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| **Podcasts for DP Geography** | | | | |
| **Syllabus Topic** | **Specific Bullet Point** | **Podcast** | **Description** | **URL** |
| ***Core unit 1 – Changing Population*** | | | |  |
| **Population and economic development patterns** | Global patterns and classification of economic development:  • middle-income countries and emerging economies  (Petrostate) | *BBC – The Inquiry:*  *How Did Venezuela Go From So Rich To So Poor?* | Once the richest country in South America, Venezuela is now in deep economic crisis.  Children in school are fainting from hunger; patients are dying from the lack of basic medicine. As prices spiral out of control, cash is carried not in wallets, but in backpacks. Street protests over the crisis are growing in size and frequency - and the government's response becoming ever more authoritarian.  Yet in 1970, Venezuela was among the wealthiest countries in the world. It was held up as a beacon of democracy and stability - an example of a successful developing economy that turned oil resource wealth into riches. So what went wrong? How did Venezuela go from so rich to so poor? | <https://castbox.fm/episode/id468576-id37052539?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
| **Changing populations and places** | Population change and demographic transition over time, including natural increase, fertility rate, life expectancy, population structure and dependency ratios | *Freakonomics:*  *Why Do People Keep Having Children?* | Even a brutal natural disaster doesn't diminish our appetite for procreating. This surely means we're heading toward massive overpopulation, right? Probably not. | <https://castbox.fm/episode/id1356283-id83207675?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Population change and demographic transition over time, including natural increase, fertility rate, life expectancy, population structure and dependency ratios | *Isn’t that Spatial:*  *Geography of Reproduction* | ITS025 is all about babies and birth control - the geography of reproduction! We explore the spatial component of births, birth control, abortion access, and even baby name trends. | <https://isntthatspatial.net/episodes/2018/1/10/geography-of-reproduction> |
| **Challenges and opportunities** | Policies associated with managing population change, focusing on:  • policies related to ageing societies | *BBC – The Documentary:*  *Japan: New Ways to Grow Old - Part One* | Japan has the fastest ageing society in the world with more than a quarter of its population over the age of 65. It currently has 66,000 centenarians, more than any other country. Toshiko Katayose and Aki Maruyama Leggett explore some of the innovative ways in which Japanese people are adapting to living longer.  For over 20 years Toshiko Katayose edited Japan’s most popular magazine for senior readers. Now 67 and facing retirement, she reveals how her generation of baby-boomers born after World War Two, are overturning stereotypes about old age and how businesses are responding to these more demanding silver consumers. She visits Japan’s first supermarket built specifically to serve older shoppers which offers everything from crystal-studded walking sticks to try-before-you-buy coffin experiences. | <https://www.bbc.co.uk/sounds/play/w3cswhtp> |
|  | Policies associated with managing population change, focusing on:  • policies related to ageing societies | *BBC – The Documentary:*  *Japan: New Ways to Grow Old - Part Two* | Could living in a home designed to deliberately demand more effort from you each day help you stay fitter and more alert in your later years? And could people living with dementia be better integrated in the community through work? Aki Maruyama Leggett examines some of the novel ideas for senior housing and social care emerging in Japan. | <https://www.bbc.co.uk/sounds/play/w3cswhtq> |
|  | Policies associated with managing population change, focusing on:  • pro-natalist or anti-natalist policies | *The Guardian:*  *Falling fertility: lessons learned from Botswana* | Fifty years ago, the average woman in Botswana had seven children. Now she will have fewer than three. Enabling women to control their fertility has had huge ramifications for their health, education and employment – could President Trump’s ‘global gag rule’ threaten this? Nicola Davis travels to Botswana to investigate | <https://www.theguardian.com/science/audio/2018/oct/26/falling-fertility-lessons-learned-from-botswana-science-weekly-podcast?CMP=Share_AndroidApp_Messenger&fbclid=IwAR0-Nwprro9DICfzpoejahM1vSO_fpdZuyx29k9hdsivgLaZQ68ZOFkWc-Y> |
| ***Core unit 2 - Global climate—vulnerability and resilience*** | | | |  |
| **Causes of global climate change** | The enhanced greenhouse effect and international variations in greenhouse gas sources and emissions, in relation to economic development, globalization and trade | *BBC Witness*  *How the World Woke Up to Global Warming* | Professor James Hansen finally got US politicians to listen to his warnings about climate change in June 1988 after years of trying. He and fellow NASA scientists had first predicted global warming in 1981. Professor Hansen spoke to Ashley Byrne about his discoveries. | <https://castbox.fm/episode/id468571-id81704269?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | The enhanced greenhouse effect and international variations in greenhouse gas sources and emissions, in relation to economic development, globalization and trade | *BBC – The Inquiry:*  *Can We Eat Our Way Out Of Climate Change?* | Food production accounts for as much global greenhouse gas emissions as all forms of transport combined. That’s why many scientists think we can’t tackle climate change without addressing what we eat. So – in this week’s repeat Inquiry – we’re looking at alternative climate-friendly diets and asking what it would take to move the world towards them. | <https://castbox.fm/episode/id468576-id83660839?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | The enhanced greenhouse effect and international variations in greenhouse gas sources and emissions, in relation to economic development, globalization and trade | *Backstory:*  *247: Hot Enough For You? The History of Climate Change* | According to data from the National Oceanic and Atmospheric Administration (NOAA), 2018 is on pace to be the fourth hottest year on record. So, on this week’s episode, Nathan, Brian and Joanne talk about how Americans understood climate and weather in centuries past. They also explore how the invention of air conditioning changed America forever. | <https://castbox.fm/episode/id3663-id89703224?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | The enhanced greenhouse effect and international variations in greenhouse gas sources and emissions, in relation to economic development, globalization and trade | *BBC – Science in Action:*  *Watching the Earth ‘Breathe’* | By measuring how carbon moves through Earth's ecosystems we can get a grip on how human activities are altering the carbon cycle. NASA’s Orbiting Carbon Observatory-2 (OCO-2) has been watching the Earth breathe from space since 2014 and the results show the impact of El Nino events, volcanic activity and forest fires and even the pollution from individual highways. | <https://www.bbc.co.uk/sounds/play/w3cstzrx> |
| **Consequences of global climate change** | • incidence and severity of extreme weather events, including drought  • spatial changes in biomes, habitats and animal migration patterns  • changes to agriculture, including crop yields, limits of cultivation, soil erosion | *Wall Street Journal – The Future of Everything:*  *The Price of Climate: The Northern Farming Frontier* | Shifting weather patterns and rising temperatures are altering what crops farmers can plant. In the last of a three-part series on climate, we examine how advancements in AI and genetics could help farms battle drought and crop disease. | <https://castbox.fm/episode/id1403410-id112182345?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | • changes to agriculture, including crop yields, limits of cultivation, soil erosion | *Wall Street Journal – The Future of Everything:*  *The Price of Climate: Producing Heat-Resistant Beef* | As cattle farmers struggle with rising temperatures, scientists are scrambling to find solutions. In the second of a three-part series on climate, we meet a calf genetically engineered to withstand heat and get a taste of lab-grown beef. | <https://castbox.fm/episode/id1403410-id107897817?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | • spatial changes in biomes, habitats and animal migration patterns | *Wall Street Journal – The Future of Everything:*  *The Price of Climate: Is Commercial Fishing in Hot Water?* | Demand for wild seafood is rising-but so is the cost of bringing it ashore. In the first of a three-part series on climate, we meet the fishermen and scientists grappling with warming waters, shifting currents and rapidly changing economics. | <https://castbox.fm/episode/id1403410-id102855547?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | All points | *The Joe Rogan Experience:*  *#1259 - David Wallace-Wells* **Explicit language** | David Wallace-Wells is Deputy editor and climate columnist for New York magazine. His book "The Uninhabitable Earth: Life After Warming" is available now. | <https://castbox.fm/episode/id1608-id134238046?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | All points | *The Guardian:*  *Is climate change far worse than we realise?* | David Wallace-Wells, the author of new book The Uninhabitable Earth, depicts a world ravaged by climate chaos. India Rakusen talks to the author about why he thinks we are underestimating the impact climate change will have on the environment. | <https://www.theguardian.com/news/audio/2019/feb/05/is-climate-change-way-worse-than-we-realise-today-in-focus-podcast?CMP=Share_AndroidApp_Messenger&fbclid=IwAR3FYduURcKLTq6QKTWOE0BA95Voe1CYErBzwm-OKP1FgH8dwgVDsKSH478> |
