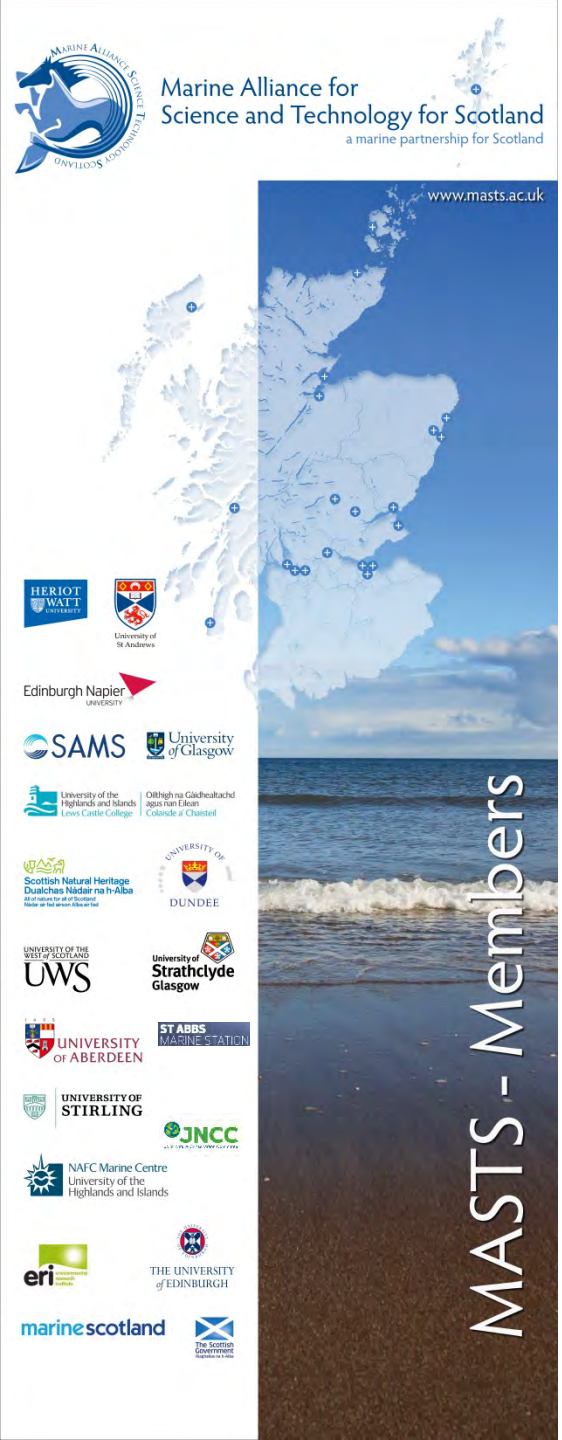


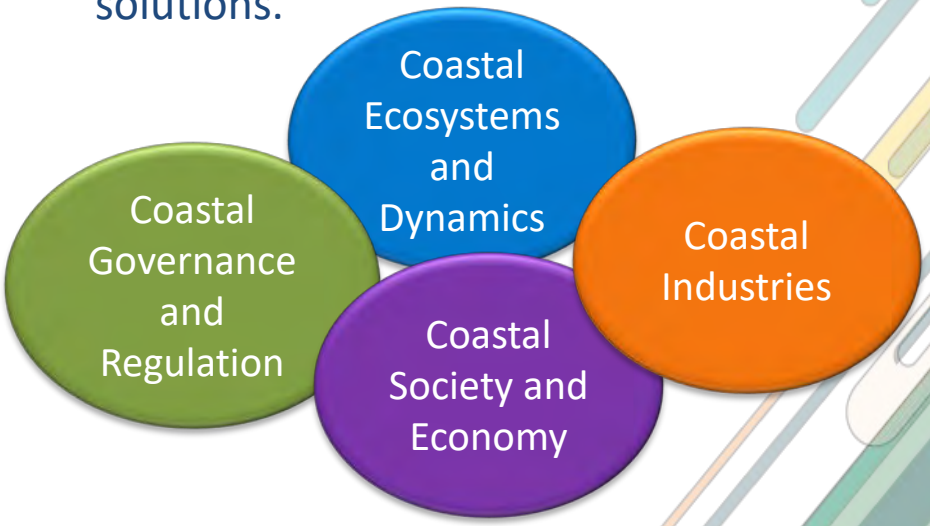
CLIPPER Presentation
4-7-18

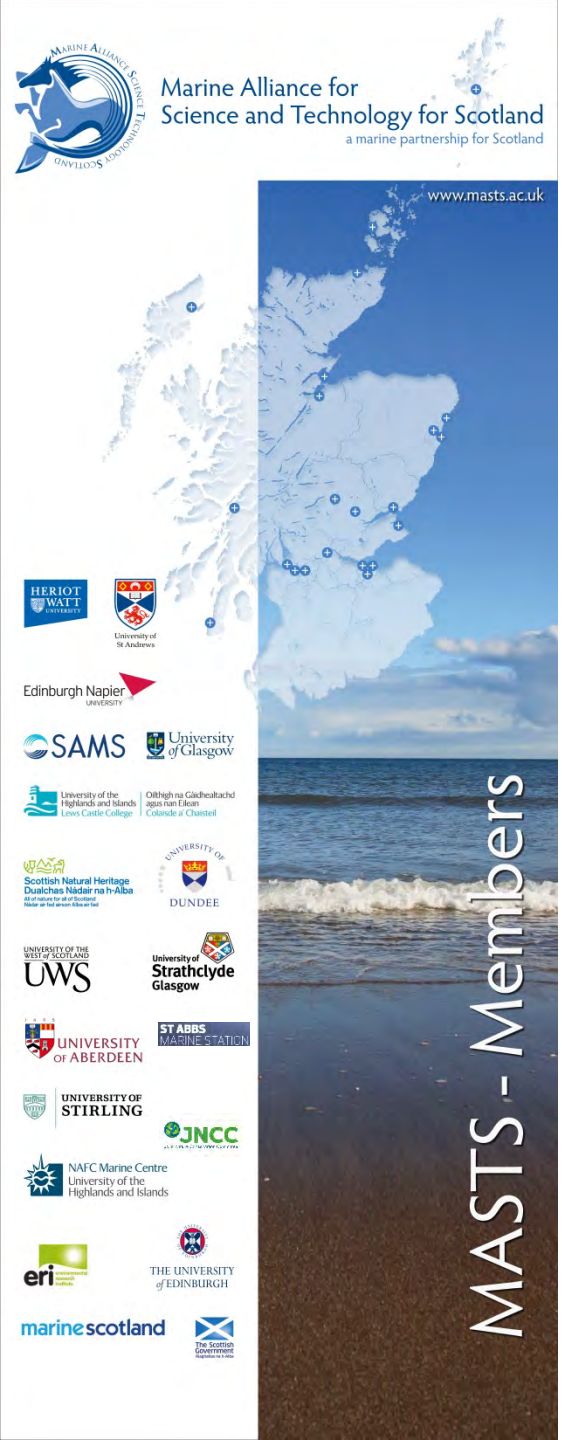
Marine Alliance for Science and Technology for Scotland - Overview

http://www.masts.ac.uk

Coastal Resources Management Group

- Optimising the sustainable management of our coastal environments is critical to the prosperity and well being of millions of people.
- Coastal change over the next 50 years as a result of climate change and sea level rise will have global impacts.
- These changes will have profound political, regulatory, environmental, societal, economic and security implications.
- Multidisciplinary and transdisciplinary research teams are needed to address this challenge and develop adaptive strategies, and applied solutions.





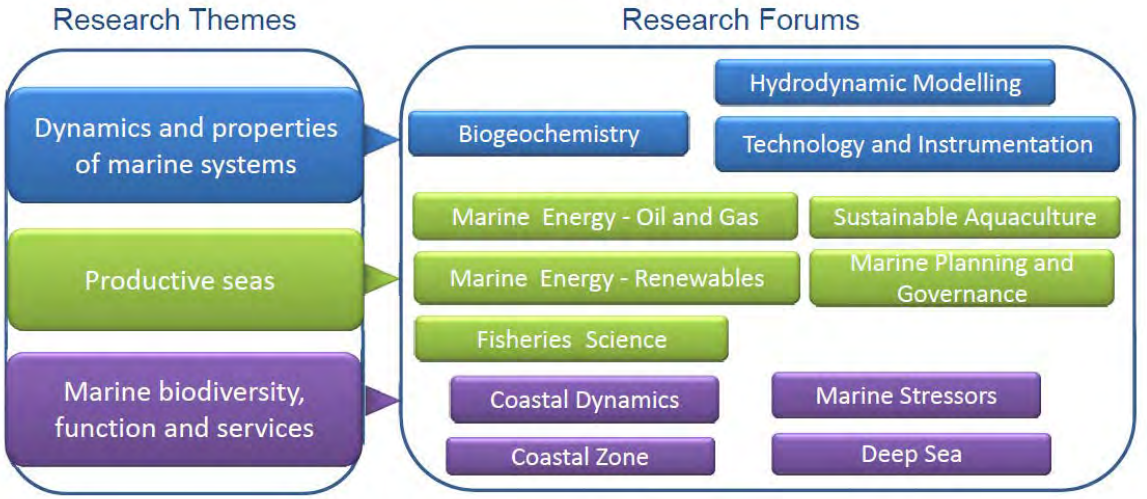
Marine Alliance for Science and Technology for Scotland - Overview

http://www.masts.ac.uk

MASTS – brings together Scotland's marine science capacity within a single organisation

