



MASTS

5th Annual Science Meeting



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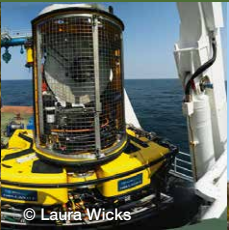
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INFLUENCING OUR MARINE FUTURE

e-posters // networking // decommissioning // aquaculture // biodiversity // deep sea // environmental hazards // coastal processes and dynamics // spatial planning // climate change // fisheries // ecosystem services // modelling // microplastics // marine renewables // workshops // broadening knowledge // addressing policy and regulation issues

30th September – 2nd October 2015

The Technology & Innovation Centre,
University of Strathclyde, Glasgow

Register now: <https://www.eventsforce.net/standrews/40/home>

www.masts.ac.uk/annual-science-meeting

DAY 1

Wednesday 30th 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.
- **William Sanderson** (Heriot Watt)
'Sliding baselines' in a marine protected area: the native oyster as a case study.

DAY 1

11.00 – 11.45

Coffee break, networking and **E-poster Session 1**

11.05 – 11.20

- **Sonja Rueckert** (screen 1)
Parasites of deep-sea fish *Simenchelys parasitica*.
- **Laura Duran-Suja** (screen 2)
The tunicate *Polycarpa pomaria*, a possible contributor to cold-water coral reef architecture.
- **Pablo Diaz** (screen 3)
Can pelagic gastropods be used to assess the impacts of ocean acidification in the North Sea?
- **Fiona Murray** (screen 4)
Working with industry to collect ocean acidification data.

11.20 – 11.40

- **Alan Fox** (screen 5)
Connectivity of the network of *Lophelia pertusa* reefs in Scottish Marine Protected Areas.
- **Adrian Moore** (screen 6)
Seabed mapping
- **Anna Kintner** (screen 1)
Limitations in use of MODIS satellite flyover imagery to assess nearshore hydromedusan blooms.
- **Sara Campana** (screen 2)
Time-related gene expression profiles of HSP70 in the coral *Stylophora pistillata* after exposure to a temperature shock.
- **Susan Miller** (screen 3)
Marine Invasive Non-Native Species found in Orkneys Marinas and Harbours.
- **Fionn Murphy** (screen 4)
Waste water treatment plants (WWTP) as a source of microplastics in the aquatic environment.
- **Adam Hughes** (screen 5)
Integrated Multi-Trophic Aquaculture: will it work in Scotland?

DAY 1

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: Dr Lois Calder – Dean of the MASTS Graduate School). 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 macrobenthos in a
tropical seagrass meadow 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.

DAY 1

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

15.50 – 16.05

- **Laurence De Clippele** (screen 1)
Using novel mapping tools to constrain the spatial distribution of cold-water coral framework in the Mingulay Reef Complex.
- **Fiona McIntyre** (screen 2)
An image analysis method for assessing deep-sea sponge reefs on Rosemary Bank from a towed video camera survey.
- **Maria Milititsky** (screen3)
Assessing deep sea communities through seabed imagery.
- **Gary McCoy** (screen 4)
A first description of the seasonality of the nano and pico-plankton communities in the North East of Scotland.

DAY 1

16.10 – 16.25

- **Meriem Kayouche-Reeve** (screen 6)
Independent environmental monitoring and advice for the Sullom Voe Terminal.
- **Clara Mackenzie** (screen 7)
The impact of future ocean warming to cellular energetics in the horse mussel, *Modiolus modiolus*.
- **Johanne Vad** (screen 2)
Environmental assessment of deep-water sponge fields in relation to oil and gas activity: a west of Shetland case of study.
- **Naif Ashri** (screen 3)
Ecotoxicology of Sediment-associated Carbon Nanotubes.
- **Rebecca Crawford** (screen 4)
An Investigation of Biosecurity Planning in Pentland Firth and Orkney Waters.
- **Paul Dees** (screen 5)
Sporadic Pseudo-nitzschia spp. blooms and domoic acid production in a Scottish sea loch.
- **Hassien Alnashiri** (screen 6)
The Ecotoxicology of Different forms of Copper in Marine Mussels.

16.30 – 18.30

MASTS General Science Session 3

in 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.

DAY 1

- **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.
- **Sam Collin** (Scottish Wildlife Trust)
The Shetland Islands Biosecurity Plan: need, development, and implementation.
- **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 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*.

DAY 2

10.45 – 11.30

Coffee break, networking and **E-poster Session 3**

10.50 – 11.05

- **Eileen Bresnan** (screen 1)

Diversity and seasonality of the microbial community at the Stonehaven coastal ecosystem monitoring site in the north east of Scotland.

