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Ecology

Key threats to freshwater species

- Droughts
- Exploitation
- Desertification
- Dams
- Climate change (CO₂)
- Flooding
- Fungersid's
- Keystone decline
- Pollution
- Decrease in water levels
- isolation
- Sewage waste
- Disturbance in food chain
- Decline in food resources
- Decrease in algae growth
- Alien species/invasive species
- Over consumption
- Agricultural pollution
- Development
- Disease/pesersides
- Litter/dump/waste
- Prey species decline

Atlantic salmon

- Live 1-2 years in freshwater before migrating to the ocean
- Smell of parent stream imprinted
- Enter rivers in May-July
- Adults live in ocean 3-6 years

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Aquaculture/ fish farming

disadvantages

Wiping out millions of salmon before reaching the ocean

Threatens:

Tourism

Fishing

Fish caught around salmon farms have problems (eye problems)

100's of marine animals die due to the fish farms (marine mammals)

- Diseases/parasites
- Changes in habitat – dead zones
- Escaped ones – compete – genetically modified
- Excess food
- Welfare
- Antibiotics affecting water/fish/humans
- Keystone species – impact
- resources (food from wild)
- Migration routes (orcas)
- Population dynamics
- Concentrated waste

Advantages

- Promoting good practice
- Monitoring levels
- Control levels/demands
- 3D space
- Future?
- By catch decrease
- Water consumption decrease

Long term

Cost

Target species

Guideline/certification

Technology

Intensive – less land used

Water health

- 8.2% of the UK is covered, in Europe only France and Iceland have more

Roles:

3 key roles of the 1949 national parks and access to the countryside act:

1. Conserve and enhance the natural beauty, wildlife and cultural heritage
2. Promote opportunities for the understanding and enjoyment of the special qualities of national parks by the public
3. Seek to foster the economic and social well being of local communities within the national park

Now moving towards sustainable management of the land

Tourism

Environment and ecological

How to manage these issues:

- Appropriate restrictions – speed limits lots
- Legislation – protected species
- Public transport
- Awareness – eg countryside code
- Sustainable local produce – reduce food miles
- Replanting
- Signage away from certain areas
- Zones for certain activities

SSSI

- 4000 in England
- 26000 separate owners + land managers

~under the wildlife and countryside act 1981 the government has a duty to notify as an SSSI any land which in its opinion is of special interest by reason of any of its flora, fauna, geological or physiological features~

Two categories

- Biological
- Geological

SSSIs are legally protected and are naturally important for wildlife.
Species such as:

- Great crested newts
- Water voles
- Dormice
- Stag beetles
- Sand lizard

NNR.

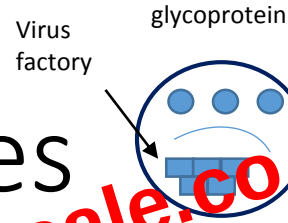
- Created in Lundy first
- Created under the wildlife and countryside act 1981
- 3 UK:
 - Lundy marine nature reserve at Lundy island
 - Skomer
 - Stanford lough

MCZ

- Specific marine life
- Lundy – managed by the national trust no take zone
- 27 sites across the UK
- The marine act 2009
 - Seals
 - Puffins
 - Lundy pony
 - Sea fans and coral

Bacteria

Viruses



Fungi

- Very small single cell forms that can reproduce quickly
- They are found throughout nature and can be beneficial

- A virus is an infectious agent too small to see
- It replicates or makes copies of itself inside the bodies cells that causes disease

Cell will burst due to the virus factory

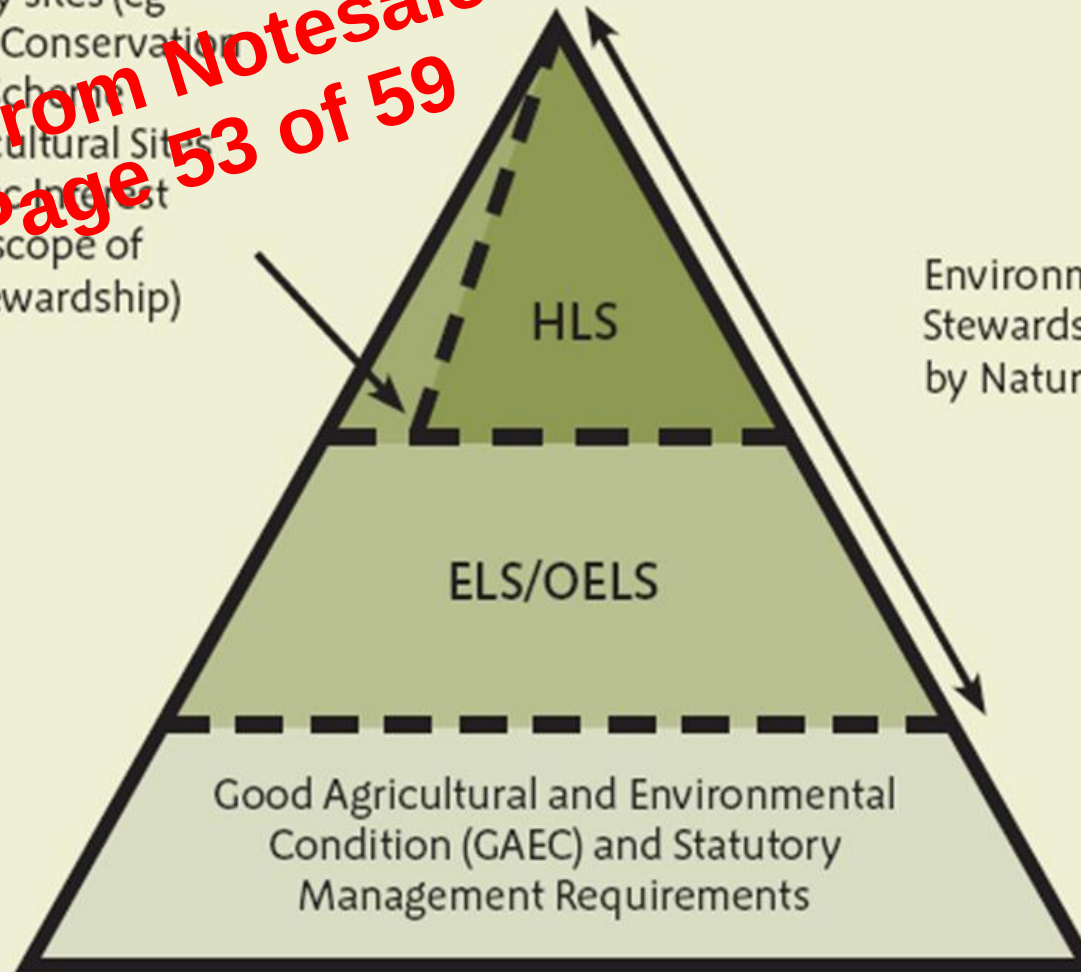
- A group of multi cellular organisms that feed on once living organisms or act as parasites as living organisms
- Examples include: moulds, mildews, mushrooms and yeast
- Ringworm – spore based
- Direct contact transmission – physical contact
- Indirect contact transmission – no direct contact

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Environmental Stewardship in the wider context

Grants to statutory sites (eg Natural England's Conservation & Enhancement Scheme (CES) on non-Agricultural Sites of Special Scientific Interest (SSSI) outside the scope of Environmental Stewardship)

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Environmental Stewardship managed by Natural England

Single Payment Scheme managed by Defra and the Rural Payments Agency