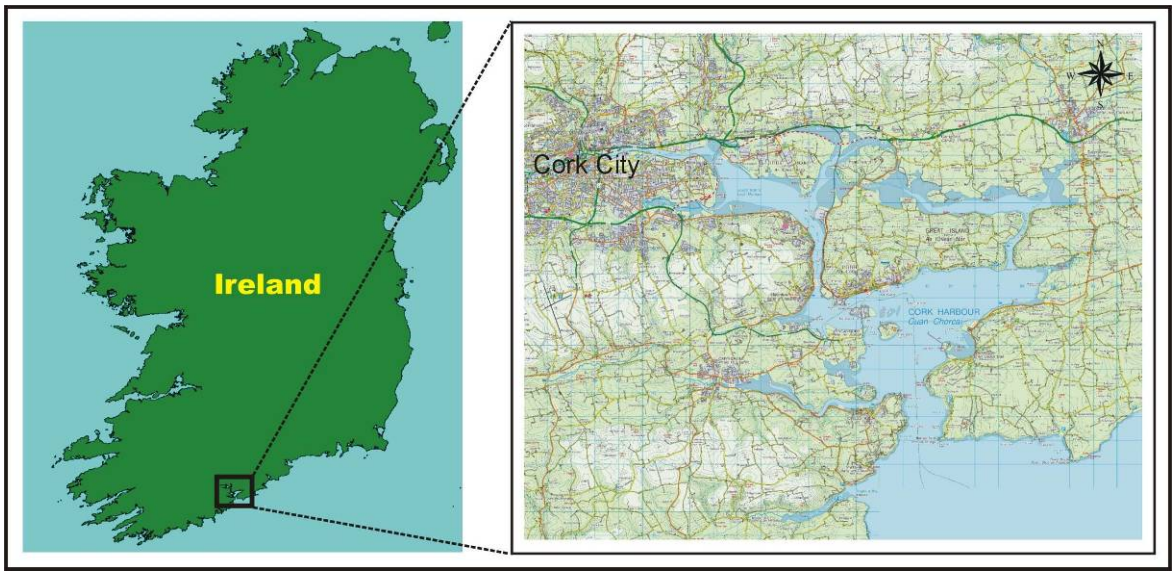
WT 7.8 CORK HARBOUR, IRELAND

1. Host Institution: National University of Ireland Cork. **Contact:** Valerie Cummins v.cummins@ucc.ie



2. Cork Harbour, a large natural harbour of strategic importance, is situated on the south coast of Ireland.

3. Characteristics

Marine System	Cork Harbour, with a surface water body of 100km^2, extends from the tidal influence of the River Lee to the narrow Harbour mouth. Cork Harbour is a large, sheltered, naturally deep-water harbour. Strong estuarine influences dominate the upper reaches of the Harbour in particular. The coastline is mixed, consisting of built infrastructure, shallow cliffs, intertidal mudflats, reedbeds, shingle and rocky foreshores, which are exposed by the tide (tidal range 3-4m). The bathymetry of the Harbour reflects the morphology of the coastline, with gentle slopes dropping to a depth of 28m near the mouth of the Harbour (11m in the channel which is maintained at that depth for navigation).
Watershed	Riverine inputs originate from the Lee, the Owenacurra, the Glashboy and the Owenabue. Freshwater inputs from the Lee are controlled by the dam upstream at Iniscarra. Nutrient loading is primarily from non-point agricultural sources distributed throughout the catchment, but primarily in the upper reaches of the Lee estuary. Point source discharges have been reduced by the recent Cork main drainage scheme.
Human Activities	While contemporary use of large tracts of the Harbour is marked by concentrations of **urban** populations (most significantly, Cork City – population ~123,000) and widespread chemical and pharmaceutical **industries**, much of the coast remains unspoilt and characterised by rural **agricultural** land use or **protected habitats**. It's sheltered environment and deep-water channels make Cork Harbour an ideal location for **shipping** and **recreational boating** activities. The physical geography of the Harbour on the south coast of Ireland provides a strategic location for the Port of Cork situated in close proximity to the main shipping line to Northern Europe. **Tourism, marine heritage, fishing, and waste management** are other key human activities associated with the harbour.
Impact Responses	Eutrophication, water pollution, contaminated land, flooding and use conflict.

4. Policy

Policy issues	Dealing with remediation and redevelopment of contaminated **coastal brownfield sites**. Dealing with contamination from **heavy metals leaching** into the Harbour from the disused Irish Steel Plant and from the Irish Fertilisers Industry plant. Potential impacts of the Cork Main Drainage scheme on wading bird populations due to **changing nutrient levels**, recreational activities, and overall development of the Harbour. Issues of **coastal flooding and erosion** (especially flood impacts on Cork City). Identifying the **recreational carrying capacity** of the Harbour. The potential impact of the **Port of Cork** Strategic Development Plan which, aims to rationalise existing port activities and make provision for additional port activities that need land reservations.
Policy changes	The implementation of the Cork Main Drainage Scheme in response to the Urban Wastewater Treatment Directive. Cork County Development Plans – zonation of landuse for housing, industry, recreation, waste disposal (including incineration) and transport. IDA (Industrial Development Authority) development policy.

5. Stakeholders and Institutional Governance

Major organisations	**Local to National Authorities** Cork County Council, Cork City Council, Cobh Urban Council, Department of Communications, Marine and Natural Resources, National Parks and Wildlife Service, Irish Naval Service, Irish Coastguard, Department of Environment, The Marine Institute, Bord Iascaigh Mhara, Department of Community, Rural and Gaeltacht Affairs, Environmental Protection Agency. **Industrial/Economic users** Port of Cork Company, multi national pharmaceutical companies (e.g. Pfizers, ADM, Novartis), Whitegate oil refinery, Electricity Supply Board power generating station, cruise ship sector, fisheries sector (especially angling).
Other leading organisations	

6. Partner Collaboration

SPICOSA Partner Collaborations.	Partners: **CU** Cardiff University, Marine and Coastal Environment Group, (Dr. Hance Smith) **ENVISION**, UK (Dr. Jeremy Hills)

7. Systems Studies

Long time series	Bathymetric data – initial admiralty charts go back over 100 years, with regular bathymetric survey data available over the past 30 years. Tidal records – over 25 years. Marine biotoxins and phytoplankton data- >20 years Geophysical data (sediment samples) - >30 years Water quality data >10 years
Research Projects	The COREPOINT (Coastal Research and Policy Integration), INTERREG IIIB, initiated in 2004, uses Cork Harbour as a strategic study site. Local policy issues are investigated through enhanced scientific understanding of natural processes within the harbour. These include reserach into physical coastal processes influencing vulnerability to flooding. Cork Harbour has also been mapped as part of the Irish National Seabed Suvey. The resulting data is used in a national project to advance the development of integrated coastal zone maps. The Blue City Project - use of Information Technology to study Cork City's water resources, (Higher Educational Authority funded), is also nearing completion.
Socio-economic study	Several socio-economic studies have been undertaken including: studies relating to Port of Cork Strategic Development, the Economic Impact of the Port of Cork's Cruise Traffic, the Economic Contribution of the Port of Cork to the Irish Economy and a case study on the Economic Significance of Ford Cork Week 1996 Sailing Regatta.