- **Marie-Lise Schläppy** (screen 2)

Detecting trends using the Reef Check method: more than a decade of citizen science on the Great Barrier Reef.

- **Kirsty Crocket** (screen 3)

Dissolved Fe transport through Loch Etive: Do humic substances enhance Fe export?

- **Tim Brand** (screen 4)

New developments in seawater trace metal analysis at SAMS: automated preconcentration by SeaFAST Pico.

- **Derek Connor** (screen 5)

Fast Repetition Rate Fluorometry in Optically Complex Waters.

11.10 – 11.25

- **Joly Ghanawi** (screen 1)

Coastal fish farms: productivity sites or ecological traps?

- **Philip Gillibrand** (screen 2)

Eddy Generation and Shedding in a Tidally Energetic Channel.

- **Martin Llewellyn** (screen 3)

The Atlantic Salmon epidermal microbiome as an accessory to infection with *Lepeophtheirus salmonis*.

- **Ben Taylor** (screen 4)

How does saltmarsh restoration affect carbon storage potential in an estuary?

- **Greta Carmona-Antonanzas** (screen 5)

A survey of the ATP-binding cassette (ABC) gene family in the salmon louse.

- **Cathy Winterton** (screen 6)

A 100-year record of changing toxic algae in Scottish coastal waters relating to climate change.

DAY 2

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.

- **Vanessa Trijoulet (on behalf of 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)
Predictive substratum modelling for juvenile gadoid distribution.
- **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.

DAY 2

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. Dr Lois Calder, Dean of the MASTS Graduate School will be available at the MASTS stand on level 2 to speak with delegates.

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.

DAY 2

- **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 break, networking and E-poster Session 4

16.30 – 16.50

- **Greta Carmona-Antonanzas** (screen 1)
Identifying genetic determinants of drug susceptibility in salmon lice.
- **Jason McIlvenny** (screen 2)
Use of autonomous surface marine robotic platforms for environmental monitoring in the Atlantic areas: North Scotland and Portugal.
- **Jacopo Agagliate** (screen 3)
Flow cytometric determination of particle size and refractive index distributions.
- **Berit Rabe** (screen 4)
Implications on farm siting in a dynamically wide sea loch.
- **Christine Rolin** (screen 5)
Working with coastal communities to grow seaweed.
- **Nabeil Salama** (screen 6)
Constructing viral transmission networks between marine fish farms using simplified hydrodynamic principles.
- **Kristina Ulrich** (screen 7)
Evolution of Infectious Pancreatic Necrosis Virus- IPNV.

17.00 – 18.15

MASTS General Science Session 7

in 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

- **Auditorium A** – 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

- **Conference room 3** (09.30 – 12.30) – European Marine Biological Resource Centre Workshop
- **Conference room 2** (09.30 – 12.30) – Scottish Microplastics Research Group (SMRG) Workshop
- **Auditorium B/C** (08.45 – 13.00) – Sustainable Aquaculture

Afternoon workshops

- **Conference room 3** (13.30 – 16.00) – Extended Ellet Line 2015: Shaping the future and celebrating 40 years of science
- **Auditorium A** (13.30 – 16.00) – Are we doing the right thing in removing man-made structures from the marine environment? Facilitated discussion group.

All Day workshops

- **Conference room 6/7** (09.00 – 17.00) – Issues and opportunities at the interface between engineering and ecology in offshore and marine renewables, including the TeraWatt Project as a case study
- **Conference room 4/5** (09.00 – 15.00) – '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
- ORJIP Ocean Energy
- Fisheries Innovation Scotland
- Amy Scott Murray with 3D animations
- Numerical Hydrodynamic Modelling Forum
- A "Get Started with Twitter" desk

Locations

The Technology & Innovation Centre, University of Strathclyde, Glasgow

The Marine Alliance for Science and Technology for Scotland will hold its 5th Annual Science Meeting (ASM) at the University of Strathclyde, Glasgow.

Technology & Innovation Centre

University of Strathclyde
99 George Street
Glasgow
G1 1RD

TIC Main Reception

t: +44 (0) 141 444 7000

e: TIC-reception@strath.ac.uk

w: <http://www.strath.ac.uk/research/technologyandinnovationcentre/>

Millennium Hotel Glasgow

We invite you to join us at the conference dinner and ceilidh to be held on the evening of Thursday 1st October at the Millennium Hotel Glasgow.

Millennium Hotel Glasgow

George Square
Glasgow
G2 1DS

w: <http://www.millenniumhotels.co.uk/millenniumglasgow/>



MASTS

c/o Scottish Oceans Institute
East Sands
University of St Andrews
St Andrews
KY16 8LB

t: +44 (0) 1334 463470

f: +44 (0) 1334 463443

w: www.masts.ac.uk/annual-science-meeting