- Ensures Scottish marine science remains **internationally competitive**
- Provides the **academic platform** and **knowledge for marine governance and commerce**

MASTS engages ~700+ researchers across 17 Universities, Research Institutes, Government and Non-Departmental Public Bodies



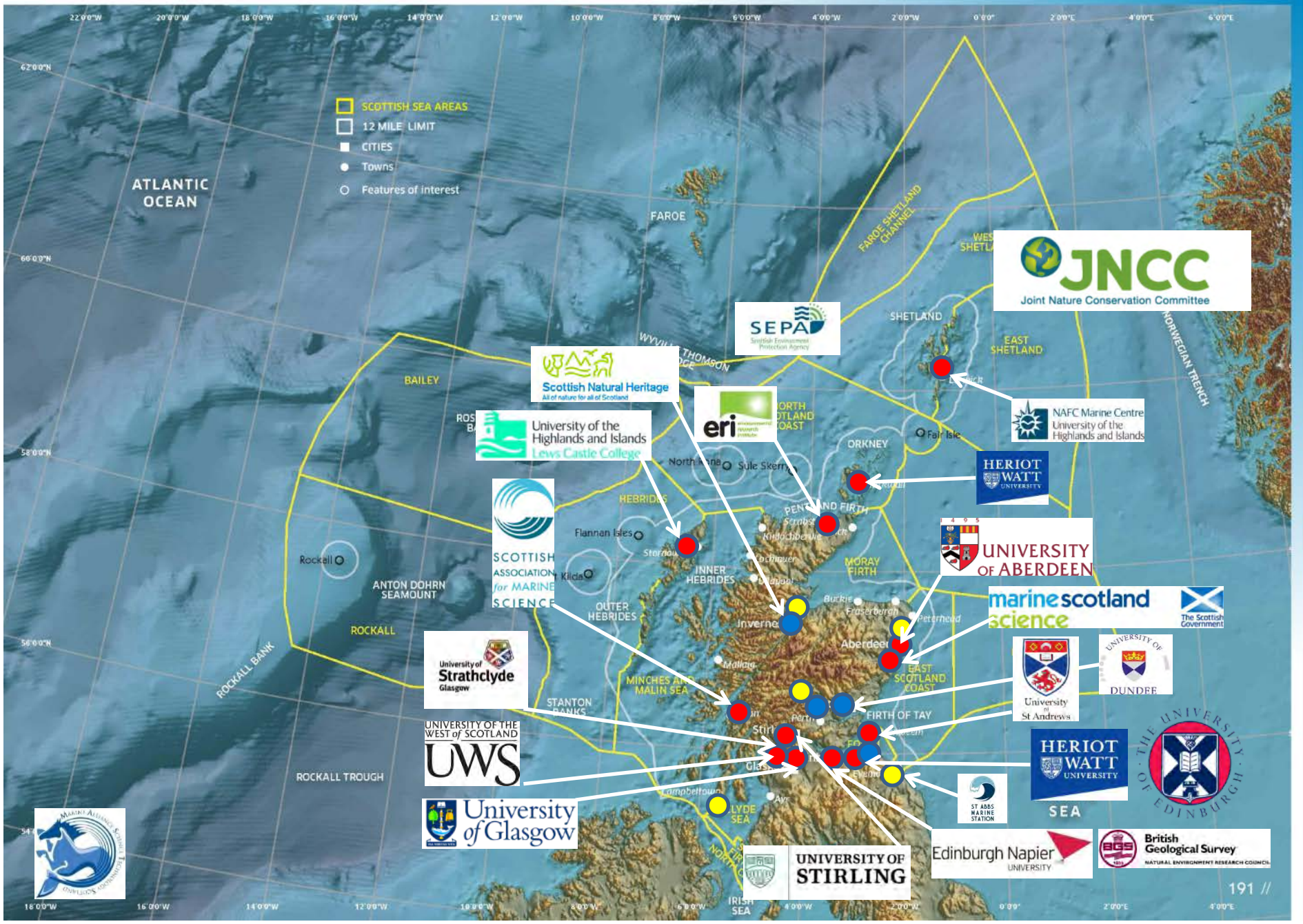
European MARINE BOARD Advancing Seas & Oceans Science

UK - Marine Science Co-ordination Committee (MSCC)

EMBRC EUROPEAN MARINE BIOLOGICAL RESOURCE CENTRE

marinescotland

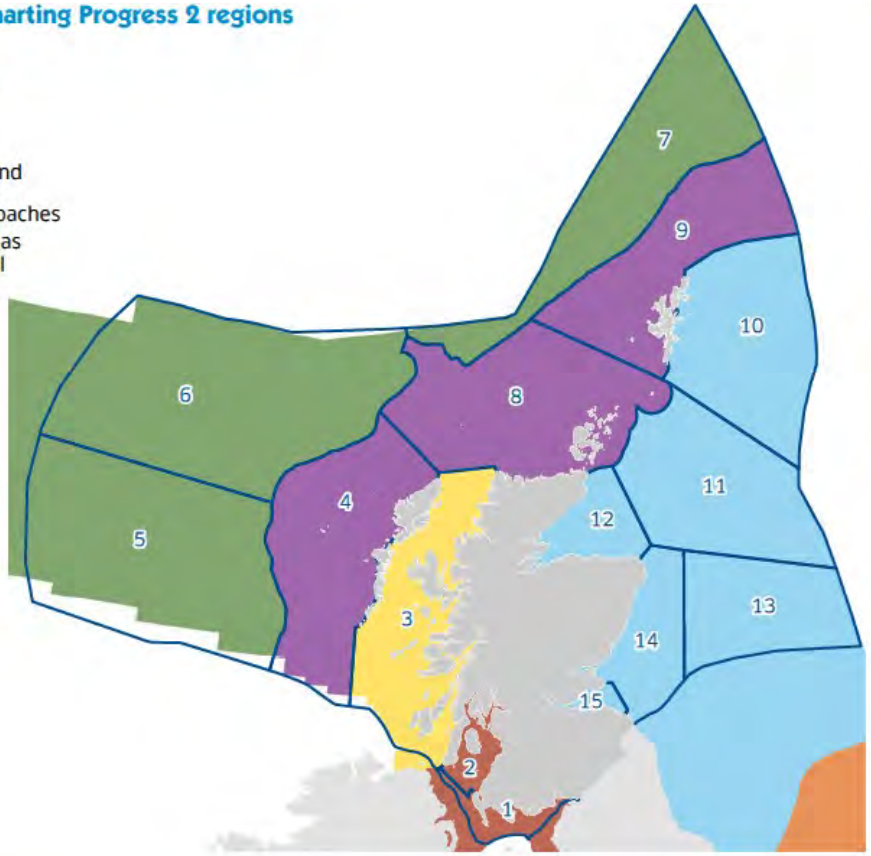
Marine Strategy Forum


SCOTTISH SEA AREAS
12 MILE LIMIT
CITIES
Towns
Features of interest
ATLANTIC OCEAN
FAROE
FAROE SHETLAND CHANNEL
NORWEGIAN TRENCH
SHETLAND
EAST SHETLAND
ORKNEY
Fair Isle
BAILEY
HEBRIDES
Flannan Isles
Rockall
ANTON DOHRN SEAMOUNT
ROCKALL
ROCKALL BANK
ROCKALL TROUGH
INNER HEBRIDES
OUTER HEBRIDES
MORAY FIRTH
EAST SCOTLAND COAST
FIRTH OF TAY
STANTON BANKS
LYDE SEA
IRISH SEA
JNCC
Joint Nature Conservation Committee
SEPA
Scottish Environment Protection Agency
Scottish Natural Heritage
All of nature for all of Scotland
eri
University of the Highlands and Islands
Lews Castle College
NAFC Marine Centre
University of the Highlands and Islands
HERIOT WATT UNIVERSITY
SCOTTISH ASSOCIATION for MARINE SCIENCE
UNIVERSITY OF ABERDEEN
marinescotland science
The Scottish Government
University of Strathclyde Glasgow
University of St Andrews
UNIVERSITY OF DUNDEE
UNIVERSITY OF THE WEST of SCOTLAND
UWS
HERIOT WATT UNIVERSITY
SEA
THE UNIVERSITY OF EDINBURGH
University of Glasgow
ST ABBS MARINE STATION
Edinburgh Napier UNIVERSITY
British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL
UNIVERSITY OF STIRLING
191 //

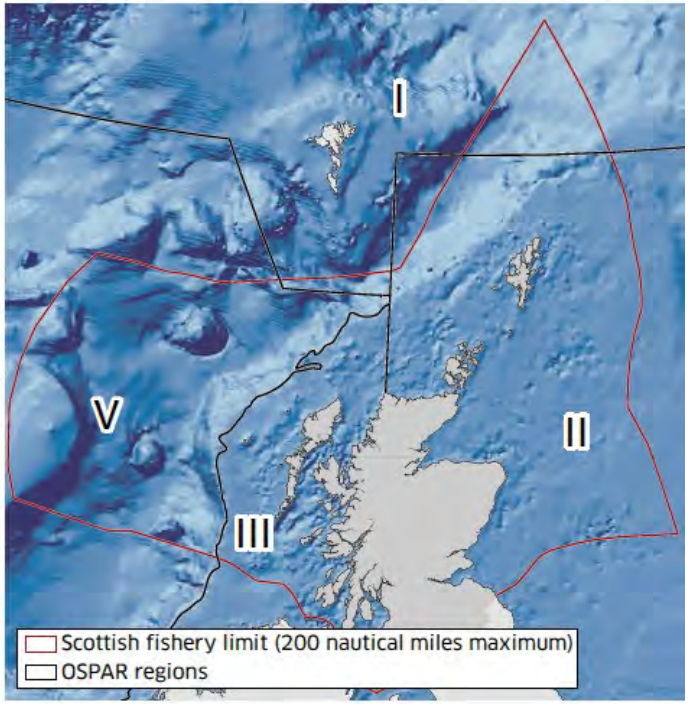
Scottish sea areas and Charting Progress 2 regions