|  | • incidence and severity of extreme weather events, including drought | *CBC – Quirks and Quarks:*  *Climate change attribution for extreme weather, cockpit air quality, and more Also, predicting adult voices from baby cries, island bird brains bigger than mainland birds, and lobster pain* | **'Climate change is here' - but is it to blame for the extreme weather this summer?** Why the airline industry might want to lower cockpit CO2 levels. A baby's cries can predict the sound of their adult voice. Island birds would likely beat their mainland relatives in a battle of wits. Do lobsters feel pain when we boil them? Why does eating beets make my urine turn pink? | <https://castbox.fm/episode/id1408910-id91178029?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | **Gulf of St. Lawrence**  • spatial changes in biomes, habitats and animal migration patterns  **Sahara**  Unit 3 - An overview of global patterns and trends in the availability and consumption of:  • energy, including the relative and changing importance of hydrocarbons, nuclear power, renewables, new sources of modern energy | *CBC – Quirks and Quarks:*  *Hurricane floods move the earth, octopuses on ecstasy, greening the Sahara, Gulf of St. Lawrence gasping for air, an elephant queen, and what happens to flushed opiods* | **We can forecast the hurricanes. Can we figure out how to forecast their floods?**; Octopuses on ecstasy: The party drug leads to eight-armed hugs; **The Sahara's wind and sun could power the world, and turn the desert green;** **The Gulf of St. Lawrence is running out of oxygen thanks to climate change;** Elephant families are very like ours, according to the filmmakers of 'The Elephant Queen'; What happens when opioids are released into the environment? | <https://castbox.fm/episode/id1408910-id93084147?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | • water stored in ice and oceans, and changing sea levels | *BBC – The Compass:*  *Living on the Edge* | Five of the Solomon Islands have disappeared, many more are becoming uninhabitable. For Kerry and Sally, climate change is not a theory - it is what has made them abandon their island and the graves of their ancestors. They see themselves as lucky - they had family land to move to and the skills to build new homes on stilts - but they are resigned to moving again.  Award-winning journalist Didi Akinyelure visits her home city of Lagos to find out the latest solution to sea level rise in West Africa. The glass towers of the new financial district of Eko Atlantic are protected from the waves by state of the art sea defences. The residents of the luxury apartments should keep their feet dry whatever the climate throws at them. That may be small comfort for their unprotected neighbours in the shanty town on the lagoon, Makoko, but they’re experts in survival against the odds. | <https://www.bbc.co.uk/sounds/play/w3csxfl2> |
|  |  | *BBC – Science in Action:*  *Antarctic Ice Melt and Sea Level Rise* | Antarctic ice melt and sea level rise – The rate of sea level rise from melting ice sheets and ice shelves in Antarctica has trebled in the past 5 years, due to global warming. Satellite data is showing that ice loss from Antarctica has increased global sea levels by 7.6mm since 1992 and could reach 15 cm the end of the century.  **Also (Option D – Geophysical Hazards):** Earthquake Prediction  Global earthquake models pass stress test. Combining GPS and seismic data gives us the best earthquake forecasts yet.  Undersea fibre optic data cables that carry the world’s telecommunications data can also be used to detect seismic signals from earthquakes. This is particularly useful for picking up signals from remote undersea tectonically active regions which are not very well covered by land-based seismic recorders. | <https://www.bbc.co.uk/sounds/play/w3cswmph> |
| **Responding to global climate change** | Government-led adaptation and mitigation strategies for global climate change:  • global geopolitical efforts, recognizing that the source/s of greenhouse gas emissions may be spatially distant from the countries most impacted | *BBC – The Inquiry:*  *Do We Need A Plan B For Climate Change?* | At a recent press conference on the new US budget questions were asked about funding for climate change initiatives. The answer was stark. “We’re not spending money on that anymore,” reporters were told, they’re a “waste of your money”. The new administration is sceptical about man-made climate change. Most of the world’s scientists and governments, however, are not. The Paris Agreement committed the world to prevent global temperatures from rising more than two degrees over pre-industrial levels. That target looked close to impossible even before the election of Donald Trump. So – our question this week – do we need a ‘plan B’? Scientists have been developing some very ambitious ideas to re-engineer our climate. They have created materials that could suck carbon dioxide out of the air and a scheme to pump reflective particles into the atmosphere. But – if ‘plan A’ fails – might any of these last-ditch ideas actually work? | <https://castbox.fm/episode/id468576-id32928000?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Multiple points, including causes and consequences | *BBC – Science in Action:*  *State of the Climate 2016* | 2016 started at the peak of a powerful El Nino event, and with memories of the Paris Climate agreement freshly reached in 2015, both of which helped set the stage for the way climate and discussions about climate played out this year. It ended with speculation about how a Trump presidency might change the political stage, the Paris agreement ratified and the certainty that this year has been the warmest at least in the historical record. Science in Action concludes the year with an overview of the state of the climate, and what the prospects are for future climate change.  Taking part:  Dr Richard Betts, of the UK Met Office  Professor Ralph Keeling, of the University of California San Diego  Dr Friederike Otto, of the Oxford University Environmental Change Institute  Dr Ted Scambos, Senior Scientist at the US National Snow and Ice Data Center  Professor Corinne Le Quere, Director of the Tyndall Centre for Climate Change, University of East Anglia  Dr Autun Purser, Alfred Wegener Institute | <https://www.bbc.co.uk/sounds/play/p04kt49r> |
| ***Core unit 3 - Global resource consumption and security*** | | | |  |
| **Global trends in consumption** | Measuring trends in resource consumption, including individual, national and global ecological footprints | *Freakonomics:*  *How Stupid Is Our Obsession With Lawns?* | Nearly two percent of America is grassy green. Sure, lawns are beautiful and useful and they smell great. But are the costs — financial, environmental and otherwise — worth the benefits? | <https://castbox.fm/episode/id1356283-id83207837?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Measuring trends in resource consumption, including individual, national and global ecological footprints | *BBC Witness*  *Earth Day* | On April the 22 1970, 20 million Americans came out on to the streets to demonstrate for a healthy, sustainable environment in the first so-called Earth Day. Mass rallies were held to highlight concerns about pollution and the destruction of America's natural heritage. Some see it as the birth of the modern environmental movement. Farhana Haider spoke to Denis Hayes, the organiser of that first Earth Day. | <https://castbox.fm/episode/id468571-id73971675?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Measuring trends in resource consumption, including individual, national and global ecological footprints | *BBC – Science in Action:*  *Defining the Anthropocene* | Geologists define time by looking at major shifts in the Earth’s system, and chop up the planet’s timeline into Periods and Epochs – you may have heard of the Jurassic, Carboniferous and Pleistocene. We have been in the Holocene epoch for almost 12,000 years, since the last great Ice Age. Now it is time to enter a new epoch – and its personal this time – it has been coined the ‘Anthropocene’, the Age of Man because humans are influencing the very fabric of the planet. But there is some debate over exactly when it started. Scientists like nice, neatly defined markers – like the chemical signature left by the meteorite strike that wiped out the dinosaurs – called a ‘golden spike’. They also require long-lasting changes to the Earth. | <https://www.bbc.co.uk/sounds/play/p02l9s4s> |
| **Impacts of changing trends in resource consumption** | The disposal and recycling of consumer items, including international flows of waste | *BBC – The Inquiry:*  *Is it Time to Ban the Plastic Bottle?* | Every single second, 20,000 single-use drinking bottles are sold around the world. That is more than a million pieces of non-biodegradable rubbish produced every minute. And as demand grows in developing economies, so will the mountains of waste, with much of it ending up in the ocean.  We learn how the invention of the plastic bottle spawned an industry that has quickly got us hooked. We hear the consequences of our addiction from the man who has dedicated his life to The Great Pacific Garbage Patch. And, with one estimate that by 2050 there will be more plastic in our oceans than fish, we ask if we now need a radical solution. Is it time to ban the plastic bottle? | <https://castbox.fm/episode/id468576-id44417153?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | The water–food–energy “nexus” and [its] complex interactions | *BBC – Science in Action:*  *Energy, Water and Food* | Global efforts to try and improve energy, water and food supplies are becoming increasingly necessary. But they are being dealt with on an individual basis where they should be solved in an integrated manner according to Professor Michael E. Webber, deputy Director of the Energy Institute at the University of Texas at Austin in the US. | <https://www.bbc.co.uk/sounds/play/p02kbhq0> |
