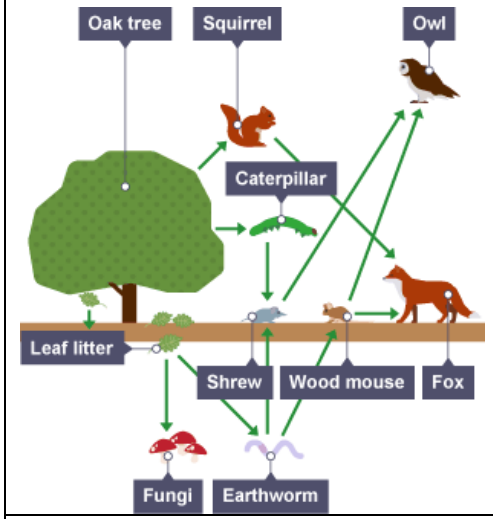
Paper One: Case Study and Example Summary (2020 onwards)

Main Case Studies:		
Tropical Rainforests: **Causes and (SEE) Impacts of Deforestation** Malaysia		**Sustainability:** Selective logging, Ecotourism, International Hardwood Agreements, Afforestation, Debt reduction.
Causes:	Commercial Farming	1970's government gave 10yr tax incentives to Palm Oil Plantations – world's largest producer of Palm Oil (85% of world) due to forest clearance.
	Logging	World's largest exporter of tropical hardwood e.g. Mahogany since 1980s, due to 'clear felling', then 'selective logging' more recently.
	Road building	To access mining areas, logging areas, new settlements, HEP dams
	Mineral extraction	Drilling for oil and gas on Borneo. Mining for tin in Peninsular Malaysia.
	Energy	HEP at the Bakun Dam supplies energy, but 700km^2 of land was flooded to create the reservoir behind it.
	Settlement / Population growth	'Transmigration government policy' encouraged 15,000ha of forest to be cleared for settlers who had moved out of cities between 1956 and the 1980s.
Impacts: 66% already destroyed!	On economic development	+ HEP will provide cheap renewable energy e.g. Bakun Dam + Companies e.g. logging, farming pay tax to the government so there is more money to improve infrastructure. + 1 in 7 jobs are in farming – agriculture provides work and raw materials - The number of ecotourists could fall if forests/wildlife are removed (5% GDP) - Fires could burn out of control and destroy forest
	Soil erosion	Loss of plants and their roots means soil is exposed to rain – it is washed away or nutrients are leached.

	Climate change	Forest absorbs CO_2, releases O_2. Less trees means less CO_2 absorbed = more greenhouse gas -> climate change.
	Habitat loss	Over 600 species live in the 'Main Range' and many are still undiscovered, but Malaysia has the fastest rate of deforestation on Earth. Orang-utans are threatened (1990-2004 an habitat area 2x size of Wales for these was lost)

Ecosystems:

Example of a **UK small-scale ecosystem**: Temperate Deciduous Woodland Redisher Woods, Ramsbottom, NW Eng.



Examples of species in the food web:
Producer: Oak tree (has leaves and acorns)
Primary consumer: Squirrel or Caterpillar
Secondary Consumer: Fox/Owl
Decomposer: Earthworm, fungi.

Nutrients are cycled between the 3 stores: Biomass (living things), litter (dead things) and the soil.
Transfers:
Soil →**Plant uptake by roots** -→ Biomass -→ **Littering (dead/excreted material falls to floor)** -→ litter -→**Decomposition (decomposers feed on decaying material and return nutrients to soil)** -→ soil

Cold Environments: The (SEE) opportunities and challenges of life in Svalbard

Opportunities	Mineral Extraction Energy development Fishing Tourism	Over 300 employed in coal mining – number one economic activity Longyearbyen power station is Norway's only coal powered station Barents Sea is some of the richest fishing waters - over 150 species e.g. cod In 2011 70,000 people visited Longyearbyen, 30,000 of which were cruise passengers. Tourism provides around 300 jobs
Challenges	Extreme temperatures	Winter below -30^{o}C – frostbite danger / hypothermia