Charting Progress 2 Regions
- Northern North Sea
- Southern North Sea
- Irish Sea
- Minches & Western Scotland
- Scottish Continental Shelf
- Atlantic North-West Approaches
- Sea areas used for this Atlas

1, Solway Firth, North Channel
2, Clyde
3, Minches and Malin Sea
4, Hebrides
5, Rockall
6, Bailey
7, Faroe Shetland Channel
8, North Scotalnd coast
9, West Shetland
10, East Shetland
11, Fladen
12, Moray Firth
13, Forties
14, East Scotland coast
15, Forth



OSPAR sea regions of the North East Atlantic



Facts about Scottish seas

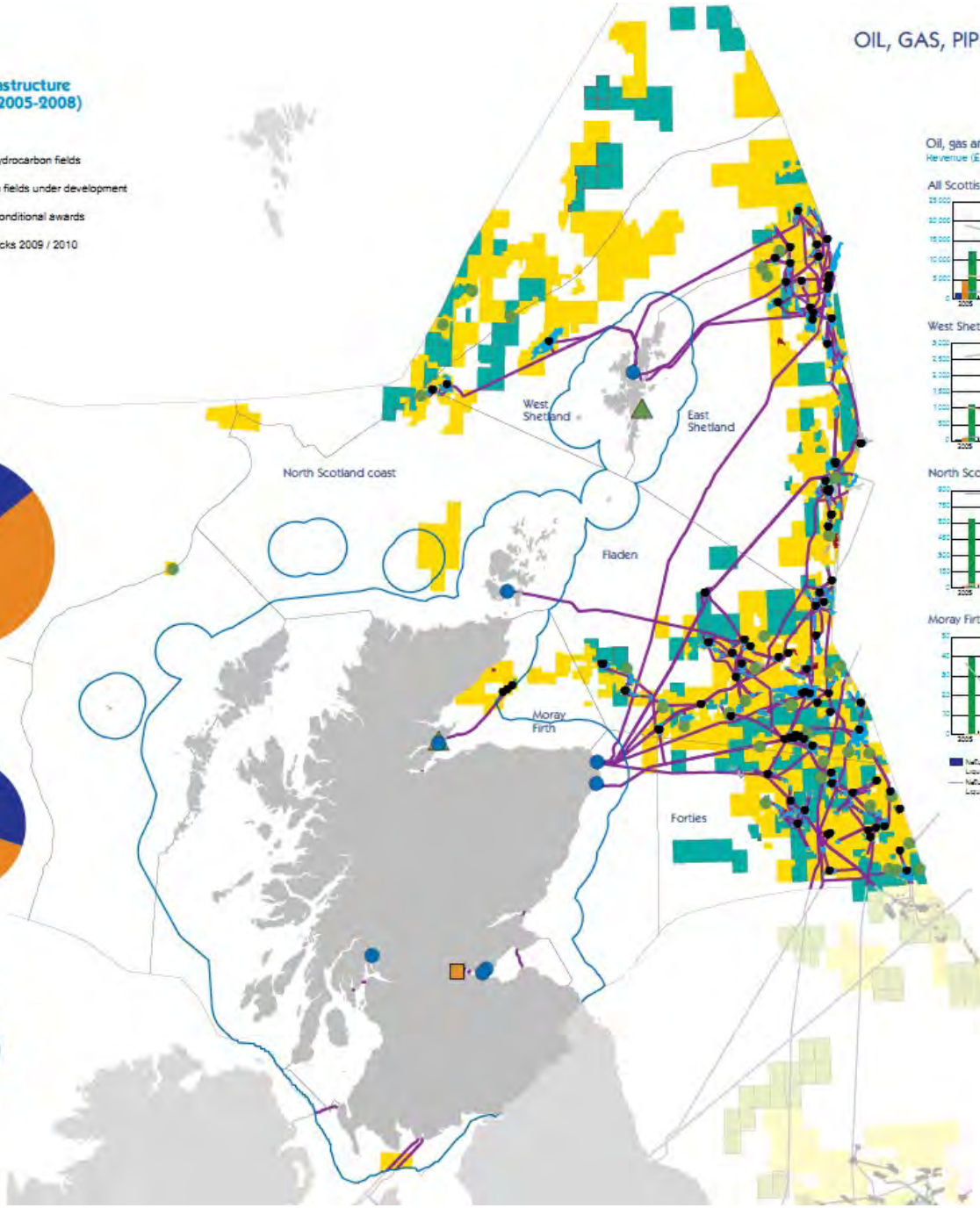
Coastline length (LW mark)* 18,002 kms	**Coastline length (HW mark)*** 18,672 kms	**Inhabited islands**** 118	**Uninhabited islands** in excess of 800
HW mark to territorial sea baseline (internal waters) (approx) 34,810 kms^2	**Territorial sea baseline to 12 nautical miles (Territorial waters) (approx)** 53,638 kms^2	**12m limit to 200 nautical mile fishery limit (approx)** 380,546 kms^2	**Total sea area inside 200 mile fishery limit (approx)** 468,994 kms^2
Total UK sea area to 200 mile limit 764,678 kms^2	**Scottish sea area as % of UK sea area** 61%	**Scotland land area (to mean low water)** 80,060 kms^2	**Sea area : land area ratio** 5.85 : 1

OIL, GAS, PIPELINES AND GAS STORAGE

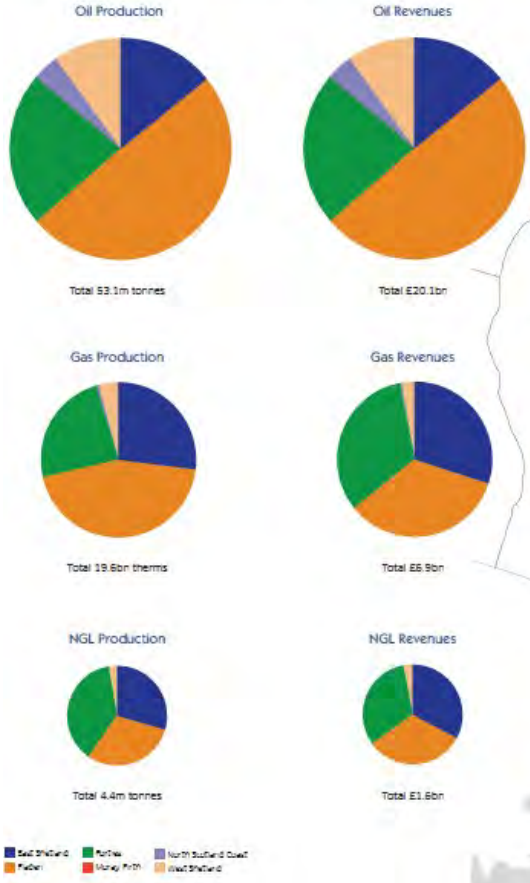
Hydrocarbon fields, platforms, pipelines, coastal infrastructure and production (tonnage) and revenue per sea area (2005-2008)

- Offshore platforms
- Significant discovery not yet developed
- Refinery
- Terminal
- Decommissioning yard
- Pipelines
- 12nm limit

- Producing hydrocarbon fields
- Hydrocarbon fields under development
- 26th round conditional awards
- Licensed blocks 2009 / 2010



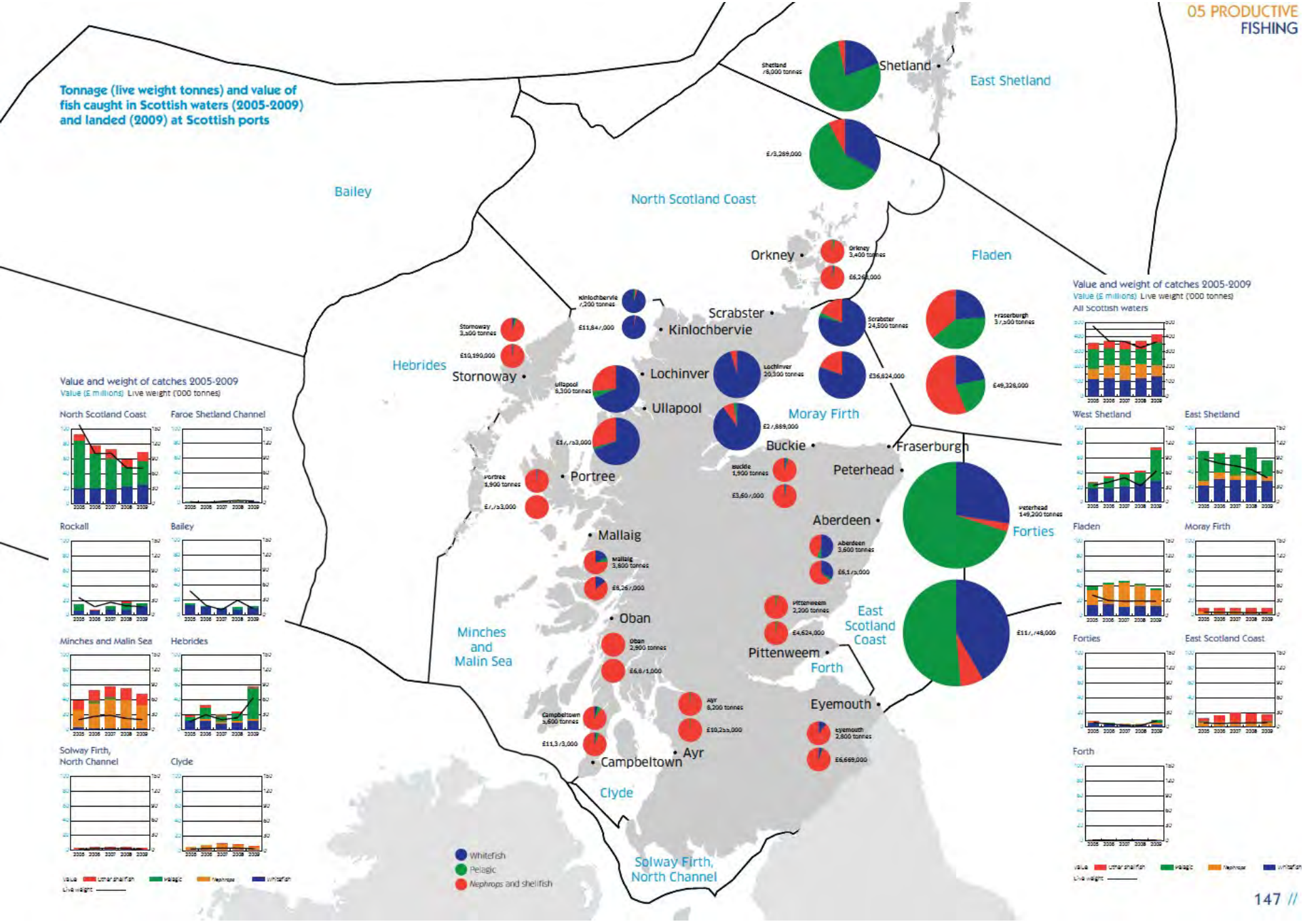
Share of production and revenue between sea areas (2008)