| **Resource stewardship** | Divergent thinking about population and resource consumption trends | *Freakonomics:*  *Two (Totally Opposite) Ways to Save the Planet* | The environmentalists say we’re doomed if we don’t drastically reduce consumption. The technologists say that human ingenuity can solve just about any problem. A debate that’s been around for decades has become a shouting match. Is anyone right? | <https://castbox.fm/episode/id1356283-id89514168?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | optimistic views, including Boserup | *Freakonomics:*  *The Future of Meat* | Global demand for beef, chicken, and pork continues to rise. So do concerns about environmental and other costs. Will reconciling these two forces be possible — or, even better, Impossible™? | <https://castbox.fm/episode/id1356283-id129070289?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Divergent thinking about population and resource consumption trends:  • pessimistic views, including neo-Malthusian views  Resource stewardship strategies | *BBC Witness:*  *The Doomsday Seed Vault* | In January 2008, seeds began arriving at the world's first global seed vault, buried deep inside a mountain on an Arctic island a-thousand kilometres north of the Norwegian coast. The vault was built to ensure the survival of the world's food supply and its agricultural history in the event of a global catastrophe. Louise Hidalgo has been speaking to the man whose idea it was, American agriculturalist Cary Fowler. | <https://castbox.fm/episode/id468571-id117687626?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Resource stewardship strategies, including:  • the value of the circular economy as a systems approach for effective cycling of materials and energy | *NPR – TED Radio Hour:*  *Circular* | We're told if the economy is growing, and if we keep producing, that's a good thing. But at what cost? This hour, TED speakers explore circular systems that regenerate and re-use what we already have. | <https://www.npr.org/programs/ted-radio-hour/674117058/circular> |
| ***Core HL extension unit 4 - Power, places and networks*** | | | |  |
| **Global interactions and global power** | Powerful organizations and global groups: global lending institutions, including the International Monetary Fund (IMF) | *Freakonomics:*  *Pick of the Week: Not Your Grandmother’s I.M.F.* | From the archive — The International Monetary Fund has long been the "lender of last resort" for economies in crisis. Christine Lagarde, who runs the institution, would like to prevent those crises from ever happening. She tells us her plans. | <https://castbox.fm/episode/id1356283-id83207794?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Powerful organizations and global groups: global lending institutions, including the International Monetary Fund (IMF) | *Freakonomics:*  *Pick of the Week: Hacking the World Bank* | From the archive — Jim Yong Kim has an unorthodox background for a World Bank president — and his reign thus far is just as unorthodox. | <https://castbox.fm/episode/id1356283-id83207631?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Global superpowers and their economic, geopolitical and cultural influence | *Freakonomics:*  *Did China Eat America’s Jobs?* | For years, economists promised that global free trade would be mostly win-win. Now they admit the pace of change has been "traumatic." This has already led to a political insurrection -- so what's next? | <https://castbox.fm/episode/id1356283-id83207739?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Global superpowers and their economic, geopolitical and cultural influence | *BBC – The Inquiry:*  *Why Does China Want to Revive the Silk Road?* | China is currently developing the biggest infrastructure initiative of all time. Called the Belt and Road initiative, the trillion dollar plans involve working with other Asian countries to build hundreds of new roads, high speed trains, ports and pipelines across continent to mimic the ancient Silk Road trading routes. The project offers a clear economic opportunity, but the diplomatic ties that form as a result could have the potential to change the current world order. | <https://castbox.fm/episode/id468576-id40665662?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
| **Global networks and flows** | Foreign Direct Investment (FDI) and outsourcing by transnational corporations (TNCs), and ways in which this networks places and markets | *BBC – The Inquiry*  *Is the China-Africa Love Affair Over?*  \*This does not fulfill the TNC requirement of this bullet point but it is a great discussion of the topic summary “How different places become interconnected by global interactions”; links well with other topics (geopolitical tension, global superpowers) | The burgeoning relationship between China and Africa has been one of the great economic stories of the 21st century. Billions of dollars of investment and loans from China have created radical change in many African countries. But not everyone is happy, with some even claiming this is a new form of colonialism. As signs of discontent grow in countries like Zambia, and investment numbers start to slip down, we ask: is the China-Africa love affair over? | <https://castbox.fm/episode/id468576-id98373921?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | An overview of contemporary global networks and flows:  • illegal flows (narcotics) | *The Guardian:*  *The cocaine trade: a global trail of violence* | Anushka Asthana traces the production of cocaine from coca plantations in Colombia with the journalist Joe Parkin Daniels, Adeolu Ogunrombi from the West African Commission on Drugs and the author JS Rafaeli. | <https://www.theguardian.com/news/audio/2018/nov/12/the-cocaine-trade-a-global-trail-of-violence?CMP=Share_AndroidApp_Messenger&fbclid=IwAR3EeEHOz-1rIXvpWAZs253mkSCy5MMIa0brQbSfqla9MGk1ZIVNmO8pgyk> |
|  | An overview of contemporary global networks and flows:  • international remittances from economic migrants  • illegal flows, such as trafficked people  Also fits with anti-immigration movements (although not local or civil society) and increased nationalism | *Radiolab:*  *Border Trilogy Part 1: Hole in the Fence* | While scouring the Sonoran Desert for objects left behind by migrants crossing into the United States, anthropologist Jason De León happened upon something he didn't expect to get left behind: a human arm, stripped of flesh.  This macabre discovery sent him reeling, needing to know what exactly happened to the body, and how many migrants die that way in the wilderness. In researching border-crosser deaths in the Arizona desert, he noticed something surprising. Sometime in the late-1990s, the number of migrant deaths shot up dramatically and have stayed high since. Jason traced this increase to a Border Patrol policy still in effect, called “Prevention Through Deterrence.”  Over three episodes, Radiolab will investigate this policy, its surprising origins, and the people whose lives were changed forever because of it.  **Part 1: Hole in the Fence:**  We begin one afternoon in May 1992, when a student named Albert stumbled in late for history class at Bowie High School in El Paso, Texas. His excuse: Border Patrol. Soon more stories of students getting stopped and harassed by Border Patrol started pouring in. So begins the unlikely story of how a handful of Mexican-American high schoolers in one of the poorest neighborhoods in the country stood up to what is today the country’s largest federal law enforcement agency. They had no way of knowing at the time, but what would follow was a chain of events that would drastically change the US-Mexico border. | <https://castbox.fm/episode/id129730-id70566224?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  |  | *Radiolab:*  *Border Trilogy Part 2: Hold the Line* | **Part 2: Hold the Line**  After the showdown in court with Bowie High School, Border Patrol brings in a fresh face to head its dysfunctional El Paso Sector: Silvestre Reyes. The first Mexican-American to ever hold the position, Reyes knows something needs to change and has an idea how to do it. One Saturday night at midnight, with the element of surprise on his side, Reyes unveils ... Operation Blockade. It wins widespread support for the Border Patrol in El Paso, but sparks major protests across the Rio Grande. Soon after, he gets a phone call that catapults his little experiment onto the national stage, where it works so well that it diverts migrant crossing patterns along the entire U.S.-Mexico Border.  Years later, in the Arizona desert, anthropologist Jason de León realizes that in order to accurately gauge how many migrants die crossing the desert, he must first understand how human bodies decompose in such an extreme environment. He sets up a macabre experiment, and what he finds is more drastic than anything he could have expected. | <https://castbox.fm/episode/id129730-id72343656?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  |  | *Radiolab:*  *Border Trilogy Part 3: What Remains* | **Part 3: What Remains**  The third episode in our Border Trilogy follows anthropologist Jason De León after he makes a grisly discovery in Arivaca, Arizona. In the middle of carrying out his pig experiments with his students, Jason finds the body of a 30-year-old female migrant. With the help of the medical examiner and some local humanitarian groups, Jason discovers her identity. Her name was Maricela. Jason then connects with her family, including her brother-in-law, who survived his own harrowing journey through Central America and the Arizona desert.  With the human cost of Prevention Through Deterrence weighing on our minds, we try to parse what drives migrants like Maricela to cross through such deadly terrain, and what, if anything, could deter them. | <https://castbox.fm/episode/id129730-id73992135?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Hits multiple bullet points in HL extension. | *Freakonomics:*  *Is Migration a Basic Human Right?* | The argument for open borders is compelling -- and deeply problematic. | <https://castbox.fm/episode/id1356283-id83207678?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
