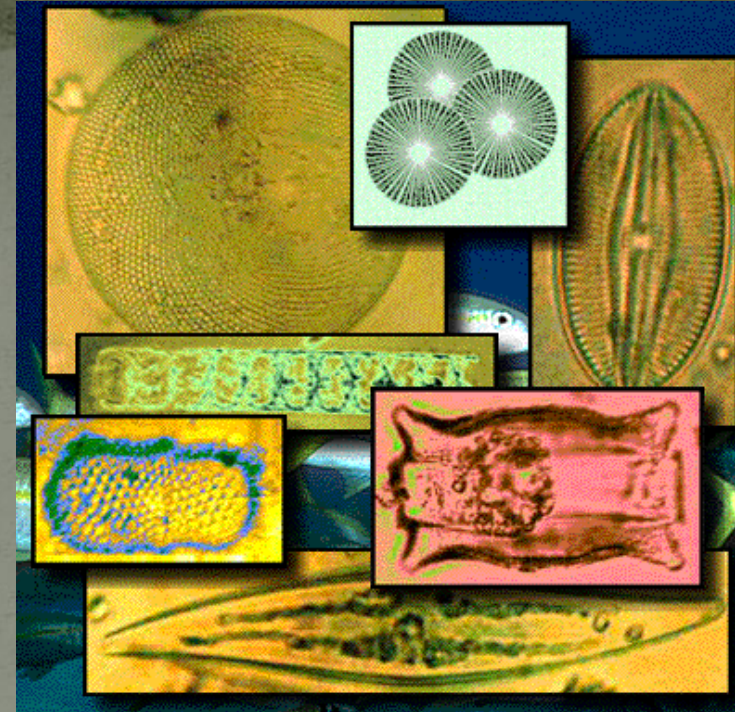
Coastal & Marine Science Revision

Exam Paper

- 2 hours
- 2 from 4: equal marks
- Separate sections - answer one from each!
- Referencing
- Essay structure
- Read the question properly
- Equal time division!

Key Themes

- Physical & Biological Parameters
- Climate Change
- Fishing & Over-harvesting
- Marine pollution
 - Litter
 - Oil Pollution
- Marine policy
- Coastal Management
 - MPAs
 - No-Take Zones



Physical/Chemical/Abiotic

- Classification zones according to depth, sunlight and distance from shore
- Salinity, density, light, pressure, temperature, DO and pH
- Waves, currents, tides and upwellings
- Species adaptations & distribution

Climate Change

- Carbon cycle – carbon flux between terrestrial, oceanic and atmospheric sinks
- Physical & chemical changes as temp rises – circulation and wind patterns, stratification, chemical composition
- Geographical shifts
- Trophic changes
- Productivity
- Deep sea and polar changes
- Sea level rise