Oil, gas and NGL production and revenue (2005-2008)

Revenue (£ millions) Tonnage (millions) gas therms (billions)

Tonnage (live weight tonnes) and value of fish caught in Scottish waters (2005-2009) and landed (2009) at Scottish ports



Value and weight of catches 2005-2009
Value (£ millions) Live weight ('000 tonnes)

North Scotland Coast | Faroe Shetland Channel
Rockall | Bailey
Minches and Malin Sea | Hebrides
Solway Firth, North Channel | Clyde

Value and weight of catches 2005-2009
Value (£ millions) Live weight ('000 tonnes)
All Scottish waters

West Shetland | East Shetland
Fladen | Moray Firth
Forties | East Scotland Coast
Forth

Aquaculture contributes

£1.8bn

per annum to the UK economy

the majority

£1.4bn

is within the Scottish economy

Locations and production figures of finfish and shellfish sites (2005-2009)

- ▲ Finfish production sites
- • Shellfish production sites

Fin fish farms by sea area ◯ total 291

Shellfish farms by sea area ◯ total 234

65 West Shetland
66

15 East Shetland
35

10 North Scotland Coast
21

1 Moray Firth
0

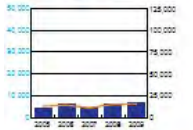
15 Hebrides
17

118 Minches and Malin Sea
134

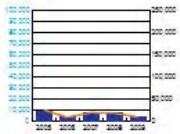
10 Clyde
18

Value and weight of salmon production (2005-2009)
Live weight (tonnes) Value (£'000)

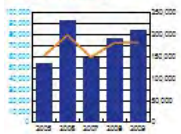
North Scotland Coast



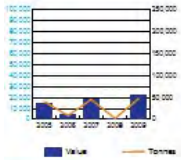
Hebrides



Minches and Malin Sea

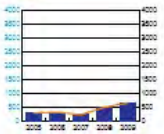


Clyde

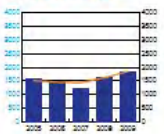


Value and weight of mussels production (2005-2009)
Live weight (tonnes) Value (£ millions)

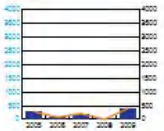
Hebrides



Minches and Malin Sea

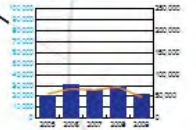


Clyde

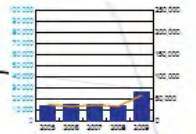


Value and weight of salmon production (2005-2009)
Live weight (tonnes) Value (£'000)

West Shetland

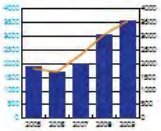


East Shetland

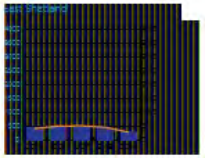


Value and weight of mussel production (2005-2009)
Live weight (tonnes) Value (£ millions)

West Shetland



East Shetland



A breakdown of non salmon fin fish and other shellfish (native and vacific oysters, king and Queen scallops) cannot be provided for reasons of commercial confidentiality.

Lismore North

© Marine Scotland

Line of mussels ready to harvest

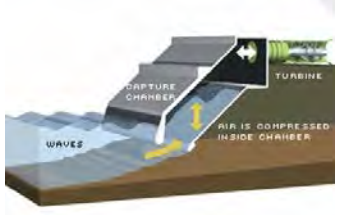
© Marine Scotland

Cages at Quarry Point

© Marine Scotland

Loch Leven below Ben Nevis

© Marine Scotland



Current sites and identified areas for wave, tidal and offshore wind energy and infrastructure sites

- NRIP sites
- EMEC Tidal Power Test Facility
- EMEC Wave Power Test Facility
- Beatrice Wind Farm Zone
- Grid infrastructure (> 132kV)
- Pentland Firth and Orkney Strategic Area
- Robin Rigg Windfarm
- Wind Demonstration Sites
- Tidal Areas of Interest
- Wave Area of Interest
- Leased tidal area
- Leased wave area
- Offshore wind - Territorial Waters Round
- Offshore wind - Round 3 Zones
- Offshore wind - SEA Medium term options

Arnish
Nigg
Kishorn
Ardersier
Peterhead
Aberdeen
Dundee
Methil
Leith
Hunterston
Machrihanish

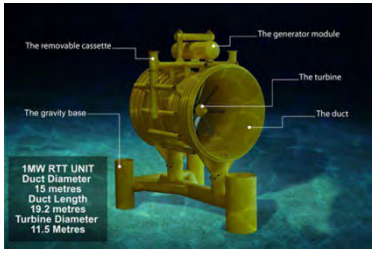
Robin Rigg windfarm

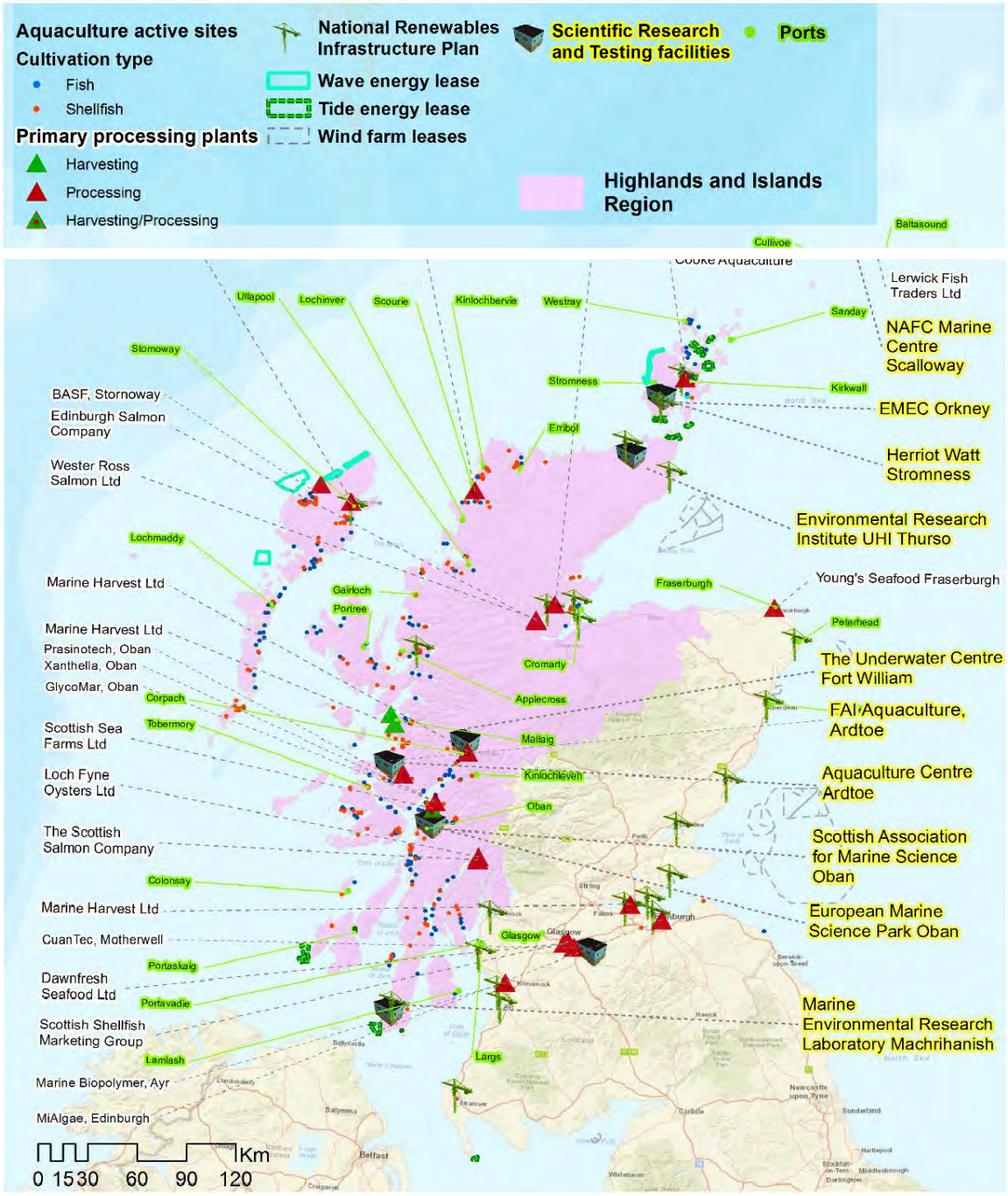
© E.on

Regional locational guidance areas of opportunity for wave and tidal development

Location	Device Type
West Shetland	Wave
South West Shetland	Wave
West of Lewis	Wave
Mull of Kintyre	Tidal
West of Islay	Tidal