| **Human and physical influences on global interactions** | Our “shrinking world” and the forces driving technological innovation:  • patterns and trends in communication infrastructure and use | *BBC Witness:*  *India's First Call Centre* | Pramod Bhasin returned home to India in 1997 after working abroad for years. He spotted an opportunity to start a new industry that would revolutionise the country's economy. He tells Witness how he set up India's first call centre in spite of telecom challenges that might have put most entrepreneurs off. | <https://castbox.fm/episode/id468571-id121590974?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Political factors that affect global interactions:  • multi-governmental organizations (MGOs) and free trade zones  • economic migration controls and rules | *BBC Witness:*  *Maastricht: The birth of the European Union* | In February 1992, European ministers from 12 countries signed a treaty that would lead towards greater economic and political unity. The European Union would become the biggest free trading bloc in the world, but over the years it has survived several rocky moments as individual countries have questioned whether they want to be included. Senior EU Official Jim Cloos was one of those involved in drafting the Maastricht Treaty, and he explained to Rebecca Kesby how exciting it was to be involved in the project in those early days. | <https://castbox.fm/episode/id468571-id129429828?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Our “shrinking world” and the forces driving technological innovation:  • transport developments over time (containerization) | *Containers:*  *Episode 1: Welcome to Global Capitalism* | Alexis Madrigal brings you the gripping story of how a new way of shipping stuff across the ocean fed the Vietnam War, destroyed America's great port cities, and created global trade as we know it. | <https://castbox.fm/episode/id1270930-id76878730?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
| ***Core HL extension unit 5 - Human development and diversity*** | | | |  |
| **Development opportunities** | The multidimensional process of human development and ways to measure it:  • validity and reliability of development indicators and indices, including the human development index (HDI)  \*Also links well to Unit 1 – Economic development | *Freakonomics:*  *The Health of Nations* | For decades, GDP has been the yardstick for measuring living standards around the world. Martha Nussbaum would rather use something that actually works. | <https://castbox.fm/episode/id1356283-id83207429?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  |  | *Freakonomics:*  *Fixing the World, Bang-for-the-Buck Edition* | A team of economists has been running the numbers on the U.N.'s development goals. They have a different view of how those billions of dollars should be spent. | <https://castbox.fm/episode/id1356283-id83207679?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | The importance of social entrepreneurship approaches for human development:  • TNC corporate social responsibility frameworks and global agreements | *Freakonomics:*  *Is Good Corporate Citizenship Also Good for the Bottom Line?* | Our latest Freakonomics Radio on Marketplace podcast is called “Is Good Corporate Citizenship Also Good for the Bottom Line?” The short answer: yes. That’s the finding of Robert G. Eccles, Ioannis Ioannou and George Serafeim from their recent paper “The Impact of a Corporate Culture of Sustainability on Corporate Behavior and Performance”. You’ll hear Serafeim explain his findings and you’ll also hear from Georg Kell, executive director of the UN Global Compact. Its mission is to help companies around the world adopt the behaviors of Corporate Social Responsibility (CSR) — which include not only good environmental stewardship but also fighting corruption and the ethical treatment of employees and customers. | <http://freakonomics.com/2012/01/19/is-good-corporate-citizenship-also-good-for-the-bottom-line/> |
|  | • TNC corporate social responsibility frameworks and global agreements | *BBC – One Planet:*  *Corporate Social Responsibility, Australian climate change, and migration in Mali* | Corporate Social Responsibility is one of the big corporate trends of recent years, with big companies proclaiming their sustainability credentials. But what responsibility, if any, do big corporations really have to wider society?  On One Planet this week we talk to John Brock, the head of Coca-Cola Enterprises, which handles production and distribution of Coca-Cola across western Europe, about greenwash, recycling, and whether big corporations are responsible to anyone but their shareholders. | <https://www.bbc.co.uk/sounds/play/p00dl770> |
| **Changing identities and cultures** | The effects of global interactions on cultural diversity in different places:  • the diffusion of cultural traits, and cultural imperialism | *BBC – In Our Time:*  *Cultural Imperialism* | Melvyn Bragg and guests discuss how a dominant power can exert a cultural influence on its empire. An empire rests on many things: powerful armies, good administration and strong leadership, but perhaps its greatest weapon lies in the domain of culture. Culture governs every aspect of our lives: our dress sense and manners, our art and architecture, our education, law and philosophy. To govern culture, it seems, is to govern the world. But what is cultural imperialism? Can it be distinguished from cultural influence? Does it really change the way we think and should we try to prevent it even if it does?With Linda Colley, School Professor of History, London School of Economics; Phillip Dodd, Director, Institute of Contemporary Arts; Mary Beard, Reader in Classics, Cambridge University. | <https://www.bbc.co.uk/sounds/play/p00548h4> |
| **Local responses to global interactions** | Geopolitical constraints on global interactions:  • national trade restrictions, including protectionism and resource nationalism | *Freakonomics:*  *Did China Eat America’s Jobs?* | For years, economists promised that global free trade would be mostly win-win. Now they admit the pace of change has been "traumatic." This has already led to a political insurrection -- so what's next? | <https://castbox.fm/episode/id1356283-id83207739?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
| ***Core HL extension unit 6 - Global risks and resilience*** | | | |  |
| **Geopolitical and economic risks** | Threats to individuals and businesses:  • hacking, identity theft and the implications of surveillance for personal freedoms | *Wall Street Journal – The Future of Everything:*  *Smart Cities: Safer Living or Cyber Attacks?* | Urban areas around the world are increasingly equipped with sensors to track-and control-everything from traffic patterns to wastewater. But this increased connectivity and data collection opens us up to devastating hacks and unwanted surveillance. | <https://castbox.fm/episode/id1403410-id90158235?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Threats to individuals and businesses:  • hacking, identity theft and the implications of surveillance for personal freedoms | *BBC – The Inquiry:*  *Is Privacy Dead?* | We all do it: ask a search engine things we wouldn’t dare ask a friend, post our lives on social media, hit the ‘agree’ button on privacy conditions we never read. This is life in our online age. To get our favourite apps and services for free, we provide companies with the intimate details of our lives. Businesses we’ve heard of, and many we haven’t, make money off this data in ways we may not fully realise. And almost every week it seems there’s another data breech – Equifax, Sonic, and Deloitte have been hacked in the last month alone. Each time the private data of millions of people is compromised. Can we control who knows what about us? And are we comfortable with how much information we’re giving up and how it might be used, or mis-used? This week the Inquiry asks “Is Privacy Dead?” | <https://castbox.fm/episode/id468576-id52680218?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | * Threats to individuals and businesses * New and emerging threats to the political and economic sovereignty of states (automation and self-driving vehicles) | *Freakonomics:*  *Why Is This Man Running for President?* | In the American Dream sweepstakes, Andrew Yang was a pretty big winner. But for every winner, he came to realize, there are thousands upon thousands of losers — a “war on normal people,” he calls it. Here’s what he plans to do about it. | <https://castbox.fm/episode/id1356283-id118598044?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | * Threats to individuals and businesses * New and emerging threats to the political and economic sovereignty of states (automation and self-driving vehicles) | *The Joe Rogan Experience:*  *#1245 - Andrew Yang*  **Explicit language** | Andrew Yang is an American entrepreneur, the founder of Venture for America, and a 2020 Democratic presidential candidate. | <https://castbox.fm/episode/id1608-id128766538?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | profit repatriation and tax avoidance by TNCs and wealthy individuals | *BBC – The Inquiry:*  *Why Doesn’t Apple Pay More Tax?