



## Section 1: General Policies

The policies within this Plan are designed to guide all marine and coastal users in terms of proposed and existing development(s) and activities. Users of this Plan must also comply with the National Marine Plan and other relevant legislation.

The general policies within this section of the Plan provide a framework for the sustainable development and use of the marine and coastal environment. The policies within this section can be considered cross-cutting, as they are all potentially relevant to any proposal for development or activity by any sector or user of the marine and coastal environment and should be adhered to in advance of the relevant sectoral policy. The chapters are laid out in the same order as they appear in the National Marine Plan.

Each chapter follows the same format, this includes:

- A context which sets out a summary of the main information relevant to the policy area. More information on each of the areas can be found within the [Clyde Marine Region Assessment](#).
- Objectives and policies; objectives provide a measurable strategic aim or goal for each policy area and policies which will deliver the objectives are set out underneath.
- Maps are included at the end of the chapter. For the latest available spatial data, see [National Marine Plan interactive](#) (NMPi). It is recommended that NMPi is used in conjunction with this Clyde Regional Marine Plan.
- Links to further information on the policy area.



## Chapter 4: Coastal Processes, Coastal Flood and Storm Damage Alleviation

### Clyde Marine Region Context

Sea-level rise will increasingly affect many parts of the Clyde Marine Region's coast, bringing increased risks of estuarine and coastal erosion and flooding. In some places this may threaten important infrastructure, coastal communities and natural assets. Mean sea level is projected to be at least 47 cm higher in 2080 than in 2008 around the Region<sup>1</sup> and the latest projections are set to increase this figure. At the coast the impacts may be further exacerbated through increased storm wave heights and increases in river and surface water flooding. Natural coasts dynamically respond to these risks and the best management options may involve making space on land with enough room for coastal processes to operate. The coastal zone can be considered as a resource extending across the land-sea interface. In places, the coastal zone acts to help protect against the increased threat of coastal flooding.



Saltmarsh near Bowling.

The Clyde Marine Region has many different types of artificial and natural coast; parts of the Region have artificial man-made structures such as quay walls and in other places rocky shores provide coastal defence. Saltmarsh, beaches or sand dunes also provide coastal defence in places, but can be continually changing through natural processes. Safeguarding those areas where there are natural assets, such as saltmarsh or sand dunes, allows nature to provide coastal flood and storm alleviation along with other benefits which include water purification, fish and shellfish nurseries, carbon sequestration and opportunities for recreation and tourism. It is also important to ensure that these habitats themselves can adapt to climate change and allow space for this further inland as appropriate. The Clyde Marine Region has several existing flood and storm damage alleviation schemes in place, however, these may stop functioning effectively at some point in the future. Where it is not possible to use natural assets for coastal flood and storm alleviation, it is recommended that traditional hard engineering solutions are greened wherever possible.

For further details on this issue, see Chapters 3.2 and 3.4 of the [Clyde Marine Region Assessment](#).

### Objective



**Objective CP 1** **Current and new coastal zone and marine development(s) and activities, and land-based development(s) and activities near the coast, are resilient to the dynamic nature of the coast, including the impacts of climate change, using natural assets and soft engineering where possible.**

MEASUREMENT: Marine licence and Town and country planning determination processes as applicable. Integration of shoreline management planning within Local Development Plans.

<sup>1</sup> UK Climate Projections 09 as included in SNH Commissioned Report No. 891: Impacts of sea-level rise and storm surges due to climate change in the Firth of Clyde. Note that the latest [UK Climate Projections 18](#) are now available.

**Policy – Authorisations and consents**

**Policy CP 1** Applications for new development(s) or for infrastructure renewal(s) on land near the coast or at the coast and/or in the marine environment will be supported where they can demonstrate that the following have been fully taken into account:

- the latest available UKCP<sup>2</sup> sea-level rise and flood risk projections, including wave overtopping impacts where possible, relevant to the full life-span of the development, including any decommissioning/remediation required,
- broader future climate projections and risks and opportunities identified within the UK national, regional and local climate change risk assessments,
- the Scottish Environment Protection Agency's Development Management Guidance, the relevant Local Flood Risk Management Plan and any relevant Shoreline Management Plan,
- sediment dynamics within the relevant coastal cell, including historical trends as indicated in outputs of the Dynamic Coast project and current or future anticipated dynamics,
- any potential exacerbation of flooding or coastal erosion in the wider area,
- protection and use of natural assets for coastal protection, including through options for managed realignment, and allowing space for the natural assets themselves to adapt to climate change, and
- opportunities for Integrated Green Grey Infrastructure<sup>3</sup> where natural assets cannot be used for flood alleviation.

**Policy CP 2** Natural or man-made coastal zone and marine features which provide or could provide flood defence in the future should not be removed without due consideration of future flood risk and should only be altered in accordance with Policy CP 1. Removal of man-made coastal defence materials will only be supported when it can be demonstrated that there are no significant adverse impacts for the environment or landscape/seascape. Any positive impacts for the environment or landscape/seascape should be identified and delivered, for example where removal may offer a realignment option to allow accommodation space for natural coastal readjustment and improve long-term resilience.

**Policy CP 3** The installation of new or replacement flood defences and coastal erosion and flooding alleviation works will be supported if coastal erosion or flooding threatens existing public infrastructure, important built development or significant natural or cultural heritage features, where there is a significant safety risk and where relocation options are not feasible. Where this has been demonstrated, planning applications for developments should comply with Policy CP 1.

