

Scottish Marine Energy Research (ScotMER)

A coordinated approach to marine renewable energy research
in Scotland



Scottish Government
Riaghaltas na h-Alba
gov.scot

The background of the slide features a photograph of a coastal landscape with a blue sea, dark rocky outcrops in the foreground, and a blue-tinted sky. The image is overlaid with large, white, curved graphic elements that create a sense of movement and depth.

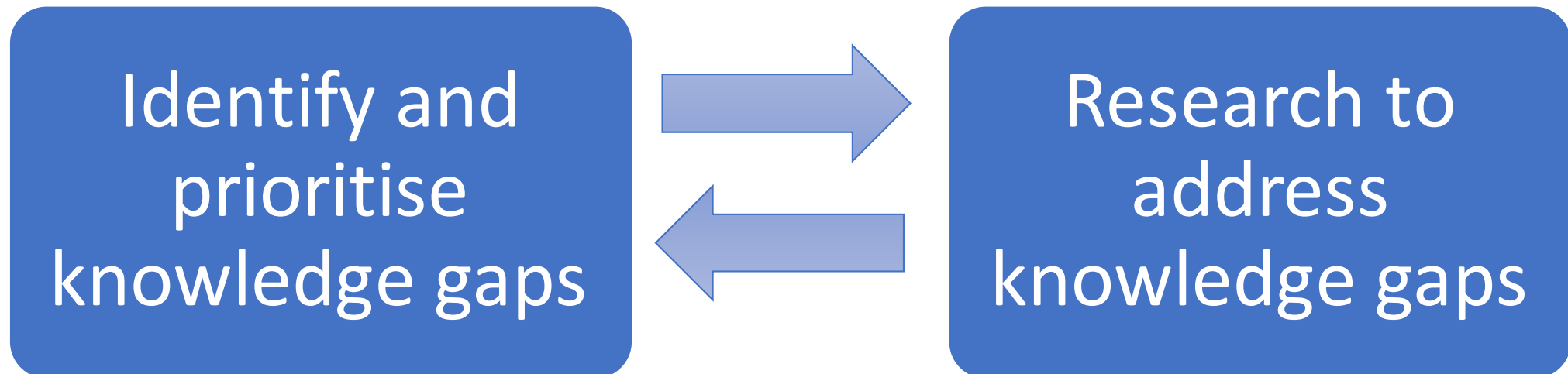
marine scotland

Why do we need a research programme?

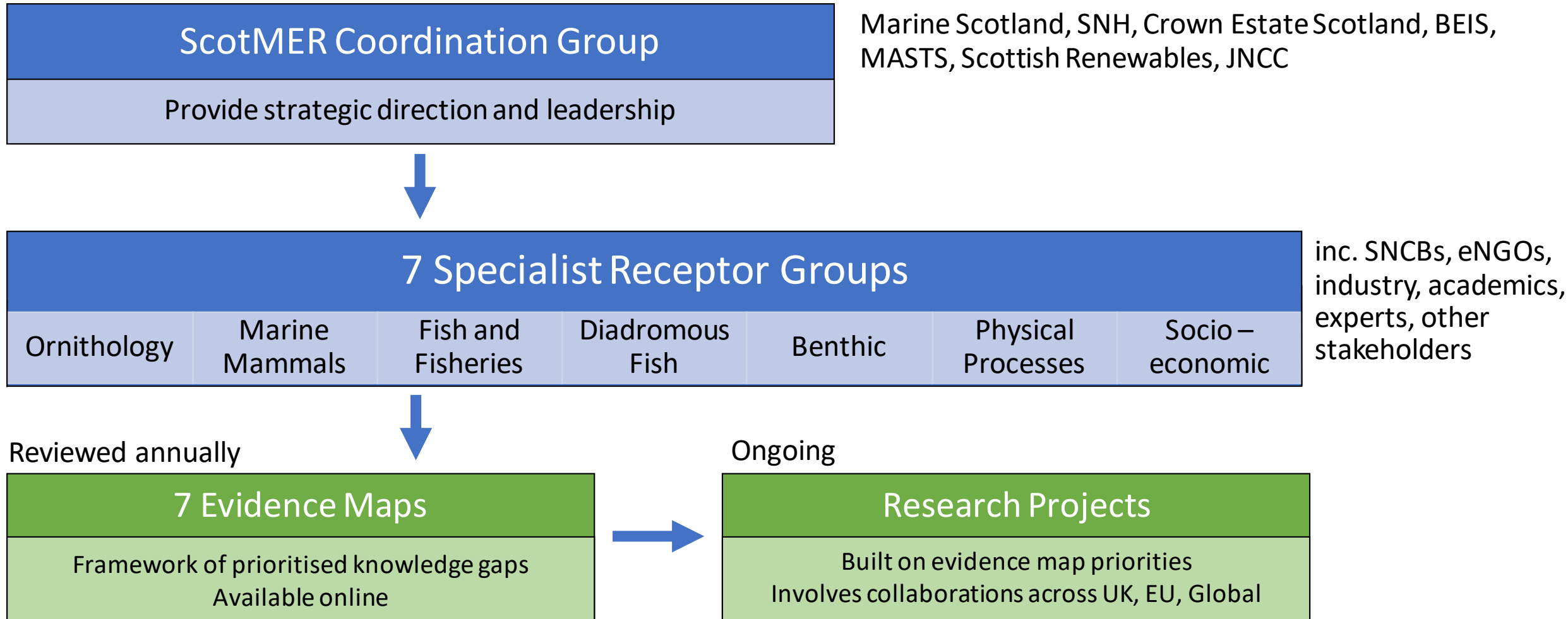
- Gaps in knowledge when consenting offshore renewables
- Policy commitments:
 - National Marine Plan
 - Precautionary Principle
 - Programme for Government 2018-2019
- Beneficial:
 - Filling evidence gaps to improve best available science
 - Supporting sustainable development of offshore renewables that contributes to our low carbon future
 - Protecting Scotland's unique marine environment