* | The world’s most profitable company is accused of aggressively dodging tax. Leaked documents in the Paradise Papers show Apple moved hundreds of billions of dollars in untaxed foreign profits to Jersey, where foreign companies pay no corporation tax. Yet Apple says it pays “every dollar it owes in every country around the world”. Confused? Not for long. | <https://castbox.fm/episode/id468576-id57906674?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | New and emerging threats to the political and economic sovereignty of states | *Wall Street Journal – The Future of Everything:*  *The Next Battlefield: Hacking as Warfare* | Foreign governments are targeting our information, our infrastructure and even our democracy. But what constitutes an act of war in the digital age? When does espionage become an outright attack? Meet the soldiers in the fight for cyber security. | <https://castbox.fm/episode/id1403410-id90158228?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | The correlation between increased globalization and renewed nationalism/tribalization  • Two detailed examples to illustrate geopolitical tension/conflict | *BBC – The Inquiry:*  *How Did Venezuela Go From So Rich To So Poor?* | Once the richest country in South America, Venezuela is now in deep economic crisis.  Children in school are fainting from hunger; patients are dying from the lack of basic medicine. As prices spiral out of control, cash is carried not in wallets, but in backpacks. Street protests over the crisis are growing in size and frequency - and the government's response becoming ever more authoritarian.  Yet in 1970, Venezuela was among the wealthiest countries in the world. It was held up as a beacon of democracy and stability - an example of a successful developing economy that turned oil resource wealth into riches. So what went wrong? How did Venezuela go from so rich to so poor? | <https://castbox.fm/episode/id468576-id37052539?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | The correlation between increased globalization and renewed nationalism/tribalization  • Two detailed examples to illustrate geopolitical tension/conflict  Also fits well with Unit 5 - Local responses to global interactions - Local and civil society resistance to global interactions:  • rise of anti-immigration movements | *BBC – The Inquiry:*  *Will populism destroy the European Union?* | The European Union was formed in the years after the Second World War to secure peace and promote economic progress. It aimed to achieve that by ensuring that countries worked together. But that optimistic vision has now been shaken. There is mounting anxiety about whether the EU can hold together. Some are even saying that the EU is facing an existential crisis. That’s because the elections in May are likely to bring in another wave of populist politicians promoting nationalist agendas. The Inquiry will detail the fissures that have been exposed in recent years. One cause has been migration from countries outside the EU and the pressures caused by free movement within its borders. The severe economic downturn has threatened unity too. Kavita Puri explores whether there are moments in the European Union’s history when, had different decisions been made, the EU might have hung together better. | <https://castbox.fm/episode/id468576-id136026642?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
| **Environmental risks** | Transboundary pollution (TBP) affecting a large area/more than one country  • One TBP case study including the consequences and possible responses  (Microplastics; Pacific Garbage Patch) | *BBC – The Inquiry:*  *Is it Time to Ban the Plastic Bottle?* | Every single second, 20,000 single-use drinking bottles are sold around the world. That is more than a million pieces of non-biodegradable rubbish produced every minute. And as demand grows in developing economies, so will the mountains of waste, with much of it ending up in the ocean.  We learn how the invention of the plastic bottle spawned an industry that has quickly got us hooked. We hear the consequences of our addiction from the man who has dedicated his life to The Great Pacific Garbage Patch. And, with one estimate that by 2050 there will be more plastic in our oceans than fish, we ask if we now need a radical solution. Is it time to ban the plastic bottle? | <https://castbox.fm/episode/id468576-id44417153?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Transboundary pollution (TBP) affecting a large area/more than one country  • One TBP case study including the consequences and possible responses  (Microplastics; Pacific Garbage Patch) | *BBC – The Inquiry*  *Is Plastic Doomed?* | The tide of public opinion is turning on plastic.  The image of a whale with plastic stuck in its mouth on the BBC nature documentary Blue Planet 2 woke people up across the world to the reality of plastic pollution in our oceans. Experts think that by 2050, there could be more plastic than fish in the sea. Communities across the globe are saying that something must be done.  But does this change in public mood spell disaster for plastic? And if so, what would replace it? We go from Europe, to the US and Indonesia to examine the supply and demand of plastic. | <https://castbox.fm/episode/id468576-id71464323?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | • One TBP case study including the consequences and possible responses (Southeast Asian Haze) | *BBC – Science in Action:*  *Worst SE Asian Haze for 20 Years* | The annual devastating and deadly haze across South-East Asia is been caused by smoke from forest and peatland fires and is the strongest in the last 20 years. These fires were started deliberately to clear land for plantations. At its height, the haze spread to Singapore, Malaysia, Thailand, and The Philippines, causing an environmental and health disaster. Susan Minnemayer from the World Resources Institute explains why the haze is so much worse than other years. | <https://www.bbc.co.uk/sounds/play/p036hn8h> |
|  | Environmental issues linked with the global shift of industry:  • food production systems for global agribusiness  \*Relates well to Option F: Food and Health  \*Relates well to Unit 3 – FEW Nexus | *Freakonomics:*  *You Eat What You Are, Part 2* | To feed 7 billion people while protecting the environment, it would seem that going local is a no-brainer -- until you start looking at the numbers. | <https://castbox.fm/episode/id1356283-id83207484?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Environmental issues linked with the global shift of industry:  • food production systems for global agribusiness  \*Relates well to Option F: Food and Health  \*Relates well to Unit 3 – FEW Nexus and Food Security | *Freakonomics:*  *You Eat What You Are, Part 1* | How American food so got bad -- and why it's getting so much better. | <https://castbox.fm/episode/id1356283-id83207481?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Multiple points; can be combined with TBP study of SE haze (fires to clear for P.O. plantations) | *The Guardian:*  *How the world got hooked on palm oil* | It’s the miracle ingredient in everything from biscuits to shampoo. But our dependence on palm oil has devastating environmental consequences. Is it too late to break the habit? | <https://www.theguardian.com/news/audio/2019/mar/08/how-the-world-got-hooked-on-palm-oil-podcast?CMP=Share_AndroidApp_Messenger&fbclid=IwAR36RdL5d75tOOBxaLxhlFAGknsweU_3phQ6XTta48Crah9FzSolSwIBQ0M> |
| **Local and global resilience** | The success of international civil society organizations in attempting to raise awareness about, and find solutions for, environmental and social risks associated with global interactions | *BBC Witness:*  *The Discovery of Whale Song* | In 1967 a biologist began listening to strange sounds recorded way out at sea, he realised it was whales and that they were singing. Claire Bowes has been talking to Dr Roger Payne about the discovery that helped change people's perception of whales and helped found the modern conservation movement at a time when whales were close to extinction. | <https://castbox.fm/episode/id468571-id59015633?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | The success of international civil society organizations in attempting to raise awareness about, and find solutions for, environmental and social risks associated with global interactions | *The Guardian:*  *How Greta Thunberg's school strike went global* | Greta Thunberg’s school strike against climate change has spread to 71 countries, and this Friday’s action could be one of the largest global climate change protests ever. Now nominated for the Nobel peace prize, she tells our environment editor Jonathan Watts how it all began. | <https://www.theguardian.com/news/audio/2019/mar/14/greta-thunberg-how-her-school-strike-went-global-podcast?fbclid=IwAR11HtMc5XNPS5HbknYOe08urMBOQnqNi4aihXkB1aBWWcPlwBFstwtLu48> |
| ***Optional theme A - Freshwater*** | | | |  |
| **Drainage basin hydrology and geomorphology** | The drainage basin as an open system with **inputs** (precipitation of varying type and intensity) | *Pennsylvania Earth Science Teachers Association (Paesta):*  *How do Scientists Measure Rainfall?* | Many schools will have a rain gauge installed, where students can measure and record the amount of rain that falls each day. But scientists do not measure precipitation on the ground – they measure precipitation from space, using a combination of active and passive remote-sensing techniques, improving the spatial and temporal coverage of precipitation observations on a global scale. | <https://www.paesta.psu.edu/podcast/paesta-podcast-series-episode-3-how-do-scientists-measure-rainfall> |
