STREAM

CLIMATE CHANGE

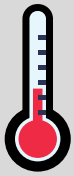
What is climate change and how will it impact coastal communities in Ireland and Wales

What is Climate Change ?

Climate Change refers to changes in the measurements of the earth's climate e.g. temperature, rainfall and wind that last for an extended period of time (decades or longer). The earth's climate has changed naturally over the history of the planet ranging from periods of extreme cold (Ice ages) to periods of prolonged warming. The major difference today is that our climate is being influenced by human activity through our emissions of greenhouse gasses. This is resulting in changes to the ocean and air temperatures, oxygen content in water, droughts, flooding, precipitation (mainly rain), sea-level rise and numerous other factors.

What are the main impacts on coastal communities?

Temperature: Increases in air and sea temperature will place pressure on coastal communities as marine species struggle to adapt, this alters the ecosystem and creates problems for fisheries and aquaculture.



Precipitation: Changes in patterns will result in periods of drought and flooding. Increased rainfall will result in nutrient loading to water bodies causing increased algal growth and changes in water circulation.

Storms: Variations in the direction and strength of wind could cause damage to coastal infrastructure and habitats due to storm surges, flooding and erosion leading to financial costs for coastal communities.

Sea-level rise: Warming temperatures cause the polar ice caps to melt causing a rise in sea level, leading to increased erosion and inundation damaging property, infrastructure, water resources and habitats.

Ocean Acidity: Emissions of carbon dioxide make the sea more acidic creating a difficult environment for certain plants and animals to survive in having a negative impact on fisheries, aquaculture and Biodiversity,

STREAMS ROLE

The STREAM project (Sensor Technologies for Remote Environmental Aquatic Monitoring) will accelerate the amount of information we gather from the coastal environment. STREAM will achieve this by deploying state of the art sensors measuring environmental parameters at remote monitoring sites in the SE of Ireland at Wexford Harbour, Bannow Bay and Dungarvan. STREAM will then design and test cost-effective sensors that will be deployed in the estuarine and marine environment around Ireland and Wales. this data will be made available live via STREAMS online portal.

Initial testing of a Temperature, pH and Nitrate sensors at the WIT arena, Waterford, Ireland.

Along with its monitoring efforts STREAM will inform stakeholders using its website, social media, reports, tool kits, and scientific literature. In doing so STREAM will:

- Contribute to the monitoring efforts of government bodies responsible for water quality in Ireland and Wales,
- Provide important information to Irish and Welsh policymakers,
- Develop climate change literacy in both countries,
- Create a coordinated effort between Ireland and Wales sharing ideas and practices.

This will increase the ability of coastal communities to adapt to climate change and mitigate the potential for negative effects in the future.

Sources:

IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.

Websites:

- https://naturalresources.wales/
- https://www.epa.ie/
- https://www.ipcc.ch/

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