	Inaccessibility Construction Infrastructure	Remote island with 1 airport (Longyearbyen), mostly snowmobiles for travel. Work can be done in the brief summer period (no daylight and too cold in winter) Permafrost is unstable when it melts so you have to protect it from melting. Dirt or gravel roads are raised up to protect permafrost – only 50km of road Overground heated water and sewage pipes (to prevent thaw/can't dig into soils)	
Threats	1. Oil spills e.g. In Alaska e.g. Exxon Valdez oil spill 1989 2. Off road vehicle damage from tourist 4x4s e.g. Alaska – takes 10yrs for permafrost to recover. 3. Tourism affecting wildlife e.g. Antarctica. Breeding grounds for Penguins threatened by over 20000 cruise visitors a year. Could crush eggs on beaches/scare the animals.	**Management strategies** 1. Technological solutions 2. Conservation 3. International Agreements	1. Trans-Alaskan Pipeline 1974. Pumps oil from Prudhoe Bay (in frozen north) to Valdez (port in South). Raised pipeline to avoid disrupting Caribou migration and melting permafrost. Reduces threat of oil spills. 2. Western Arctic Reserve protects 9m hectares of wilderness e.g. polar bears, caribou. Reduces threat from tourism. 3. Antarctic Treaty – countries have agreed not to build permanent structures and strict pollution controls. Reduces threat of oil extraction (banned) in Antarctica IAATO is a tourist organisation that has rules like stay 5m from penguins so that their breeding and feeding is not interfered with.
<u>Named Examples:</u>			
<u>Tectonic Hazards</u>: EARTHQUAKES – learn a HIC and LIC example			
<u>HIC Earthquake:</u> Christchurch	Primary effects	181 died 2000 injured Damage to roads, bridges and older buildings e.g. Christchurch cathedral spire	

Earthquake, New Zealand 2011	Secondary effects	Over half of deaths occurred in the 6-storey Canterbury Television (CTV) building when it collapsed and caught fire. The number of guests to hotels fell by 75% in the months after the earthquake Christchurch could no longer host Rugby world cup matches so lost tourist income Liquefaction- when the ground shakes it causes water (and often mud/dirt) to rise to the surface, making land unstable
	Immediate Responses	The NZ Urban search and rescue team within a couple of hours used search dogs/heat-seeking technology to rescue trapped people. 300 Australian police were flown in and they provided security cordons, organised evacuations, supported search and rescue. International aid was provided in the form of money (around NZ$ 6-7 million dollars) and aid workers Chemical toilets were provided for 30,000 residents
	Long Term Responses	Water and sewage works were restored for all residents by August. The Red Cross Provided grants to families with children under the age of 5 who were living in significantly damaged homes Houses cleared of silt from liquefaction by August, 80% of roads / 50% of footpaths were repaired by then too. NZ$ 898 million dollars paid out in insurance for building damage claims
LIC Earthquake: Haiti Earthquake 2010	Primary effects	250,000 died (far more than in NZ, worst disaster of 21st century) $14Bn of damage (most buildings collapsed) 50+ hospitals destroyed
	Secondary effects	1.3m homeless Disease e.g. cholera (no sanitation provided) 1 in 5 people lost their jobs
	Immediate Responses	4.3 million people were provided with food aid People rescued by hand, by survivors (much more basic rescue)
	Long Term Responses	Cash for work programmes to rebuild (as so many were out of work) 600,000 people moved away to countryside areas and never came back

Weather Hazards:	
Example of a **tropical storm** Typhoon Haiyan 2013	
Primary effects	6300 killed – mostly drowning 40,000 homes destroyed (90% of Tacloban city) 30,000 fishing boats destroyed
Secondary effects	600,000 homeless 6 million people lost their source of income (jobs) Shortages of water, food and shelter led to disease like Cholera
Immediate Responses	Over 1200 evacuation centres were set up for the homeless French set up field hospitals for the injured Philippines Red Cross delivered basic food aid e.g. rice, canned food etc.
Long Term Responses	'Cash for work' programmes – people were paid to help rebuild the city of Tacloban Oxfam provided money for new fishing boats More cyclone shelters have been built
Example of a **recent UK extreme weather event** Heavy snowfall and extreme cold Nov-Dec 2010	
Cause	Cold air from Siberia. Coldest winter since 1965. Most snow for over 100 years.
Social Impact	Lots of water pipes froze and burst. 40,000 homes and businesses across N. Ireland were left without water, in some cases for over a week.
Economic Impact	The cold period cost the UK £1.6 billion and caused a 0.5% fall in the UK's GDP.
Environmental Impact	The use of gas and electricity was more than double of a normal December, increasing CO_2 into the atmosphere.
Monitoring	The Met Office first warned about the cold spell in early November.
Planning	Emergency services and local councils organised school closures in advance when it would be too dangerous for travelling.
Protection	Individuals and local authorities (councils) stocked up on salt supplies and gritters which were used to keep roads safe and open in cold weather, reducing accidents.

