



MASTS Annual Science Meeting 2015

30th September – 2nd October 2015 at The Technology & Innovation Centre,
University of Strathclyde, Glasgow

“INFLUENCING OUR MARINE FUTURE”

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Day 1: Wednesday 30 September 2015

08.15-08.45 Coffee and Registration

08.45-09.10 **Opening and welcome by Prof David Paterson** (MASTS Executive Director) in Main Auditorium (Auditoria B/C). This will include brief updates from the MASTS Research Theme Leaders.

09.10-09.35 **The MASTS Cruise** – exciting news from the MASTS Deep Sea Forum.

09.35-11.00 **MASTS General Science Session 1** in Main Auditorium (Auditoria B/C) (Chair: Prof. David Paterson). Talks are 15 minutes each. Questions will be at the end of all talks.

- *Mark Johnson* (St Andrews) Long term on-animal underwater noise measurements.
- *David Meldrum* (SAMS) Submarine Communications Cables: a new tool for disaster warning and climate change monitoring
- *Lilian Lieber* (Aberdeen) Basking without borders: First genetic evidence for inter-annual site fidelity and contemporary, global gene flow in the basking shark.
- *Bruce McAdam* (Stirling) A phase state model for weighing up positive and negative ecological impacts.
- *Jose Fariñas-Franco* (Heriot Watt) 'Sliding baselines' in a marine protected area: the native oyster as a case study

11.00-11.45 **Coffee break, networking and E-poster session 1**

	Screen 1	Screen 2	Screen 3	Screen 4	Screen 5	Screen 6	Screen 7
11.05-11.20	Sonja Ruckert	Laura Duran-Suja	Pablo Diaz	Fiona Murray	Alan Fox		

11.25-11.40	Anna Kintner	Sara Campana	Susan Miller	Fionn Murphy	Adam Hughes		
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- *Sonja Rueckert*: Parasites of deep-sea fish *Simenchelys parasitica*
- *Laura Duran-Suja*: The tunicate *Polycarpa pomaria*, a possible contributor to cold-water coral reef architecture
- *Pablo Diaz*: Can pelagic gastropods be used to assess the impacts of ocean acidification in the North Sea?
- *Fiona Murray*: Working with industry to collect ocean acidification data
- Alan Fox: Connectivity of the network of *Lophelia pertusa* reefs in Scottish Marine Protected Areas
- *Anna Kintner*: Limitations in use of MODIS satellite flyover imagery to assess nearshore hydromedusan blooms
- *Sara Campana*: Time-related gene expression profiles of HSP70 in the coral *Stylophora pistillata* after exposure to a temperature shock
- *Susan Miller*: Marine Invasive Non-Native Species found in Orkneys Marinas and Harbours
- *Fionn Murphy*: Waste water treatment plants (WWTP) as a source of microplastics in the aquatic environment
- *Adam Hughes*: Integrated Multi-Trophic Aquaculture: will it work in Scotland?

11.45-12.30 **MCCIP - MPA / GES Special Topic Launch**

12.30-13.00 Invited speaker: **Prof Phil Weaver**, Seascope Consulting. "Deep Sea Mining"

13.00-13.45 **Lunch** and networking.

13.45-15.45 **MASTS General Science Session 2** in the Main Auditorium (Auditoria B/C) and a **Special Session** on "The Deep Sea" in Auditorium A.

MASTS General Science Session 2 (Chair: TBC). Talks are 12 minutes each.

- *Elizabeth Masden* (UHI) A simulation update to the Band collision risk model: including uncertainty and variability.
- *Michelle Elliott* (SEPA) Developing Best Practice for Monitoring Transitional Water Fish Communities Under the Water Framework Directive.
- *Amani Becker* (Stirling) Cadmium uptake from sediment by the diatom *Cylindrotheca closterium*.
- *Katharina Lefering* (Strathclyde) Assessing our ability to model underwater light fields for remote sensing and ecosystem model applications.
- *Ankje Frouws* (Edinburgh Napier) The impact of seagrass canopy removal on infaunal macrobenthic communities and belowground carbon storage in Gazi Bay, Kenya.
- *Marie-Lise Schläppy* (UHI) Nutritional value of algae and detritus in the epilithic algal matrix in *Stegastes diencaeus*' (Pomacentridae) territories.
- *Ewan Edwards* (Aberdeen) State-space modelling of geolocation data reveals sex differences in the foraging characteristics of northern fulmars during the pre-laying exodus.