|  | The drainage basin as an open system with inputs (precipitation of varying type and intensity), outputs (evaporation and transpiration), flows (infiltration, throughflow, overland flow and base flow) and stores (including vegetation, soil, aquifers and the cryosphere) | *Pennsylvania Earth Science Teachers Association (Paesta):*  *Episode 4 - What is a Watershed?* | We all live in a watershed – think of it as your ecological address, and no matter where you are on land, any water that falls in that same location has a drainage destination determined by elevation and landforms.  \*There are also non-IB specific teaching resources on this site\* | <https://www.paesta.psu.edu/podcast/paesta-podcast-series-episode-4-what-watershed> |
| **Flooding and flood mitigation** | * How urbanization, deforestation and channel modifications affect flood risk within a drainage basin, including its distribution, frequency and magnitude * Flood mitigation… | *BBC – Science in Action:*  *Preventing Flood Damage in South Asia* | Floods in South Asia have claimed the lives of over 800 people. International collaboration is required to repair rivers and coasts in order to avoid such a high toll in the future. | <https://www.bbc.co.uk/sounds/play/w3cstzrp> |
|  | * Attempts at flood prediction, including changes in weather forecasting and uncertainty in climate modelling * Flood mitigation, including structural measures (dams, afforestation, channel modification and levee strengthening) and planning (personal insurance and flood preparation, and flood warning technology) | *BBC – Science in Action:*  *The Politics of Flood Forecasting* | International Flood Forecasting  The Uttarakhand region of northern India has recently seen the heaviest rains in 80 years. The floods which followed are thought to have led to the deaths of over 5,700 people, according to official figures released this week. Every year we hear similar stories after floods in South Asia. Yet better cross-border co-ordination and collaboration on both flood warning and evacuation could save many lives. We look at the problem and the solutions. | <https://www.bbc.co.uk/sounds/play/p01bz3vg> |
|  | * How urbanization, deforestation and channel modifications affect flood risk within a drainage basin, including its distribution, frequency and magnitude * Attempts at flood prediction, including changes in weather forecasting and uncertainty in climate modelling * Flood mitigation… | *BBC – Science in Action:*  *Europe’s Floods* | Central Europe is witnessing severe flooding. Heavy rain has swelled the river systems affecting Austria, the Czech Republic and Germany. We look at the scientific solutions for dealing with this recurring problem. | <https://www.bbc.co.uk/sounds/play/p019370d> |
|  | Flood mitigation, including structural measures (dams, afforestation, channel modification and levee strengthening) and planning (personal insurance and flood preparation, and flood warning technology)  (Mississippi) | *Nature.com:*  *Human’s influence on the Mississippi* | From 10:16: The Mississippi’s flooding history  Investigating tree rings and lake sediment is giving scientists an idea of how human management of the Mississippi has affected flooding. | <https://www.nature.com/articles/d41586-018-04990-9> |
| **Water scarcity and water quality** | Internationally shared water resources as a source of conflict  • Case study of one internationally shared water resource and the role of different stakeholders in attempting to find a resolution (Mekong River) | *NPR:*  *China Reshapes The Vital Mekong River To Power Its Expansion* | “The Golden Triangle is known for being a drug-trafficking hub. The monthly patrols aim "to make the border river safer," according to China's Xinhua News Agency, after the killing of 13 Chinese sailors in 2011. But some analysts see a different interpretation: intimidation.  ….What's more, China is building a series of hydropower dams on the Mekong, which analysts say will produce needed electricity while posing major threats to the environment — and will further expand its control in the region.” | <https://www.npr.org/2018/10/06/639280566/china-reshapes-the-vital-mekong-river-to-power-its-expansion?fbclid=IwAR1x4TD4cgYDjgR6LBAUfJSSggSppo4wJ4rXsOfTm0jbocPwG7uH7CFfIDE> |
|  | Internationally shared water resources as a source of conflict  • Case study of one internationally shared water resource and the role of different stakeholders in attempting to find a resolution  (GERD) | *The Sources of the Nile:*  *Episode 2 - An emotional dam?* | We are joined by Iginio Gagliardone and Wondwosen Michago Seide to discuss the role that media and emotions play in framing the Grand Ethiopian Renaissance Dam as a symbol of unity and development for Ethiopia. | <https://castbox.fm/episode/id1257671-id75737820?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Internationally shared water resources as a source of conflict  • Case study of one internationally shared water resource and the role of different stakeholders in attempting to find a resolution  (GERD) | *The Sources of the Nile:*  *Episode 5 - Sudan: caught in between* | This episode was recorded in Khartoum, where we met, among many others, Tamer Abd Alkreem, anthropologist at the University of Khartoum, and Omnia Shawkat, co-founder of the Sudanese digital magazine Andarya. They talk about the plurality of identities shaped by the Nile in Sudan, the competing interests that people have on the river, and how they are represented in the media. | <https://castbox.fm/episode/id1257671-id75737823?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Physical and economic water scarcity, and the factors that control these including the causes and impacts of droughts; the distinction between water quantity and water quality | *Pennsylvania Earth Science Teachers Association (Paesta):*  *The Flint Water Crisis – What is happening, and what are the consequences?* | In this podcast, I will be answering the following questions that pertain to the Flint water crisis. Who is to blame? What caused the Flint water crisis? Was the Flint water crisis preventable? What are the lasting consequences? What are the political ramifications? Along with these questions, I will also answer some common questions that people are asking about the Flint water crisis. | <https://www.paesta.psu.edu/podcast/flint-water-crisis-what-happening-and-what-are-consequences-paesta-podcast-series-episode-7> |
|  | Environmental consequences of agricultural activities on water quality, to include pollution (eutrophication) and irrigation (salinization)  • Detailed examples to illustrate the role of different stakeholders  (Murray-Darling) | *ABC Podcasts:*  *We need new water in the Murray-Darling system: Joyce* | The former Federal Water Minister, Barnaby Joyce, has defended his approach to the Murray Darling Basin plan, after Labor proposed removing the cap on water buybacks from the river. | <https://player.fm/series/abc-podcasts/we-need-new-water-in-the-murray-darling-system-joyce> |
|  | Murray-Darling | *Drive:*  *History of the Murray Darling Basin* | Did you know, the Murray-Darling Basin covers about a sixth of our continent? Or that 60,000 years ago, an even mightier river flowed through the land. Richard Kingsford from the University of NSW delves into the depths of the basin to reveal its history and mysteries. | <https://www.abc.net.au/radio/sydney/programs/drive/siw-history-of-the-murray-darling-basin/10809288> |
|  | Murray-Darling | *BBC – Costing the Earth:*  *The Battle for the Murray Darling* | Drought is set to be a permanent way of life in Australia even after the summer ends. How is the driest country on the driest continent in the world going to manage its water supplies to ensure that its growing population has enough? | <https://www.bbc.co.uk/sounds/play/b007cp8y> |
| **Water management futures** | Growing pressures on major wetlands and efforts to protect them | *BBC – Costing the Earth:*  *Wetland Wonder* | What have wetlands ever done for us? Apart from providing fresh water, carbon storage, flood mitigation, wildlife habitat and much more....they are said to be critical to human and planetary life. But a recent report claims despite this these ecosystems are disappearing three times faster than forests. Around 35% of the worlds wetlands were lost between 1970 and 2015 - but the UK lost most of its before then. So why don't we care? Are a 'bunch of bogs and ditches' less valued than a romantic forest?  Tom Heap finds out what wetlands are and what they do for us and if policy makers and decision-makers need to value them more highly, should we too? The positive news is wetlands can be created and improved - both on a large scale and in our own gardens and neighbourhoods. Is it time to make some noise for the wonders of wetlands? | <https://www.bbc.co.uk/sounds/play/m00010zj> |
|  | The importance of strengthening participation of local communities to improve water management in different economic development contexts, including sustainable water use and efficiency, and ensuring access to clean, safe and affordable water  Increased dam building for multipurpose water schemes, and their costs and benefits  • Case study of contemporary dam building expansion in one major drainage basin  (Site-C Dam, Peace River, British Columbia) | *Cited:*  *#64: Site C and High Modernity* | In British Columbia, energy experts want to transition off of fossil fuels. We look at B.C.’s indigenous history to ask whether the province can decarbonize and decolonize at the same time.  Today on the show we talk to Leigh Phillips, a science writer with the Pacific Institute for Climate Solutions, and Caleb Behn, an Eh-Cho Dene and Dunne Za activist and lawyer. Caleb is a Working Group Chair on the Decolonizing Water project and the subject of the documentary film Fractured Land. | <http://citedpodcast.com/64-site-c-high-modernity/> |