Source: Scottish Government[8]




Aquaculture active sites
Cultivation type
Fish
Shellfish
Primary processing plants
Harvesting
Processing
Harvesting/Processing
National Renewables Infrastructure Plan
Wave energy lease
Tide energy lease
Wind farm leases
Scientific Research and Testing facilities
Ports
Highlands and Islands Region
Baltasound
Cullivoe
Cooke Aquaculture
Lerwick Fish Traders Ltd
Ullapool
Lochinver
Scourie
Kinlochbervie
Westray
Sanday
NAFC Marine Centre Scalloway
Stornoway
Stromness
Kirkwall
EMEC Orkney
BASF, Stornoway
Edinburgh Salmon Company
Wester Ross Salmon Ltd
Erribol
Herriot Watt Stromness
Environmental Research Institute UHI Thurso
Lochmaddy
Marine Harvest Ltd
Gairloch
Portree
Fraserburgh
Young's Seafood Fraserburgh
Peterhead
Marine Harvest Ltd
Prasinotech, Oban
Xanthella, Oban
GlycoMar, Oban
Cromarty
The Underwater Centre Fort William
Corpach
Applecross
FAI Aquaculture, Ardtoe
Tobermory
Scottish Sea Farms Ltd
Mallaig
Loch Fyne Oysters Ltd
Kinlochleven
Aquaculture Centre Ardtoe
Oban
The Scottish Salmon Company
Scottish Association for Marine Science Oban
Colonsay
Marine Harvest Ltd
European Marine Science Park Oban
CuanTec, Motherwell
Glasgow
Portaskaig
Dawnfresh Seafood Ltd
Portavadie
Marine Environmental Research Laboratory Machrihanish
Scottish Shellfish Marketing Group
Lamlash
Largs
Marine Biopolymer, Ayr
MiAlgae, Edinburgh
Belfast
Km
0 15 30 60 90 120

- The BOTs harbour 90% of the UK's biodiversity and through these, the UK has the fifth largest, and possibly the most diverse, marine zone in the world (6.8 million km², or 1.9% of the world's oceans).

Marine Alliance for Science and Technology for Scotland

a marine partnership for Scotland

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Homepage > Research

Research Themes

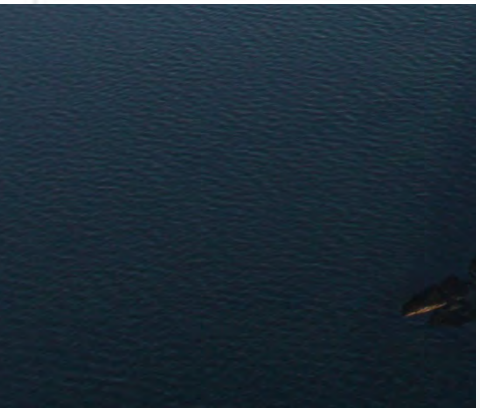
MASTS Research Themes

A major objective of the MASTS organisation is enha
Scottish marine research environment. To achieve th
MASTS Executive have established three major rese
themes under which to organise the research of the I
community. These themes also strongly reflect the M
Policy of the Scottish Government.

The major MASTS research themes are:

- Dynamics and properties of marine systems
- Productive seas
- Marine biodiversity, function and services

Each Research Theme is led by a theme leader and
scientific excellence and cooperation within the them



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Homepage > Research > Research Themes > Dynamics and properties of marine systems

Dynamics and Properties of Marine Systems

This Theme embraces the fundamental physical attributes and dynamics of marine systems including marine physics, chemistry, sedimentology, geomorphology and oceanography.

The description of the marine system includes the analysis of past condition, spatial mapping of present conditions, and the impacts of future change on the dynamics and properties of the system. Important aspects of climate change such as predicting sea-level rise, modelling ocean atmospheric exchange and sea ice extent, fall within this theme. Technological developments that allow improved interpretation of marine systems are integral to this Theme.

MASTS also has links with the SAGES research pool which has shared interests in the dynamics and properties of marine systems.

The preeminant scientific challenge of the 21st Century is to understand and quantify Earth's current and future climate. How will climate variablity impact the oceans's sustainable resources and what are the human impacts of such change? Observing, modelling and quantifying marine systems is key to understanding their response to increasing carbon dioxide. Oceans' determine the rate, extent and character of climate by their long-term storage and transport of heat and carbon and dominance of the global fresh-water cycle. A critical challenge is to integrate our understanding of ocean systems on different timescales and across disciplines and to propose testable hypothesis of how these systems interact.

Theme Leader
Dr Bee Berx

b.berx@scotland.gsi.gov

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Homepage > Research > Research Themes > Productive seas

Productive Seas

The Theme of Productive Seas is a key area for MASTS activity with major scientific challenges encompassing the balance of exploitation against the resilience and capacity of natural systems to supply resources against a backdrop of increasing demand and climate change.

The main aim of this theme is to: **Use our world leading science to improve the sustainable productivity of our marine environment.**

Both energy and food security will be fundamental drivers for marine science. Scotland is in many ways at the forefront of marine energy production through established and emerging fossil fuel extraction and marine renewables development in particular. Aquaculture is pivotal to the rural economy of some areas within Scotland and is likely to expand into the production of other non-food products and services through biofuels, marine biotechnology and genomics.

Scotland's capture fishery remains one of the largest in Europe and its long term survival will hinge upon the development of sustainable fisheries management founded on good science. As well as delivering strategic science, the Forums within this Theme will also need to be actively engaged with policy, regulation and industry to address both immediate and longer term challenges.

Through representation of the Productive Seas Theme on the Marine Strategy Forum together with other strategic

Theme Leader
Prof Jimmy Turnbull
j.f.turnbull@stir.ac.uk

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Homepage > Research > Research Themes > Marine biodiversity, function and services

Marine Biodiversity, Function and Services

The link between the diversity, distribution in space and time, and resilience of marine organisms is central to this theme. In addition, the role of marine biodiversity in supporting ecosystem function and providing ecosystem services across the variety of marine habits, from coastal wetlands and estuaries to the deep sea, are included.

This theme encompasses research on the societal value that is placed on marine habitats and the socio-economic impacts of exploitation and climate change.

The scope of this theme is central to the Scottish Government research agenda for 2011-16. Maintaining marine ecosystem goods and services and addressing the challenges of climate change are vital to the Scottish economy and the management of ecosystems is essential for the conservation of key habitats and species.

This theme will be led by Prof Teresa Fernandes who has over 20 years experience of coastal and marine environments. This theme will develop the MASTS strategy in the area of biodiversity and ecosystem services in order to contribute to our fundamental knowledge in this area and to inform national and international governments and organisations.

View the steering group and assocaited information

Theme leader: Prof Teresa Fernandes

Theme leader
Prof Teresa Fernandes
t.fernandes@hw.ac.uk

Forums

Coastal Zone

The Coastal Zone Forum provides a network for successful multidisciplinary marine and social science…

Deep Sea

Scotland has a vast deep-sea area streching out to the 200 nautical mile boundary, encompassing a ra…

Marine Stressors

The Marine Stressors Forum aims to provide an integrated platform to promote the enhanced understand…

Coastal Processes & Dynamics

The CPD Forum aims to provide an integrated Forum to promote enhanced understanding of the physical …

- ORE SuperGen HUB ESPRC
- New 4 yr programme £9M with a ‘whole systems’ approach with leader and 9 Co-Directors
- B Scott is the one environmental director

Marine Renewable Energy

The Marine Renewable Energy Forum replaces the previously named Marine Energy Forum and it also has …

Fisheries Science

The MASTS Fisheries Science Forum aims to be a collective world class fisheries science facility whi…

Aquaculture

The focus of this forum spans the entirety of the Scottish aquaculture sector, encompassing the prod…

Marine Planning & Governance

The MASTS Marine Planning & Governance Forum is now established. This is to support dialogue acr…

ORE Supergen
Offshore Renewable Energy

Oil and Gas (O&G)

The MASTS Oil and Gas (O&G) Forum will be led by Dr Kate Gormley.

Biogeochemistry

The Marine Biogeochemistry Forum (MBF) presents a unique opportunity to ensure marine biogeochemists...

Technology, Platforms and Sensors

Marine science is largely underpinned by technology which is driven and sculpted by mutual interacti...