Special Session on “The Deep Sea” (Chair: Dr Bhavani Narayanaswamy – MASTS Deep Sea Forum Convenor). Talks are 15 minutes each. Questions and a discussion will be at the end of all talks.

- *Thom Linley* (Aberdeen) A newly discovered hadal liparid (*Pisces: Liparidae*) from the Mariana Trench
- *Stefan Gary* (SAMS) Estimates of the seasonal variability of volume, heat, and freshwater fluxes in the eastern sub-polar North Atlantic.
- *Alan Jamieson* (Aberdeen) Beyond the Abyss: Tales in the pursuit of hadal science.
- *Mark Johnson* (St Andrews) Hitch-hiking on marine mammal sonar to study deep-sea predator prey interactions.
- *Joanne Porter* (Heriot Watt) Diversity of Bryozoa from offshore and deep water in the North East Atlantic Ocean.
- *Steve Ross* (MASTS Deep Sea & Technology, Platforms & Sensors Forums Visiting Fellow) Improving and developing access to the last great frontier - the deep sea.

15.45-16.30 **Coffee break, networking and E-poster session 2**

	Screen 1	Screen 2	Screen 3	Screen 4	Screen 5	Screen 6	Screen 7
15.50-16.05	Laurence De Clippele	Fiona McIntyre	Maria Milititsky	Gary McCoy	Cathy Winterton	Meriem Kayouche-Reeve	Clara Mackenzie
16.10-16.25	Jenny McLeish	Johanne Vad	Naif Ashri	Rebecca Crawford	Paul Dees	Hassien Alnashiri	

- *Laurence De Clippele*: Using novel mapping tools to constrain the spatial distribution of cold-water coral framework in the Mingulay Reef Complex
- *Fiona McIntyre*: An image analysis method for assessing deep-sea sponge reefs on Rosemary Bank from a towed video camera survey
- *Maria Milititsky*: Assessing deep sea communities through seabed imagery.
- *Gary McCoy*: A first description of the seasonality of the nano and pico-plankton communities in the North East of Scotland
- *Cathy Winterton*: A 100-year record of changing toxic algae in Scottish coastal waters relating to climate change
- *Meriem Kayouche-Reeve*: Independent environmental monitoring and advice for the Sullom Voe Terminal
- *Clara Mackenzie*: The impact of future ocean warming to cellular energetics in the horse mussel, *Modiolus modiolus*.
- *Jenny McLeish*: Molecular and Morphological Identification of Invasive Bullhead in South-East Scotland
- *Johanne Vad*: Environmental assessment of deep-water sponge fields in relation to oil and gas activity: a west of Shetland case of study
- *Naif Ashri*: Ecotoxicology of Sediment-associated Carbon Nanotubes
- *Rebecca Crawford*: An Investigation of Biosecurity Planning in Pentland Firth and Orkney Waters
- *Paul Dees*: Sporadic *Pseudo-nitzschia* spp. blooms and domoic acid production in a Scottish sea loch
- *Hassien Alnashiri*: The Ecotoxicology of Different forms of Copper in Marine Mussels

16.30-18.30 **MASTS General Science Session 3** the Main Auditorium (Auditoria B/C) and a **Special Session** on “**Environmental Hazards**” in Auditorium A.

MASTS General Science Session 3 (Chair: Prof John Baxter). Talks are 12 minutes each. Questions will be at the end of all talks.

- *Catherine Cole* (St Andrews) Can we accurately reconstruct past sea surface temperatures from fossil coral?
- *Robert Wilson* (Strathclyde) Modelling the reduction in overwintering duration of a North Atlantic calanoid copepod due to climate change.
- *Neil Banas* (Strathclyde) Timing, not temperature: Pathways linking climate to phytoplankton, protists, and copepods in new models of two subarctic seas.
- *Seb Hennige* (Heriot Watt) Ocean acidification and the future of cold-water coral reefs
- *Heidi Burdett* (St Andrews) Rapid community-level response by a coralline algal bed to *in-situ* CO₂ enrichment.
- *Alan MacDonald* (Strathclyde) Are rising temperatures to blame for sandeel stock decline?
- *Nick Kamenos* (Glasgow) Significant increases in Great Barrier Reef coral bleaching over the last three centuries
- *Douglas Speirs* (Strathclyde) Modelling the ecosystem effects of ocean acidification using an end-to-end model.