ScotMER Programme

- To deliver coordinated and collaborative research to facilitate the sustainable development of the offshore renewables sector in Scotland.
- Two parts to ScotMER:



Coordinated and collaborative approach



MARINE MAMMALS

Information						Themes				Reasoning	Prioritisation					Potential activity	
ID	Knowledge Gap	Target Species/Group	Seasons	Target Regions	Renewables Sector	Acute effects	Chronic effects	Baseline	Methodologies	Relevance	Current or Very Likely Future Constraint?	Relevant to >1 Sector?	Relevant to >1 Project?	Relevant to >1 Region?	Currently feasible	Score	Potential activity
											MM.01	Fine scale behavioural responses of marine mammals around tidal turbines	Harbour seal	All	North Scotland; West Scotland; Northern Isles	Tidal	x
MM.02	Fine scale behavioural responses of marine mammals around tidal turbines	Harbour porpoise	All	North Scotland; Northern Isles	Tidal	x	x			To increase evidence base for use in estimation of collision rates in collision risk modelling	1	0	1	1	Y	2	Using passive acoustics porpoises in 3D around turbines
MM.03	Fine scale behavioural responses of marine mammals around tidal turbines	Grey seal	All	North Scotland; Northern Isles	Tidal	x	x			To increase evidence base for use in estimation of collision rates in collision risk modelling	0	0	1	1	Y	0	Using active acoustics seals in 3D around tide
MM.04	Likelihood and rate of collision with tidal turbines	Harbour seal	All	North Scotland; West Scotland; Northern Isles	Tidal	x	x			To increase evidence base for use in estimation of collision rates in collision risk modelling	3	0	1	1	Y	6	GPS/UHF tracking combined with active acoustics to determine avoidance rates
MM.05	Likelihood and rate of collision with tidal turbines	Harbour porpoise	All	North Scotland; Northern Isles	Tidal	x	x			To increase evidence base for use in estimation of collision rates in collision risk modelling	1	0	1	1	Y	2	Using active and passive acoustics to track porpoises around tidal turbines
MM.06	Likelihood and rate of collision with tidal turbines	Grey seal	All	North Scotland; Northern Isles	Tidal	x	x			To increase evidence base for use in estimation of collision rates in collision risk modelling	0	0	1	1	Y	0	Using active acoustics seals in 3D around tide
MM.07	Incorporating understanding of how marine mammals use tidal areas into collision risk models	Harbour seal	All	North Scotland	Tidal	x	x		x	To increase evidence base for use in estimation of collision rates in collision risk modelling	1	1	1	1	Y	3	Tracking of animals in active areas
MM.08	Abundance and distribution of marine mammals in locations and habitats suitable for renewable developments	Cetaceans	All	Scotland	All				x	Required to inform sectoral plans and scoping responses. Existing data become dated, some regions have fewer data than others (e.g. across species, seasons, years)	1	1	1	1	Y	3	Static acoustic monitoring transect surveys (aerial based)
MM.09	Abundance and distribution of marine mammals in locations and habitats suitable for renewable developments	Pinnipeds	All	Scotland	All				x	Required to inform sectoral plans and scoping responses. Existing data become dated, some regions have fewer data than others (e.g. across species, seasons, years)	1	1	1	1	Y	3	Fine scale usage maps; telemetry and haul out
MM.10	Broad scale abundance and distribution of marine mammals	Cetaceans	All	North Sea	All				x	Required to inform sectoral plans and scoping responses. Existing data become dated, some regions have fewer data than others (e.g. across species, seasons, years)	1	1	1	1	Y	3	SCANS-III surveys
MM.11	Broad scale abundance and distribution of marine mammals	Pinnipeds	All	Scotland	All				x	Required to inform sectoral plans and scoping responses. Existing data become dated, some regions have fewer data than others (e.g. across species, seasons, years)	1	1	1	1	Y	3	UK wide usage maps; telemetry and haul out
	Behaviour of marine mammals in	Cetaceans and								To gather baseline information on marine mammals in areas that							Tracking individuals in

