



University of the
Highlands and Islands
Oilthigh na Gàidhealtachd
agus nan Eilean



North Highland College
University of the
Highlands and Islands

MARINE ENERGY – RESOURCE AND RISK

- Tidal resource assessment;
wave climate assessment
- Device-environment physical
interaction (measurement
and modelling)
- Modelling (including
turbulence & array effects)
- Climatology including
weather windowing (for
installation & maintenance).

MARINE ENERGY – ENVIRONMENTAL AND ECOLOGICAL INTERACTIONS

- Fish habitat use and migrations
(Pentland Salmon Initiative)
- Seabird ecology
- Benthic interactions
- Bio-fouling and non-native species
- Underwater noise
- Sediment distributions and
dynamics.

RENEWABLE ENERGY – SOCIO-ECONOMICS

- Community engagement
- Energy balancing at regional
and national scales
- Relationship between
climate change and energy.

BIO-ENERGY

- Biomass supply chains
(marine and terrestrial)
- Development of bio-energy tools
- Life-cycle analysis and carbon
assessment.

MODELLING

- Coastal hydrodynamics:
circulation
and tidal currents
- Waves: climate and extremes
- Ecological: collision risk,
population, movement,
marine dispersal.

FIELD SURVEYS

- Settlement panels for biofouling
and non-natives
- Seabird tagging & tracking, visual
observations, camera deployments
- Salmon smolt tagging & tracking
- Underwater imagery: ROV, drop-
down cameras and Sidescan Sonar
- Physical oceanography:
ADCP, CTD, wave buoys,
Xband radar, drifters, tide gauges
- Unmanned Aerial Vehicle (UAV)
surveys with digital and
near-infrared cameras
- Seabed mapping:
multi-frequency sonar.

OUR GOAL:

To develop an internationally-recognised hub of multi-disciplinary renewable energy and related environmental research, informing policy-making and regulation, and contributing to the growth of a sustainable renewable energy sector.

Biofuels

Energy Balancing

Migratory fish ecology

Seabird Ecology

Hydrodynamic and
Wave Modelling

Ecological Modelling

Remote Sensing

Coastal Physical Oceanography

Seabed Characterisation
and Sediment Dynamics

Benthic Habitat
Mapping and Ecology

Bio-fouling and
Introduced Species

[w. merikafp7.eu](http://w.merikafp7.eu)

[e. merikafp7@uhi.ac.uk](mailto:e.merikafp7@uhi.ac.uk)

[@merikafp7](https://twitter.com/merikafp7)



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Highlands and Islands Enterprise
Iomairt na Gàidhealtachd 's nan Eilean