Special Session on “Environmental Hazards” (Chair: Dr Elizabeth Cook). Talks are 15 minutes each. The last 30 minutes of this session will be dedicated to questions and a general discussion.

- *Bella Galil* (Israel Oceanographic and Limnological Research Institute) ‘Double trouble’: the expansion of the Suez Canal and marine bioinvasions in the Mediterranean Sea.
- *Jennifer Loxton* (UHI) Investigations into the life history of *Schizoporella japonica*; a unique and troublesome non-native fouling bryozoan.
- *Chris Nall* (UHI) Biosecurity implications and management solutions for the marine renewable energy industry.
- *Ana Catarino* (Heriot Watt) Quantification of particles in Scottish coastal waters using mussels.
- *Anna Kintner* (St Andrews) Hydromedusan blooms and aquaculture: characterizing the threat.
- *Tony Gutierrez* (Heriot Watt) Preparedness For A Major Oil Spill in The Faroe-Shetland Channel: lessons learnt from Deepwater Horizon.

Day 2: Thursday 1st October 2015

08.30-09.00 Registration and tea/coffee

09.00-09.30 Invited speaker: **Prof Samantha Joye**, University of Georgia. "Open ocean oil spills: How can we best achieve efficient biological oil degradation?"

09.30-10.45 **MASTS General Science Session 4** in the Main Auditorium (Auditoria B/C) (Chair: Prof Brendan McAndrew, MASTS Sustainable Aquaculture Forum Convenor). Talks are 12 mins.

- *Nabeil Salama* (Marine Scotland Science) Determining sea lice distributions in the marine environment.
- *Joanna Wilson* (Stirling) Genotyping of Scottish Mytilus mussel populations using SNP Assays.
- *Thitya Summathed* (Stirling) The effects of clinical nutrition on fish immune status and resistance to viral infection.
- *Christopher Crawford* (University West of Scotland) Chemical Adsorption of Hydrophobic Polycyclic Aromatic Hydrocarbons in the Marine Environment onto Microplastic Polymers and Subsequent Desorption in a Simulated Fish Gut
- *Craig Sanderson* (MASTS Visiting Fellow) Investigation to maximise spore release and settlement success for the commercial red algal species: *Palmaria palmata*.

10.45-11.30 **Coffee break, networking and E-poster session 3**

	Screen 1	Screen 2	Screen 3	Screen 4	Screen 5	Screen 6	Screen 7
10.50-11.05	Eileen Bresnan	Marie-Lise Schläppy	Kirsty Crocket	Tim Brand	Derek Connor		
11.10-11.25	Joly Ghanawi	Phil Gillibrand	Martin Llewellyn	Ben Taylor	Greta Carmona		

- *Eileen Bresnan*: Diversity and seasonality of the microbial community at the Stonehaven coastal ecosystem monitoring site in the north east of Scotland
- *Marie-Lise Schläppy*: Detecting trends using the Reef Check method: more than a decade of citizen science on the Great Barrier Reef.
- *Kirsty Crocket*: Dissolved Fe transport through Loch Etive: Do humic substances enhance Fe export?
- *Tim Brand*: New developments in seawater trace metal analysis at SAMS: automated preconcentration by SeaFAST Pico
- *Derek Connor*: Fast Repetition Rate Fluorometry in Optically Complex Waters
- *Joly Ghanawi*: Coastal fish farms: productivity sites or ecological traps?
- *Philip Gillibrand*: Eddy Generation and Shedding in a Tidally Energetic Channel
- *Martin Llewellyn*: The Atlantic Salmon epidermal microbiome as an accessory to infection with *Lepeophtheirus salmonis*

- *Ben Taylor*: How does saltmarsh restoration affect carbon storage potential in an estuary?
- *Greta Carmona-Antonanzas*: A survey of the ATP-binding cassette (ABC) gene family in the salmon louse

11.30-13.30 **MASTS General Science Session 5** in the Main Auditorium (Auditoria B/C) and a **Special Session on “Ecosystem Services”** in Conference Rooms 6/7.