Numerical Hydrodynamic Modelling

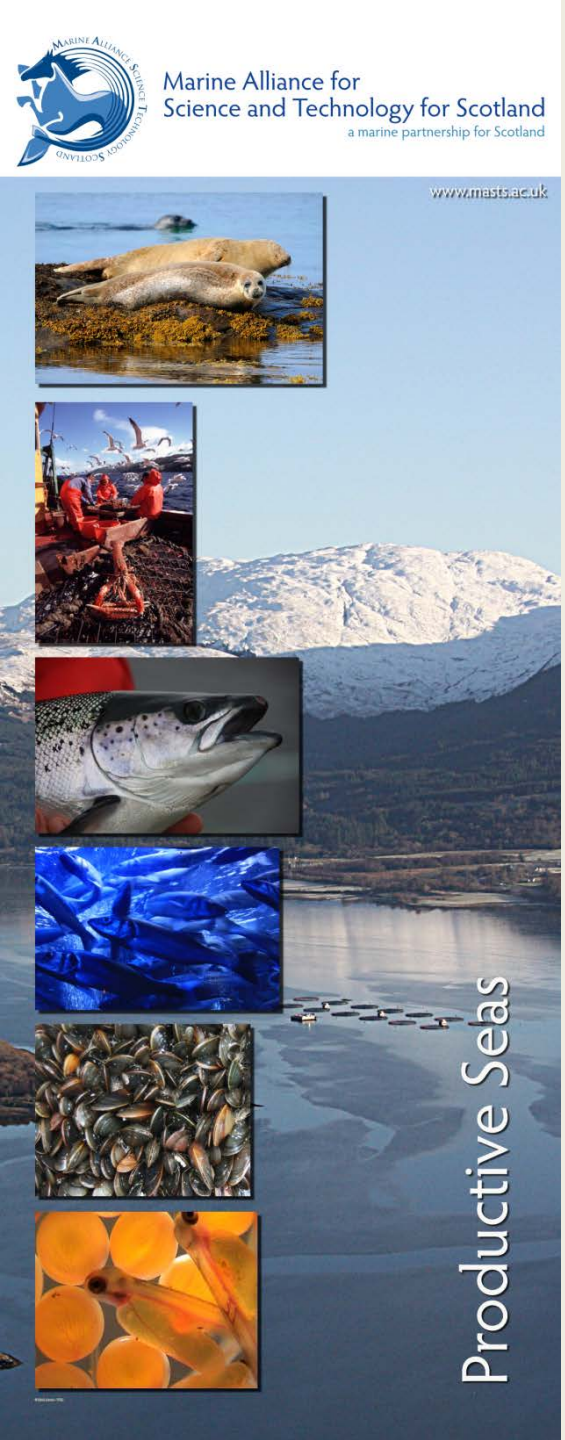
The Numerical Hydrodynamic Modelling Forum aims to promote numerical hydrodynamic modelling within S...

Forums

Resource Mapping and Accessibility

Scottish Marine Science Strategy

- UK- MSCC – Scottish – Autumn
- Navigating the Future V + other UN/EU foresighting…
- MASTS – developing its own strategic vision



Expanding Areas – Engineering/Environment

- Decommissioning of O&G
- Automated Underwater Vehicles
- Robotics – Increasing use of AI
- Marine Biotechnology - novel compounds/molecules and pathways
- Advances in ship design and associated technologies
- Expansion of offshore wind (tidal stream….wave…)
- Aquaculture (expansion and sustainability)
- Fisheries (sustainability)
- Tourism
- Governance and Regulation

Addressing Global Challenges -

UK Overseas Territories may be an increasing focus – particularly where Marine Protected Areas have been established or are planned. *These areas represent a significant opportunity for both novel science and real impact with respect to conservation and management. GCRF….OECD….ODA……UN Development Goals (Science diplomacy!)*

Climate Change and its impacts on marine systems and coastal environments and communities will remain a focus, BUT adaptation and mitigation now the focus.

Food and energy security - remain high on the agenda and this is reflected in domestic and EU funding opportunities, together with a focus on "Blue Growth" within the EU.

MASTS is well placed to respond to these areas of research, but should capitalise on its membership and profile more effectively to secure funding.

MASTS – WORKING WITH INDUSTRY

THE MARINE ALLIANCE FOR SCIENCE AND TECHNOLOGY FOR SCOTLAND

www.masts.ac.uk

WHAT IS MASTS?

The Marine Alliance for Science and Technology for Scotland (MASTS) brings together the majority of Scotland's marine research capability under a single umbrella. Our membership includes all of Scotland's major marine research facilities and Universities – **www.masts.ac.uk**

MASTS CAN PROVIDE ACCESS TO RESOURCES, EXPERTISE AND FUNDS TO SUPPORT INDUSTRY R&D.

Does your organisation: face challenges; generate ideas; or data that you never seem to have the time or resources to deal with? If the answer is yes, then perhaps you should consider the option of working with MASTS staff, interns, or PhD students.

Depending on the nature of the challenge you face, MASTS may be able to provide your organisation with a broad spectrum of expertise, tapping into the skills of some of our brightest post-graduate and post-doctoral researchers, backed by the significant research infrastructure and capacity of their host institutions and the wider MASTS network.

MASTS INTERNSHIPS

Internships offer industry an excellent opportunity to have access to additional staff resources to address a specific piece of work or project. Such opportunities offer invaluable experience outwith the academic environment for the intern helping them gain additional skills, whilst building working relationships, new networks and extending their research experience into business.

Internships can last between two weeks and six months. Appointees may work either full time or part time and are generally expected to spend between 50-100% of their time in the host organisation.

MASTS may provide some funding to help offset a proportion of the cost of the intern undertaking their placement.

WHAT COULD A MASTS PHD STUDENT DO FOR YOUR ORGANISATION?

To progress within their chosen career path, many of our brightest graduates need a PhD. This qualification is gained through a period of training based on undertaking and successfully completing a research project. Addressing your challenge or exploring your ideas could be that project.

By sponsoring or part sponsoring a PhD student your organisation can be involved in helping to design the project as well as gaining access to the dedicated time, skills, enthusiasm and intellect of an individual for a minimum of 3.5 years. This comes with the support, infrastructure and backing of at least one MASTS member institution who would host the student. Although not a requirement, there is the potential for the student to spend periods of time working directly with the sponsoring organisation.

WHAT IF WE NEED MORE FOCUSED RESEARCH SUPPORT TO ADDRESS MORE IMMEDIATE OR BIGGER CHALLENGES?

MASTS community involves approximately 700 marine researchers working in all marine science and associated disciplines across 13 institutions. Many of our researchers are internationally recognised. Through MASTS we have the capacity to build multidisciplinary teams as well as helping you to identify specialists in particular fields. We also have close links with Government, regulators, industry and NGOs.

We have considerable experience and success in attracting domestic and EU funding to support research and would welcome the opportunity to develop projects and proposals in collaboration with industry.

OUR DOCTORATES AT WORK PROGRAMME – AN INDUSTRY-BASED PROGRAMME FOR COMPANY EMPLOYEES

Industry-based employees can be registered as research students with one of our host Universities and work towards higher research degrees (MPhil and PhD) through their work-based projects in collaboration with the University and with academic co-supervision. In this model, the registered company's students would remain within the company premises as progress is made towards the completion of the research degree.

WHAT DOES IT COST?

Talk to us in the first instance – the discussion is free, and we may at least be able to provide you with additional information or contacts within MASTS who may be able to help.

Sometimes the in-kind support of industry can be sufficient to attract the interest of a researcher who simply wants to solve the "problem". The benefit to the researcher may be access to data or facilities and ultimately the potential to generate a high impact research publication.

More substantive research projects will have a cost implication, but there are a number of ways to minimise the cost to your business.

A UNIVERSITY BASED PHD STUDENTSHIP

The cost of a 3.5 year PhD full time studentship which could be focused on helping your company resolve a particular challenge requiring research is about £75,000. However, many MASTS institutions will provide up to 50% of this cost, which means that the cost to you could be £37,500 spread over 3.5 years – £10,715 per year pro rata. This commitment can be further reduced if other sponsoring organisations are willing to contribute.

DOCTORATES AT WORK PROGRAMME

Within a typical model, in Years 1 and 2 the participants are registered as MPhil students with fees set at the "part-time" level. In most instances, the company-based students escalate to PhD level. Accordingly, for Years 3 and 4 (and any subsequent years of study) the fees are set at "full-time" level. Based on this, the typical programme costs for industry-based employees are:

- Year 1: MPhil Fees approx. £2,000
- Year 2: MPhil Fees approx. £2,000
- Year 3: PhD Fees approx. £4,000
- Year 4: PhD Fees approx. £4,000

In each year an additional £500 honorarium is paid to the academic supervisor.
Typical total costs for an industry-based employee at PhD level: £14,000 over 4 Years
If your organisation is liable for UK corporation tax additional support may be available through R&D tax relief. For more information on R&D tax relief visit https://www.gov.uk/guidance/corporation-tax-research-and-development-rd-relief

As an example, where the expenditure is eligible for R&D tax relief under the most beneficial regime for a full time PhD student, after taking account of corporation tax relief, the cost could drop to just under £9000 per year.

FOR MORE INFORMATION FROM MASTS CONTACT:

The MASTS Directorate through
Dr Mark James maj8@st-andrews.ac.uk or
Dr Emma Defew ecd2@st-andrews.ac.uk

Innovation Centres

Role: To engage industry and academia to accelerate economic development

- **Digital Health Institute** http://dhi-scotland.com/
- **Stratified Medicine Scotland** www.stratmed.co.uk/
- **Centre for Sensor and Imaging Systems (CENSIS)** http://censis.org.uk/
- **Industrial Biotechnology (IBioIC)** www.ibioic.com/index.php
- **Scottish Aquaculture Innovation Centre (SAIC)** http://scottishaquaculture.com/
- **Oil & Gas Industry Centre (OGIC)** http://ogic.co.uk
- **Construction Scotland Innovation Centre (CSiC)** http://www.cs-ic.org/
- **Data Lab** www.thedatalab.com/
- **Fisheries Innovation Scotland** www.fiscot.org.uk

Represents £110 million investment 2013-2018…..