---

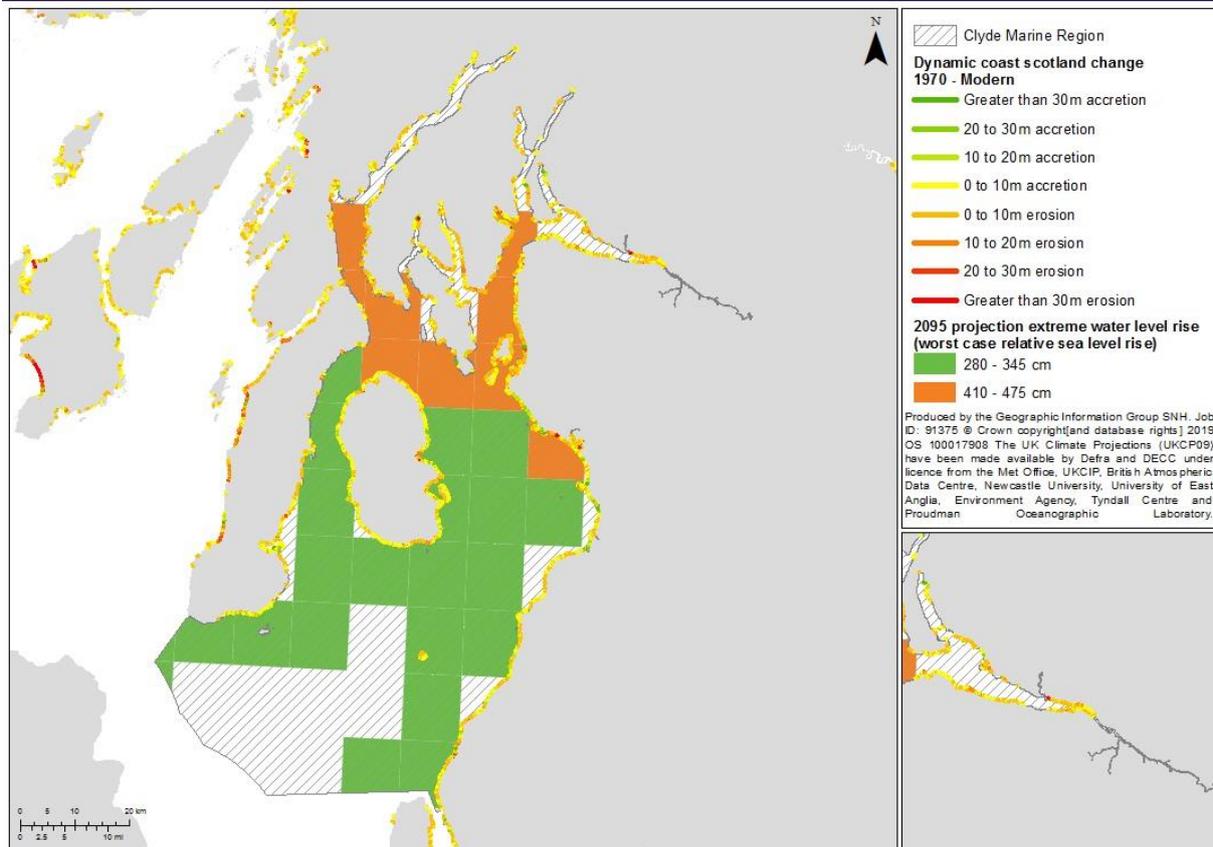
<sup>2</sup> [UK Climate Projections](#)

<sup>3</sup> Integrated Green Grey Infrastructure refers to greening the greyest parts of our towns, cities or coasts that must remain largely grey for their primary function

## Policy – Management

**Policy CP 4** Land use, open space, and development plans should consider the coastal zone as a unit and take into account the potential impacts of current and future sea-level rise, storminess and coastal erosion risk when developing or adjusting the zoning and strategic development vision for coastal areas. Where possible, low-lying areas of vacant and derelict coastline should be assessed for their potential to provide accommodation space for human communities and natural ecosystems to adapt to climate change. Authorities are encouraged to develop strategies for pro-active management to reduce the risk of coastal erosion and flooding, for example through integration of shoreline management planning into land use planning.

**Map CP 1 – UKCP09 sea-level rise projections and National Coastal Change Assessment coastal position projections. Note: UKCP18 data will be used when available.**



These maps are indicative only. For up-to-date mapping with interactive features, visit [National Marine Plan interactive](#).

**Further information**

[SEPA’s Development Management Guidance: Flood Risk](#) provides advice to planning authorities. The [Planning Background Paper: Flood Risk](#) provides context for the Guidance document.

Scottish Natural Heritage: [‘Impacts of sea-level rise and storm surges due to climate change in the Firth of Clyde’](#), commissioned report No. 891.

[UK Climate Projections](#) website.

[Clyde and Loch Lomond, Ayrshire, Highland & Argyll Local Flood Risk Management Plans](#)

[Ayrshire Shoreline Management Plan](#)

[Dynamic Coast: Scotland’s Coastal Change Assessment](#)

[Climate Ready Clyde](#) , in particular the [Climate Risk and Opportunity Assessment \(2018\)](#)

Naylor, LA., Kippen, H, Coombes, MA., et al. (2017). [Greening the Grey: a framework for integrated green grey infrastructure \(IGGI\)](#). A University of Glasgow report. Appendix 4: Coastal.