Current areas of research activity

- Seabird displacement and collision risk, e.g.:
 - Bird sensitivity mapping tool
 - Adapting new type of tag to birds to measure energetics
 - Strategic environmental assessment in Forth and Tay area – cumulative impact assessment framework (EU Funded – SEANSE)
- Bird and cetacean monitoring in Scottish waters
 - Funded by European Maritime and Fisheries Fund
- Fish and fisheries:
 - Fish and Fisheries studentship programme – call open imminent
 - Establishing migration pathways of Salmon smolts

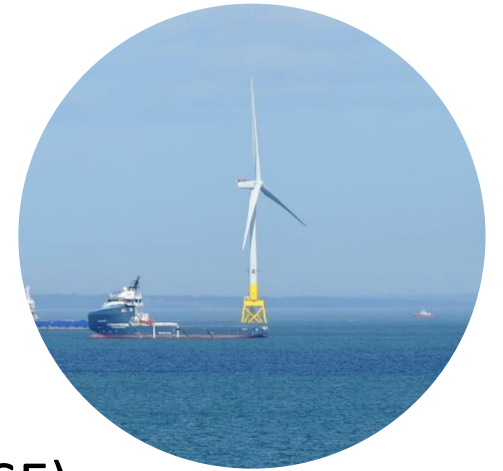


Current areas of research activity



- Marine mammal disturbance:
 - Reviewing noise modelling approaches to guide assessments
 - Improving modelling population consequences of disturbance (iPCoD model)
 - Fine scale marine mammal behaviour around tidal energy devices
 - ECOMMAS - East Coast Marine Mammal Acoustic Study
- Socio-economic
 - How best to define the 'local area' for impact assessments
- Benthic
 - Characterising the status of *Sabellaria spinulosa* reef off the Scottish East Coast

Current areas of research activity



- North Seas Spatial Planning
 - Cumulative Environmental Assessment Framework (CEAF)
 - Strategic Environmental Assessment North Seas Energy (SEANSE)
- Partners on various EU funded monitoring and management projects
 - E.g. JOMOPANS, MARPAMM, JONAS, COMPASS
- Offshore Renewables Joint Industry Programme
 - UK-wide collaborative programme of environmental research to reduce consenting risk
 - ORJIP Offshore Wind
 - ORJIP Ocean Energy (wave and tidal)

Coming up

- ScotMER Research Symposiums:
 - Marine Mammals: 6-7 March 2019
 - Fish and Fisheries: later in 2019
- Hosting EU CEAF/SEANSE workshops
 - 11 – 14 March
- ORJIP Offshore Wind Stage 2
 - Due to launch soon
- Fish and Fisheries studentships

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ScotMER

Scottish Marine Energy Research Programme

Collaborative research to support the sustainable development of offshore renewable energy in Scotland's seas