MASTS General Science Session 5 (Chair: Dr Paul Fernandes – MASTS Fisheries Science Forum Convenor). Talks are 12 minutes each.

- *Robin Cook* (Strathclyde) The effect of seal predation and fishing on the recovery of the West of Scotland cod stock.
- *Amaya Albalat* (Stirling) Post-catch survivability of discarded Norway lobsters (*Nephrops norvegicus*): Towards a regional and ecosystems-based approach.
- *Aidan Hunter* (Strathclyde) A length based stock assessment model applied to west of Scotland haddock and whiting: model estimated declines in growth rate reflect observations from age data analysis.
- *Sophie Elliott* (Glasgow) Juvenile gadoid distribution using baited remote underwater video surveys.
- *M. Mackay* (Edinburgh) A study of small-scale fisher people’s perceptions of policies, resources, and the fishing industry in Sri Lanka using Q-methodology in order to identify the root causes of current industry conflicts.
- *Vanessa Trijoulet* (Strathclyde) Estimation of grey seal predation mortality on the three main commercial demersal species in West of Scotland and implications for stock assessments and MSY calculation.
- *Mike Heath* (Strathclyde) Modelling the whole-ecosystem impacts of trawling.

Special Session on “Ecosystem Services” (Chairs: Prof. Nick Hanley – MASTS Coastal Zone Forum Convenor, and Dr Sam Anson - Marine Scotland).

- *Nicola Beaumont* (Plymouth Marine Laboratory) Introduction to Ecosystem Services and the recent VALMAR project (40mins)
- *Caroline Griffin* (Stirling) A Stated Choice Experiment to assess beach management priorities (20mins)
- *Francesca Mancini* (Aberdeen) Navigating towards sustainable wildlife tourism using a qualitative modelling approach (20mins)
- *Jacqueline Tweddle* (Aberdeen) Bringing the ecosystem services concept into marine management decisions (20mins)
- *Craig Brownlie* (Strathclyde) How to value fish as a provisioning service (10mins)

- Open Discussion to conclude (10mins)

13.30-17.30 **Decommissioning and Wreck Removal Workshop** in Auditorium A

13.30-14.15 **Lunch** and networking opportunities.

14.15-16.15 **MASTS General Science Session 6** in the Main Auditorium (Auditoria B/C) and a **Special Session** on “**Coastal Processes & Dynamics**” in Conference Rooms 6/7.

MASTS General Science Session 6 (Chair: Dr Phil Gillibrand – MASTS Numerical Hydrodynamic Modelling Forum Convenor). Talks are 12 minutes each. Questions will be at the end of all talks.

- *Rory O’Hara Murray on behalf of Alejandro Gallego* (Marine Scotland Science) An unstructured-grid hydrodynamic model of Scottish shelf waters available to the science community.
- *Rory O’Hara Murray* (Marine Scotland Science) A look to the future: maximizing the sustainable tidal stream energy potential of the Pentland Firth.
- *Laura Williamson* (Aberdeen) Diurnal Variation in Harbour Porpoise Detection in Different Habitats.
- *Marie Kearns* (St Andrews) Assessing harbour seal body condition using Unmanned Aerial Vehicles (UAVs) in Loch Fleet, Scotland.
- *Georgia Conolly* (Aberdeen) Sex and food drive night time activity in the northern fulmar.
- *Marius Dewar* (Heriot Watt) Interaction of Leaked Bubbly Gas with Small-Scale Turbulent Oceans.
- *Ildiko Somorjai* (St Andrews) Amphioxus, a marine invertebrate chordate model for evolution, genomics and biomedicine.

Special Session on “Coastal Processes & Dynamics” (Chair: Dr Jim Hansom, MASTS Coastal Processes & Dynamics Forum Convenor). Talks are 12mins each, plus 3mins for questions.