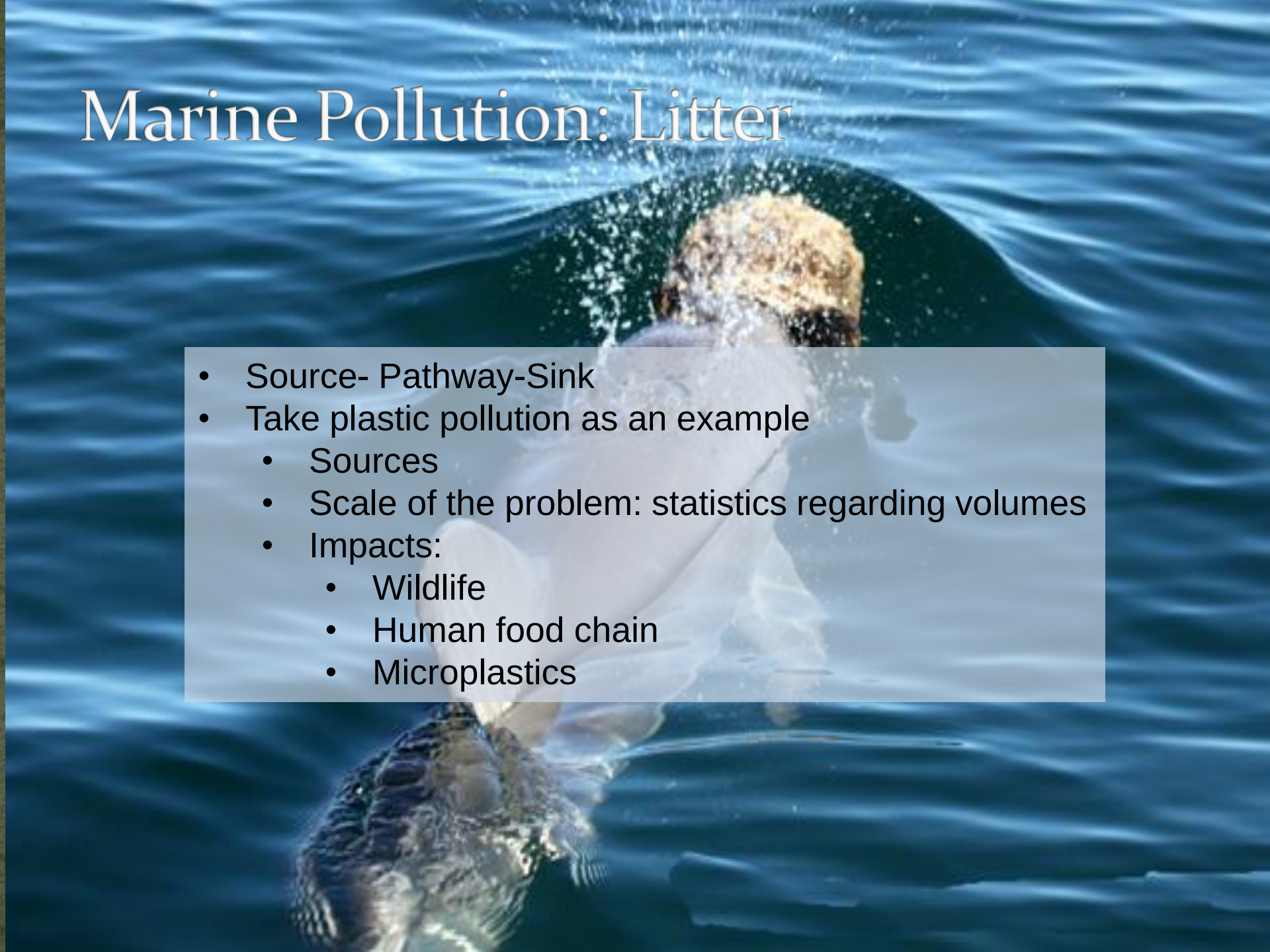
Climate change: Visible impacts

- Is there visible evidence?
- Coral reefs for example:
 - What impacts of storms?
 - What impacts of increased turbidity/sedimentation
 - What impacts of a reduction in pH (Acidity)?
- Current evidence?
- Great Barrier Reef?
- El Nino impacts – are there similarities to be drawn?

Marine Pollution

- Source – pathway-sink
- Litter
 - Main sources (fishing, beach users, municipal landfill/sewers, households)
 - Ecological, economic and aesthetic consequences
- Oil
 - Sea Empress & Deepwater Horizon
 - Economic & Ecological consequences
 - Clean-up strategy
- Alien species – biodiversity loss; economic cost

Marine Pollution: Litter

A photograph of a whale breaching the surface of the ocean. The whale's dark, wet back is visible above the water, and a large, bright yellow piece of foam or plastic is floating on the surface near the whale's head. The water is a deep blue with white foam from the whale's splash.

- Source- Pathway-Sink
- Take plastic pollution as an example
 - Sources
 - Scale of the problem: statistics regarding volumes
 - Impacts:
 - Wildlife
 - Human food chain
 - Microplastics

Marine Policy

- Marine Protected Areas
 - European Marine Sites (SACs and SPAs)
 - Marine Conservation Zones (nationally)
- Devolved nations – different stages
- No-Take Zones – a method of protection
 - Restricted access or zoning
 - Temporary or permanent – compliance
- Marine Strategy Framework Directive – umbrella
- UK Marine & Coastal Access Act – helps deliver Directive
- MSP – conflict management – Lyme Bay

Galánish Moon Skim
Sunrise on Turso
12:18 a.m. 12 06 06
Copyright Gerald Ponting

Past Papers

1. Marine Protected Areas (MPAs) have been heralded as the way forward in tackling marine degradation and over harvesting. Using examples, and discussing this statement:
 - a. Define the potential role of MPAs for habitat management purposes. (30 marks)
 - b. Using the example of Lundy Island, assess the merits and demerits of using closed area management as an effective measure. (20 marks)
2. The 2009 “End of the Line” documentary highlighted the plight of the world’s fisheries. Global stocks are depleting and while legislation and quotas exist, the problem of illegal, unregulated and unreported catches persists.
 - a. Discuss this statement, commenting on what effect pirate fishing and flags of convenience have on global stocks. (25 marks)
 - b. Evaluate the various fisheries conservation methods employed globally in an attempt to ameliorate the impacts of over -harvesting. (25 marks)