|  | The importance of strengthening participation of local communities to improve water management in different economic development contexts, including sustainable water use and efficiency, and ensuring access to clean, safe and affordable water  Increased dam building for multipurpose water schemes, and their costs and benefits  • Case study of contemporary dam building expansion in one major drainage basin  (Site-C Dam, Peace River, British Columbia) | *History Slam:*  *Breaching the Peace (episode 117)* | There are a couple things that are universal in political campaigns. Candidates will talk about creating new jobs and stress the need to leave a legacy for our kids and grand-kids (we do all for the kids, after all). In recent years, with environmentalism becoming increasingly popular politically, politicians have combined these two things in an effort to create green jobs. This has included everything from wind turbines to solar farms to hydro-electricity. It’s not so simple, however, as the concept of green energy and green jobs needs further examination.  One such example comes from the Site C Dam in the Peace Valley of Northern British Columbia. In 2010, the provincial government announced its plan to build a new dam, the third one on the river. In promoting the project, the government highlighted new jobs and green energy as key benefits to the project. For many local to the area, however, the project’s benefits were not so clear cut.  For many First Nations in the area, the dam would destroy land significant from both a cultural and ecological value. At the same time, there were questions about the province’s need for more hydro-electric energy. | <http://activehistory.ca/2018/06/history-slam-episode-117/> |
|  | Various points in this optional theme | ***Your Wetlands: A Project of the San Francisco Bay Joint Venture*** | This is a website full of useful (and short) podcasts relating to this topic. Most podcast episodes are focused on the SF Bay area. Topics range from flood mitigation to wetland management and biodiversity. | <https://www.yourwetlands.org/podcasts.php?fbclid=IwAR1zhp1p2ndjob5BwDTnYYyn4qaq6fXQ4XA41_1teieZZO6dwxee0PAAdB0> |
|  |  | ***We Are Rivers*** | Podcast series mainly focusing on the Colorado River. | <https://www.stitcher.com/podcast/american-rivers/we-are-rivers> |
| ***Optional theme D - Geophysical hazards*** | | | |  |
| **Geophysical systems** | Characteristics of earthquakes (depth of focus, epicentre and wave types) caused by varying types of plate margin movement and **human triggers (dam building, resource extraction);** | *BBC – Radio Four:*  *How we are causing some earthquakes* | Gareth Mitchell talks to Gillian Foulger of Durham University about HiQuake, the world's largest database of human-induced earthquakes. Professor Foulger and her colleagues have so far compiled close to 750 seismic events for which there are reasonable cases to be made for anthropogenic triggers. Triggers include mining operations, fossil fuel extraction, reservoir filling, skyscraper construction and tunnelling. Among the surprises is the fact that the U.S. state of Oklahoma is more seismically active than California because of quakes and tremors set off by the local oil and gas industry. | <https://www.bbc.co.uk/sounds/play/p05jhkwv> |
|  | Characteristics of earthquakes (depth of focus, epicentre and wave types) caused by varying types of plate margin movement and **human triggers (dam building, resource extraction);** | *BBC – Science in Action:*  *Geothermal Activity and Earthquakes* | New research suggests that an experiment in geothermal energy may be linked to an earthquake that hit the town of Pohang in South Korea last year. The usually geologically stable country also experienced another quake the year before. Roland Pease speaks to Dr Rob Westaway, a hydraulics engineer at the University of Glasgow who was involved in the geothermal operations, which included pumping water down to deep hot rocks and who is now investigating if there could be a link. | <https://www.bbc.co.uk/sounds/play/w3cswmp8> |
|  | Characteristics of earthquakes (depth of focus, epicentre and wave types) caused by varying types of plate margin movement and **human triggers (dam building, resource extraction);** | *BBC – Science in Action:*  *Earthquakes in Oklahoma* | Between 1976, when good recordings of earthquakes stated to be kept, up until 2008, Oklahoma State would experience on average, one magnitude three quake per year. But recently there have been many more earthquakes. Geophysicist Professor Katie Keranen from Cornell University has just published research in the journal Science that shows this huge upswing in the number of earthquakes is probably due to waste water from oil extraction being pumped back into the ground – at just a handful of sites. | <https://www.bbc.co.uk/sounds/play/p021mxch> |
|  | Mechanisms of plate movement including internal heating, convection currents, plumes, subduction and rifting at plate margins | *BBC – Science in Action:*  *Predictable Patterns in Earthquake Activity* | Natural variations in the length of the day may influence the likelihood of strong earthquakes happening. The speed of the Earth's rotation can be changed by events in the core, or changes in ocean currents, so that the day grows or shrinks by just a thousandth of a second. But geologists have seen that years with longer days can also have several more strong earthquakes, and we're entering such a phase just now. One explanation they propose is that stress changes due to the speed variations might be enough to push vulnerable faults beyond their limit. | <https://www.bbc.co.uk/sounds/play/w3csvrgs> |
|  | Characteristics of earthquakes (depth of focus, epicentre and wave types) caused by varying types of plate margin movement and human triggers (dam building, resource extraction) | *BBC – Science in Action:*  *Mexican Earthquake* | This week Mexico suffered its second major Earthquake in less than 14 days. The latest earthquake registered 7.1 magnitude and has caused widespread damage in the capital Mexico City, resulting in hundreds of causalities as buildings collapsed around the city. We speak to seismologist Dr Stephen Hicks from the University of Southampton about the geological reasons Mexico is susceptible to earthquakes; why have we seen two large earthquakes in such a short period of time; why the most recent earthquake was more destructive than the last, and did the first earthquake trigger the second. | <https://www.bbc.co.uk/sounds/play/w3cstzrt> |
|  | Characteristics of earthquakes (depth of focus, epicentre and wave types) caused by varying types of plate margin movement and human triggers (dam building, resource extraction) | *BBC – Science in Action:*  *Italian Earthquakes Are Part of a Sequence* | Geologist Ross Stein talks Roland through the geology behind the latest series of earthquakes in Italy. What connects them? And what danger still lurks? | <https://www.bbc.co.uk/sounds/play/p04d8k62> |
|  | Characteristics of volcanoes (shield, composite and cinder) formed by varying types of volcanic eruption; and associated secondary hazards (pyroclastic flows, lahars, landslides) | *BBC – Science in Action:*  *Mount Sinabung* | Mount Sinabung, on the Indonesian island of Sumatra, has been erupting since September 2013. Last weekend at least 16 people, who had reportedly gone into red evacuation zones, were killed after pyroclastic surges flowed down the side of the volcano. David Rothery, professor of Geosciences at the Open University explains why these pyroclastic flows are so deadly. | <https://www.bbc.co.uk/sounds/play/p01qypnj> |
| **Geophysical hazard risks** | Geophysical hazard risk as a product of economic factors (levels of development and technology), social factors (education, gender), demographic factors (population density and structure) and political factors (governance) | *BBC – The Inquiry:*  *How Do We Stop People Dying in Floods?*  \*This podcast connects to other topics (climate change, freshwater), but its discussion of risk perception makes it very useful here even though it does not focus specifically on geophysical hazards.\* | Do we have the power to avoid the natural forces of intense rainfall? With rising sea levels and the threat of climate change, the risk of death due to floods seems an insurmountable challenge. But there are some surprising facts in the figures on flood deaths. In developed countries like the US, more men die in floods than women and it is 30% of white men who are of particular concern.  We hear from four expert witnesses from across the globe, who share different options for change. Their ideas are both obvious as well as innovative, both low cost for use in developing countries like Bangladesh and high-tech like in the Netherlands. We also hear from the one place in the world which seems to be saving more lives in the face of devastating floods and storm surges than anywhere else on the planet. | <https://castbox.fm/episode/id468576-id50473183?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
| **Hazard risk and vulnerability** |  | *BBC – Science in Action:*  *Why Speed Matters in Earthquakes* | Last September’s earthquake in Indonesia hit the Sulawesi city Palu and caused a tsunami – yet conventional analysis suggests it simply wasn’t powerful enough to cause the damage it did. A new analysis shows that the quake was fast, about 4 times the speed of sound and unusually wasn’t slowed down by the objects in its way. The narrow shape of the Palu bay also contributed to the tsunami, amplifying its effects. | <https://www.bbc.co.uk/programmes/w3cswmqq> |
|  |  | *BBC – Science in Action:*  *Sulawesi – Earthquake, Tsunami, Volcanic Eruption* | The Indonesian Island of Sulawesi has been battered by natural forces. First an earthquake, followed by a devastating tsunami and now a volcanic eruption. Science in Action looks at the multiple geological factors that put the people of Sulawesi in such danger. | <https://www.bbc.co.uk/programmes/w3cswmq0> |
