

### Unit 3 – Global Climate Change and Land Cover Change

Syllabus Dot Point	Resources
<p><b>Overview:</b> the concepts of environment, natural and anthropogenic biomes, land cover change, ecosystem structure and dynamics, biodiversity loss, climate change and sustainability</p>	<p><i>YouTube – Mr Parr Ecosystem Song</i></p>
<p>the identification and classification of land cover changes with reference to global forests, agriculture and urban land cover</p>	<p>Google Earth / Google images  YouTube - <i>How Earth has changed over the last few decades.</i> <i>Google time-lapse 28 years of Earth from space.</i> <i>Global land cover change from 8000Bp to -50Bp</i></p>
<p>the use of remote sensing images, other spatial technologies, and fieldwork to identify and measure the location, nature, rate, extent and consequences of land cover change</p>	<p>Documentary – ‘ Home’</p>
<p>projecting changes in land cover using existing spatial models, incorporating both environmental and socioeconomic variables</p>	
<p>world population growth, growing affluence, advances in technology and their impact on the nature, rate and extent of land cover change and biodiversity loss</p>	<p>YouTube – <i>7 billion National Geographic Magazine</i> <i>Biodiversity loss extinction Rate</i> Documentary – ‘ Home’</p>
<p>processes of land cover change (deforestation, the expansion and intensification of agriculture, rangeland modification, land and soil degradation, irrigation, land drainage and reclamation, and the growth of urban settlement, industry and mining)</p>	<p>Documentary – ‘ Home’</p>
<p>the differences in the process of land cover change between countries due to factors such as government policy, institutional arrangements, land ownership, type of economy, ideology and culture</p>	
<p>the impacts of land cover change on local and regional environments, including changes to the water cycle, soil erosion and degradation, loss of habitat and biodiversity, the degradation of aquatic and marine environments, loss of ecosystem services, changes to regional climates, and urban heat islands.</p>	<p>Documentary – ‘ Home’  Documentary – ‘Racing Extinction’  YouTube – <i>what happens if all the bees die?</i></p>
<p>the implications of anthropogenic biomes to the functioning of the world's ecosystems</p>	<p>YouTube – <i>Food web Crash Course Kids #21.2</i> <i>Wolves changing Rivers!</i></p>
<p>indigenous peoples' land management practices and their impact on land cover over time, including those of Aboriginal and Torres Strait Islander Peoples</p>	<p>YouTube – <i>Monaro farmers use Aboriginal cool-burn fires to recover...</i></p>
<p><b>Depth Study 1: Global Climate Change</b></p>	<p>YouTube – <i>A climate minute – the greenhouse effect</i> <i>Real world monitoring Earth energy budget CERES</i></p>

the key elements of the following natural systems: heat budget (including the greenhouse effect) hydrological cycle, carbon cycle and atmospheric circulation, and the ways in which they interact to influence the Earth's climate Carbon cycle website - <a href="https://www.windows2universe.org/earth/climate/carbon_cycle.html">https://www.windows2universe.org/earth/climate/carbon_cycle.html</a>	<i>The heating song</i> <i>Wind blows song</i> <i>Precipitation Types</i> <i>Crash Course Kids</i> <i>Earth the Biography Oceans</i> <i>NASA keeping up with carbon</i>
the spatial distribution of the world's rainfall and temperature patterns	
one major type of evidence for climate change through geological time	<i>The atmosphere and climate Big History Project</i> <i>Climate change understanding the facts</i>
one major type of evidence for climate change in recent human history	<i>Is Earth warming, climate change lines of Evidence</i>
the causes (natural and anthropogenic) and rate of global climate change	<i>Solar influence climate change</i> <i>7 Wonders of the solar system</i> <i>Food Waste Hungry Beast</i> Carbon footprint calculator
the projected impacts of global climate change	YouTube - Fifth Assessment Report – synthesis report
the effects of climate change on land cover in natural and anthropogenic biomes (vegetation, ice sheets, glaciers, coastal systems and coral reefs, agriculture, urban settlements and industry)	YouTube – Polar Bear state of the Planets Wildlife Climate Change The impacts of climate change on coral The sinking feeling PNG Climate Science what you need to know
the interrelationship between land cover change and climate, including changes to surface reflectivity (albedo) and the process of natural carbon sequestration	
<b><u>Depth Study 2: Strategies</u></b> approaches to land cover restoration and rehabilitation, and the mitigation of future land cover changes including preservation strategies	Premier Coal Website  Alcoa PDF
a program designed to address the impacts of land cover change on local and regional environments	Department of Parks and Wildlife website ( <a href="https://www.dpaw.wa.gov.au/">https://www.dpaw.wa.gov.au/</a> )
an evaluation of the program, giving consideration to environmental, economic and social benefit and costs	YouTube – Sustainable Forest Management in Western Australia
an evaluation of at least one alternative approach to the management of land cover change in the area being studied, using the concept of sustainability to determine the extent to which the approach has the potential to address the issue into the future	
how human activity has adapted, or may be required to adapt, to either global climate change or loss of biodiversity	YouTube – <i>smart climate change adaption in progress</i> <i>Why LA streets are being painted white</i> <i>The Brazilian Super cow Supersized Earth episode 3</i>
the current and proposed strategies, at local to global levels, implemented to mitigate the adverse effects of either global climate change or loss of biodiversity	<i>Adaption and mitigation climate Wisconsin</i> <i>The history of climate change negotiations in 83 seconds</i>