Seeking clarification from the SFC re the relationship between Ics and Pools

Innovation Centres

Innovation Centres

Scottish Aquaculture Innovation Centre

construction scotland innovation centre

THE DATA LAB

DIGITAL HEALTH INSTITUTE

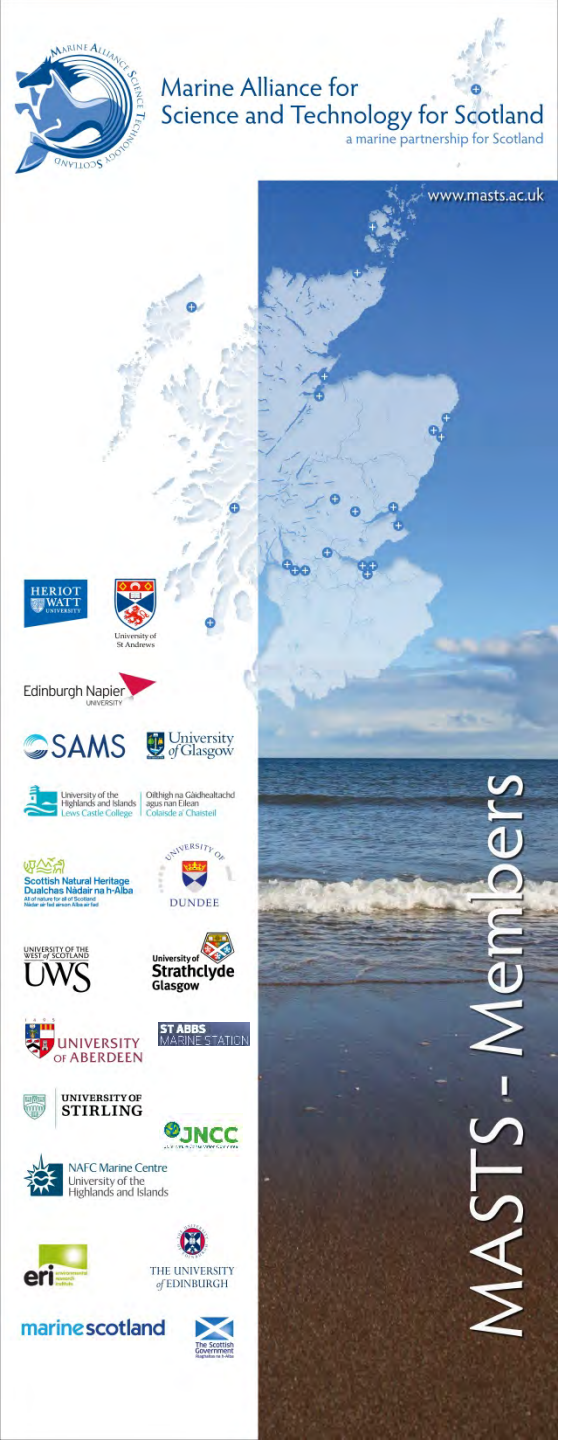
IBioIC

OGIC Oil & Gas Innovation Centre

CENSIS

Stratified Medicine Scotland

FIS Fisheries Innovation Scotland



Bids "Science and Trade Diplomacy"
– Joining up the dots!

- Global Challenges Research Fund/Newton Fund – ODA Driven – SDG Driven
- GCRF – CORE Hub Proposal – 40+ partners – Bangladesh, India, Sri Lanka + all relevant Scottish regulators and HEIs
- Delegations – India, Chinese Academy of Sciences, South Africa – FCO – RSS Discovery
- Missions – Thailand, Malaysia, New Zealand, Brazil, Borneo etc…..South Africa and Namibia next?
- British Overseas Territories – CEFAS/JNCC review of needs – MoU with Pitcairn

UK and Scotland needs to have a joined up approach!

Capacity building and training

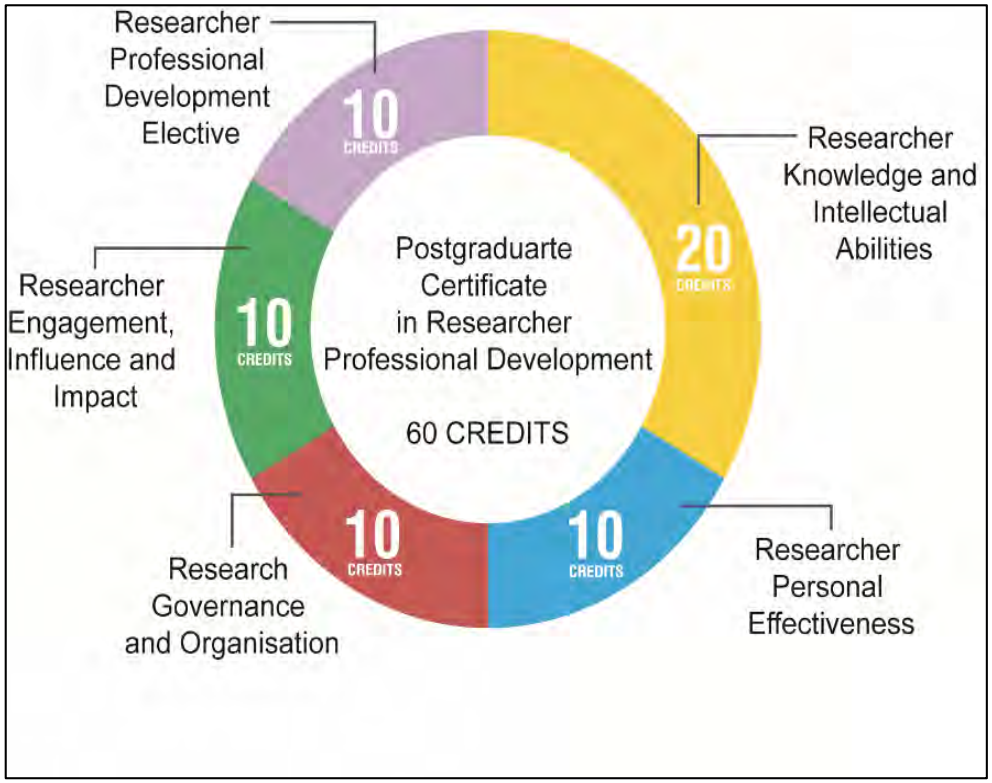
MASTS Graduate School

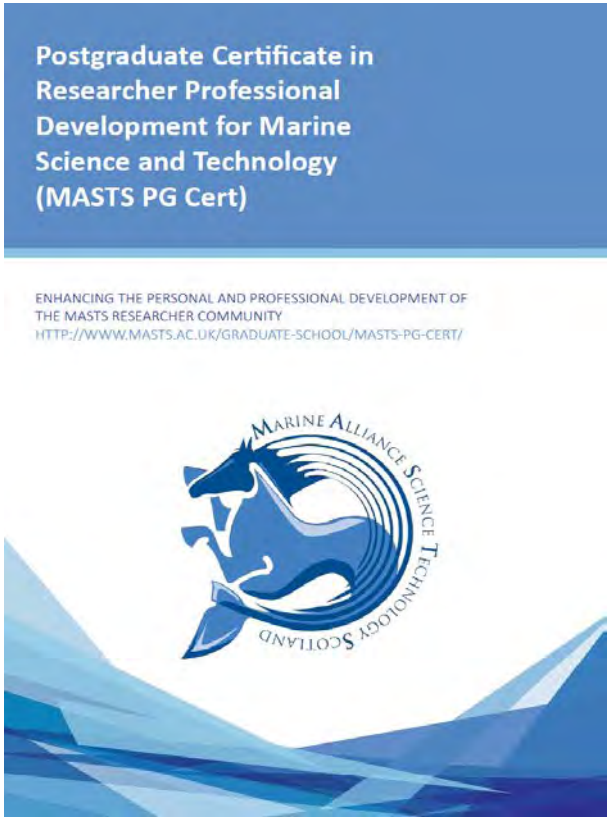
- Annual Retreat –March 2017
- Specialist training and workshops
- MASTS – industry collaborative PhDs, Fellowships and exchanges – national and international
- Internships – shadowing and placements
- Webinar programme
- Associate student membership option
- Making More of Masters initiative

The MASTS Graduate School currently has 45 students and 22 alumni.

MASTS PG Cert in Researcher Professional Development

Can CLIPPER Help?





Marine Alliance for Science and Technology for Scotland

a marine partnership for Scotland

MASTS Annual Science Meeting

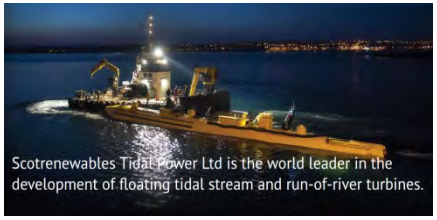
"**Challenges and innovative solutions for sustainable seas**" - **Wednesday 31st October – Friday 2nd November 2018** at the Technology & Innovation Centre, Glasgow.

Confirmed special sessions on "Marine Stressors"; "Microplastics & Marine Litter" & "Increasing resilience to natural hazards", an Possible INSITE session.