<u>Coastal UK landscapes</u> Example of a **UK coastline with landforms of erosion and deposition**: The Holderness Coast, NE England	
Erosion Landform	Headland – Flamborough Head (made of resistant chalk) with stacks etc Bay – Bridlington (made of less resistant boulder clay) with a sandy beach
Deposition Landform	Spit – Spurn Point at the Humber Estuary – material moved S by LSD along the coast. Salt marshes.
Example of a **UK coastline where coastal management has been used:** Cleveleys, Fylde Coast, NE England	
Reasons for management	LSD taking sand North due to SW prevailing wind – beach getting narrower (affecting tourism) Flooding risk to 7693 properties – old sea defences inadequate Popular leisure/tourist/shopping destination previously flooded in 1970's.
Management strategy	£20m spent Spanish steps (A new sea wall- Sections of old sea wall replaced), Beach Nourishment (sediment from Fleetwood), Wooden groynes (extended using recycled old sea wall), Flood wall raised by 50cm.
Effects	7,693 properties now protected from the risk of flooding and sea level rise. Groynes and beach nourishment have trapped sediment producing a wider beach at Cleveleys which attracts tourists and reduces wave energy Spanish steps reduce wave energy, so they reduce erosion and reduce the chance of flooding – 50yrs. Seafront/beach has become more accessible due to the design of the Spanish Steps new sea wall.
Conflicts	2005-2010 construction - disruption in terms of beach access in this period. The scheme cost £20m and some locals feel that the facilities of the decaying seaside town itself should have been improved for the locals, not just the seafront for the tourists. The groynes interfere with natural processes of longshore drift which should supply areas further north on the Fylde coast with sediment to create sand dune ecosystems in Fleetwood. Man-made landscape with little natural habitat or natural vegetation, so low biodiversity
<u>Glacial UK landscapes</u> Example of a **UK upland area** with **erosional and depositional glacial features** Snowdonia, Wales	
Corrie (tarn)	Cadair Idris (Llyn Cau)

Arête	Craig Cau
Ribbon lake	Tal-y-lyn

Example of a **UK glaciated area used for tourism** Lake District, England

17 million tourists visit the Lake District every year! Tourists spent £1.2 billion when visiting the lakes in 2015.

Human attractions for tourists	Historic traditional English villages e.g. Grasmere Culture – English literature e.g. Beatrix Potter museum, Wordsworth Museum
Physical attractions for tourists	Ribbon lakes e.g. Windermere – sailing, walking, sightseeing Arêtes for walking e.g. Striding Edge on Hellvellyn for hikers. England's tallest mountain for biking, climbing and hiking – Scafell Pike
'SEE' impacts of tourism	**Management Strategies to reduce impacts**
Social: • 90% of tourists arrive by car—roads are very busy on weekends and bank hols - congestion	• Building bypasses around busy towns e.g. Around Keswick to ease congestion • Car Free 'Carefree' park and ride bus scheme to take people to popular sites
Economic: • The average home in Troutbeck village now costs £300,000 – too much for young locals. • 40 of 105 homes in Troutbeck village are now Second Homes	• New affordable housing built for only locals to buy
Environmental: • Over 87% of walkers use footpaths—they are being eroded by all these people	• Fix the Fells scheme—145 footpaths reinforced with local stone or duckboards • Separate trails for mountain bikers • Footpaths are clearly signposted and maps available for tourist info centres