- *Stewart Angus* (Scottish Natural Heritage) Scottish saline lagoons: the monitoring challenge of a habitat where almost everything is variable
- *Richard Bates* (St Andrews) Integrated investigations of Coastal Zone sites – lessons from past events
- *James Fitton* (Glasgow) The National Coastal Change Assessment: results from pilot areas
- *Kyla Orr* (Independent Scientist) Ecosystem services provided by the kelp *Laminaria hyperborea* in the Uists, Scotland

- *Maria Potouroglou* (Edinburgh Napier) Scotland's Blue Carbon resources: Seagrasses and their carbon storage capacity
- *David Tappin* (British Geological Survey) Tsunamis – learning from recent events
- *Larissa Naylor* (Glasgow) Rock Coast Dynamics: Theory and Applications
- *Tom Dawson* (St Andrews) The role and value of volunteers in the observation, monitoring and documentation of coastal change: a view from the Scotland's Coastal Heritage at Risk Project

16.15-17.00 Coffee, Networking opportunities & **E-poster session 4**

	Screen 1	Screen 2	Screen 3	Screen 4	Screen 5	Screen 6	Screen 7
16.30-16.50	Greta Carmona	Jason McIlvenny	Jacopo Agagliate	Berit Rabe	Christine Rolin	Nabeil Salama	Kristina Ulrich

- *Greta Carmona-Antonanzas*: Identifying genetic determinants of drug susceptibility in salmon lice
- *Jason McIlvenny*: Use of autonomous surface marine robotic platforms for environmental monitoring in the Atlantic areas: North Scotland and Portugal
- *Jacopo Agagliate*: Flow cytometric determination of particle size and refractive index distributions
- *Berit Rabe*: Implications on farm siting in a dynamically wide sea loch
- *Christine Rolin*: Working with coastal communities to grow seaweed
- *Nabeil Salama*: Constructing viral transmission networks between marine fish farms using simplified hydrodynamic principles
- *Kristina Ulrich*: Evolution of Infectious Pancreatic Necrosis Virus- IPNV

17.00-18.15 **MASTS General Science Session 7** the Main Auditorium (Auditoria B/C)
(Chair: Dr Mark James). Talks are 15 minutes each. Questions will be at the end of all talks.

- *Andrew Miller* (MASTS Visiting Fellow) Application of a non-invasive scanning ion-sensitive microprobe to investigate the contribution made to homeostatic Ca²⁺ regulation by the scales of sea trout.
- *Daniel Hallam* (MMO) Sustainable data for sustainable management: Use, reuse and presentation of AIS shipping data.
- *Dickon Howell* (Marine Management Organisation) Science for integrated marine management.
- *Esther Brooker* (Scotlink) Living with the Seas: A vision for marine planning in Scotland.

18.15-18.30 **Conference Closing Remarks & Prize Giving** (Prof David Paterson)

19.30-late ASM Conference Dinner and Ceilidh at the Millennium Hotel (ticketed event)

Day 3: Friday 2nd October 2015

This third day of the MASTS ASM is for associated meetings, seminars, training sessions and workshops. Find out more from <http://www.masts.ac.uk/annual-science-meeting/2015-workshops/>

Friday breaks are: 10.30-11.00 for morning coffee, lunch is at 12.30-13.30 and afternoon coffee break is 15.00-15.30.

Confirmed Workshops:

Two day workshop:

- Decommissioning and Wreck Removal (13.30-17.30 on Thursday 1st October and 08.45-12.45 on Friday 2nd October 2015). If this workshop is the only part of the ASM that you will be attending, please contact masts@st-andrews.ac.uk for a registration discount code.

Morning workshops:

- European Marine Biological Resource Centre Workshop
- Scottish Microplastics Research Group (SMRG) Workshop
- Sustainable Aquaculture

Afternoon workshops:

- Extended Ellet Line 2015: Shaping the future and celebrating 40 years of science

All Day workshops:

- Issues and opportunities at the interface between engineering and ecology in offshore and marine renewables, including the TeraWatt Project as a case study
- 'Using sound science responsibly' - developing the knowledge and tools to address priorities, trade-offs and opportunities in marine planning

Confirmed Exhibitors

Please contact masts@st-andrews.ac.uk if you are interested in exhibiting. MASTS is delighted to host the following exhibitors:

- Marine Scotland Science
- Seb Hennige and Lauren McWhinnie – Using cartoons to engage with marine science
- Lochaline Dive Centre
- Elementx
- Shetland Oil Terminal Environmental Advisory Group

- SMART – Statistics and Mathematics Advice, Research & Training