|  |  | *BBC – Science in Action:*  *Hazard Mapping the Guatemalan Volcano* | Volcanologist Eliza Calder explains why the eruption of Volcán de Fuego in Guatemala on 3rd June was so devastating. It left at least 110 people dead and over 200 people missing. It’s thought that the local populations were so acclimatised to the rumblings and explosions of the ‘persistently active’ volcano, that they were slow to take action when it violently erupted. | <https://www.bbc.co.uk/sounds/play/w3cswmpj> |
| **Future resilience and adaptation** | * Global geophysical hazard and disaster trends and future projections, including event frequency and population growth estimates; * Pre-event management strategies | *Freakonomics:*  *Why Can’t We Predict Earthquakes?* | We talk to a U.S. Geological Survey physicist about the science -- and folly -- of predicting earthquakes. There are lots of known knowns; and, fortunately, not too many unknown unknowns. But it's the known unknowns -- the timing of the next Big One -- that are the most dangerous. | <https://castbox.fm/episode/id1356283-id83207431?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Pre-event management strategies | *BBC – Science in Action:*  *Detecting earthquakes with Fibre Optics* | Los Angeles is famously earthquake prone, but it is also known for its technological advancement, being close to the heart of the computer industry. Seismologists have developed a new system which uses redundant capacity on fibre optic networks across the city to detect earthquakes. | <https://www.bbc.co.uk/programmes/w3cswmqr> |
|  | Pre-event management strategies | *BBC – Science in Action:*  *Early Warning for Landslides* | A new research collaboration has been launched to look at ways to get early warning of landslides in the mountainous regions of south west India. The hill country of the Western Ghats suffer regular and deadly landslides, partly because they encounter a double monsoon season each year. An early warning system that factors in weather, topography and the geology of the region is being developed. | <https://www.bbc.co.uk/sounds/play/w3csvrgy> |
|  | Post-event management strategies | *BBC – Science in Action:*  *Nepal Earthquake* | Experts had long been expecting a devastating earthquake in Nepal - the Himalaya are being squeezed at 2cm a year by tectonic forces, as India and Asia collide. The faults were bound to fail at some time, but at what time? Science cannot tell. But science can help in the immediate aftermath - by showing how bad the shaking has been, where it was worst, and where the victims may be found. Roland Pease reports on the efforts to get help delivered as quickly as possible to the places it is most needed - whether it's in damaged buildings, or beneath deadly landslides. | <https://www.bbc.co.uk/sounds/play/p02psvj6> |
| ***Optional theme G – Urban Environments*** | | | |  |
| **The variety of urban environments** | Good intro to the theme | *Freakonomics:*  *Why Cities Rock* | Could it be that cities are "our greatest invention" -- that, despite a reputation as black-soot-spewing engines of doom, they in fact make us richer, smarter, happier and (believe it!) greener? | <https://castbox.fm/episode/id1356283-id83207425?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Factors affecting the pattern of residential areas within urban areas, including physical factors, land values, **ethnicity** and planning | *Isn’t that Spatial:*  *Immigrant Communities* | We are quite familiar with the historical immigrant communities of older American cities such as Little Italy, numerous Chinatowns, a German Village here, a Slavic Village there, etc. These places have become landmarks in many of our cities.  We also continue to see geographically clustered communities spring up from newer immigrants in cities where you might not expect it. On this episode, we’ll look at how these older immigrant enclaves emerged and explore the newer trends in immigration in our cities and their impact. …Aside from giving us the ability to have bagels for breakfast, sushi for lunch, and molé for dinner in any town worth its salt. | <https://isntthatspatial.net/episodes/2018/10/1/immigrant-communities> |
| **Changing urban systems** | Urbanization, natural increase and centripetal population movements, including rural–urban migration in industrializing cities, and **inner city gentrification in post-industrial cities** | *Isn’t that Spatial:*  *On Gentrification* | On this episode, we'll try to define the slippery term "gentrification" that refers to neighborhood change, for better or worse. Where does gentrification happen? How do we know it’s happening or when it’s coming? And what can we do about it anyway? | <https://isntthatspatial.net/episodes/2019/1/4/on-gentrification> |
| **Urban environmental and social stresses** | Urban microclimate modification and management, including the urban heat island effect, and air pollution patterns and its management  • Case study of air pollution in one city and its varying impact on people | *BBC – The Inquiry:*  *Can Delhi Clean Up Its Air?* | Delhi is one of the worst polluted cities in the world. Radical ideas like skyscraper-sized air purifiers are being proposed to clean the smog – can they work? There are lessons to be learned from other cities around the world about how to manage emissions. But will any city’s air ever be really clean? | <https://castbox.fm/episode/id468576-id95565580?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Managing the impacts of urban social deprivation, including the cycle of deprivation and geographic patterns of crime | *CBC – Ideas:*  *Lonely Together: The plight of urban isolation* | There have never been as many cities across the world as there are right now, nor with such high populations. Yet urban loneliness is a virtual pandemic, and one with huge social, medical and financial consequences. Why are cities the new capitals of isolation? | <https://castbox.fm/episode/id1408841-id136460784?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Contested land use changes, including slum clearances, **urban redevelopmen**t and the depletion of green space  • Detailed contrasting examples of two affected neighbourhoods and their populations  (Chicago, Boston) | *Isn’t that Spatial:*  *Urban Renewal’s Rise + Fall* | In a follow up to ITS010 on popular music’s odes to urban renewal, this episode covers what “urban renewal” actually was – and how it led to so much displacement and the destruction of so much good stuff in our cities. | <https://isntthatspatial.net/episodes/2018/10/1/urban-renewals-rise-fall> |
| **Building sustainable urban systems for the future** | Smart city design and the use of new technology to run city services and systems, including purpose-built settlements and retrofitting technology to older settlements | *Freakonomics:*  *How to Build a Smart City* | We are in the midst of a historic (and wholly unpredicted) rise in urbanization. But it's hard to retrofit old cities for the 21st century. Enter Dan Doctoroff. The man who helped modernize New York City — and tried to bring the Olympics there — is now C.E.O. of a Google-funded startup that is building, from scratch, the city of the future. | <https://castbox.fm/episode/id1356283-id83207838?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Smart city design and the use of new technology to run city services and systems, including purpose-built settlements and retrofitting technology to older settlements | *Wall Street Journal – The Future of Everything:*  *Smart Cities: Safer Living or Cyber Attacks?* | Urban areas around the world are increasingly equipped with sensors to track-and control-everything from traffic patterns to wastewater. But this increased connectivity and data collection opens us up to devastating hacks and unwanted surveillance. | <https://castbox.fm/episode/id1403410-id90158235?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Smart city design and the use of new technology to run city services and systems, including purpose-built settlements and retrofitting technology to older settlements | *BBC – The Inquiry:*  *Are smart cities dumb?* | Driverless cars powered by renewable energy whisking their healthy and happy citizens between gleaming skyscrapers, criss-crossing efficient roads. That’s the dream of many so called smart cities.  The trend for ‘smart cities’ has grown immensely over the last decade and their definition has evolved too. Hundreds are planned or are already being built around the world, in both rich and poor countries.  From Google’s Sidewalk city to Eko Atlantic in Nigeria, tech companies are seeking to tame our ever more urban world.  But critics worry that instead of being clever solutions they simply reinforce the existing poverty and inequality. How can a tech giant solve the problems of the developing world when people need water not wifi? We ask, are smart cities dumb? | <https://castbox.fm/episode/id468576-id134267950?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Resilient city design, including strategies to manage escalating climatic and geopolitical risks to urban areas | *Ted Talk:*  *Let's prepare for our new climate | Vicki Arroyo* | As Vicki Arroyo says, it's time to prepare our homes and cities for our changing climate, with its increased risk of flooding, drought and uncertainty. She illustrates this inspiring talk with bold projects from cities all over the world -- local examples of thinking ahead. | <https://castbox.fm/episode/id1025710-id49386688?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |
|  | Eco city design, including strategies to manage the urban ecological footprint | *Freakonomics:*  *Mass Transit Hysteria* | Adding more train and bus lines looks like an environmental slam dunk. Until you start to do the math. | <https://castbox.fm/episode/id1356283-id83207509?utm_campaign=android_old_share&utm_medium=dlink&utm_source=android_old_share&country=us> |