Confirmed workshops on "Decommissioning"; "Aquaculture"; "Scottish Consortium for Rural Research"; SIFIDS;

UKs Largest dedicated marine science meeting ~350 delegates – science/policy/regulation/industry/NGOs

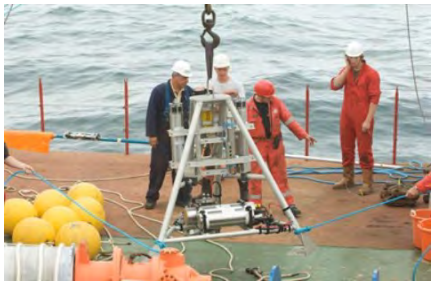
Performance

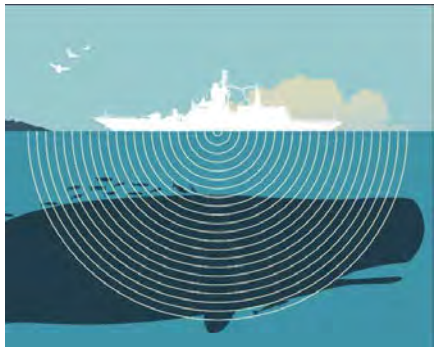


- MASTS related staff – 5,800 papers (09-16) – often in top journals
- Impact factor 4.8 (papers published 13-14)
  – double the average impact factor for marine and freshwater biology)
- Demonstrable influence on REF ~ 5% of impact statements were marine-related

MASTS Member	Total No. Impact Case Studies	No. Marine Themed	% Marine Themed
Edinburgh Napier University	19	2	10.5
Heriot-Watt University	57	5	8.8
University of Aberdeen	81	5	6.2
University of Dundee	55	2	3.6
University of Edinburgh	227	2	0.9
University of Glasgow	138	2	1.4
University of St Andrews	72	7	9.7
University of Stirling	41	3	7.3
University of Strathclyde	74	6	8.1
University of the Highlands and Islands	15	3	20.0
University of the West of Scotland	19	1	5.3

MASTS Funding Highlights





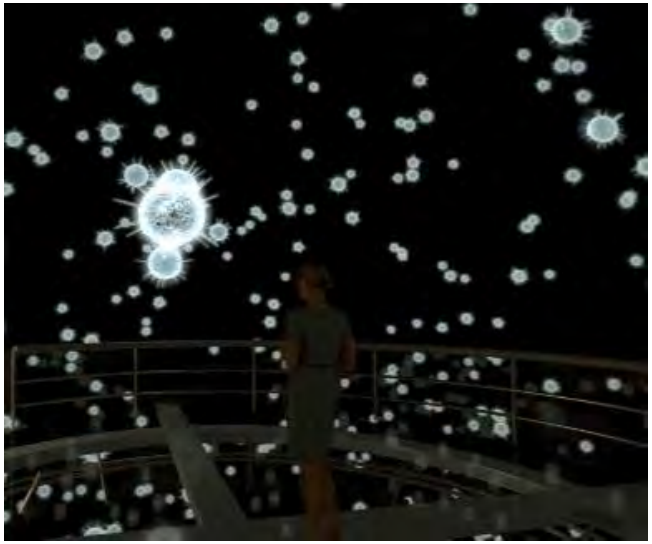
2009 – 2017
£48.7m pro rata grant income (£82m total) ~17% from industry and charitable bodies
~18% EU
~65% UK RCs
Stimulated £30m of new infrastructure development – Lyle Centre and New Gatty Lab.

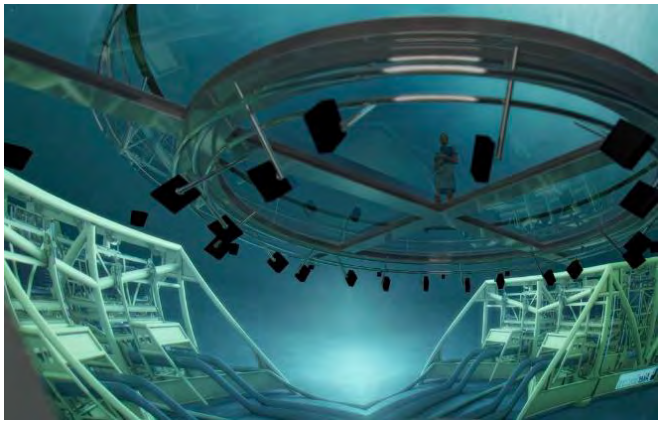
- **PEER - £52,760 committed - £14.8m** recovered
- PECRE – £169,366 committed –researchers from 10 countries (21 awarded)
- Visiting Fellowships - £237,615 (20 awarded)
- Small Grants £100,657 (118 awarded)
- Theme/Forum Grants £91,694 committed

- ***Total to 2016 ~£652,000***


SCOTTISH
OCEANS
INSTITUTE

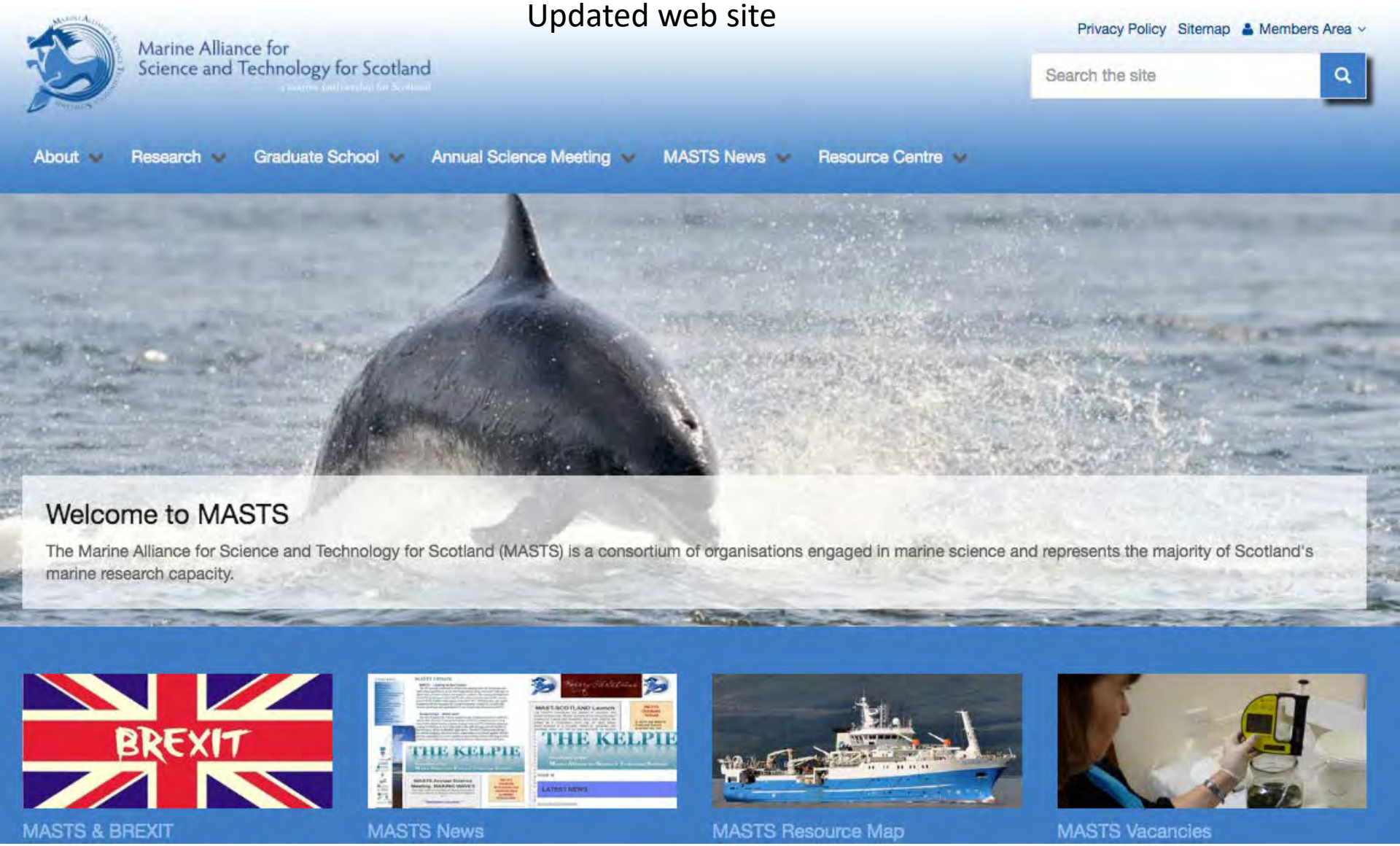
New projects: Eden Campus





Collaborating with OSC in Norway (a spin-out from NTNU Ålesund) the D'Arcy Thompson Simulator Centre will form a global network with complimentary institutions (MASTS) and industries in Australia and Canada.

Updated web site



Business as usual ??


Marine Alliance for
Science and Technology for Scotland
a marine partnership for Scotland
HERIOT WATT UNIVERSITY
University of St Andrews
Edinburgh Napier UNIVERSITY
SAMS
University of Glasgow
University of the Highlands and Islands
Oilthigh na Gàidhealtachd agus nan Eilean
Lews Castle College
Colaiste a' Chaisteil
Scottish Natural Heritage
Dualchas Nàdair na h-Alba
UNIVERSITY OF DUNDEE
UNIVERSITY OF THE WEST of SCOTLAND
UWS
University of Strathclyde Glasgow
UNIVERSITY OF ABERDEEN
ST ABBS MARINE STATION
UNIVERSITY OF STIRLING
NAFC Marine Centre
University of the Highlands and Islands
eri
THE UNIVERSITY of EDINBURGH
marinescotland
The Scottish Government
British Geological Survey
MASTS - Members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Questions?