

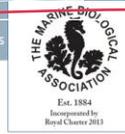


The European
Network of
Marine
Stations

MARS newsletter

December
2019

European Network of Marine Research Institutes and Stations



Why 21st century marine stations are essential to address societal challenges

Matt Frost

President Mars (European Network of Marine Stations), MBA Deputy Director

European Marine Board, Brown Bag Lunch,
Royal Belgian Institute of Natural Sciences,
Brussels, October 2nd 2019



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First World Conference Marine Stations

The first World Conference for Directors of marine stations is planned for October next year. We are hoping that 2020 will see marine directors across the world come together to promote the importance of marine stations for science, policy and the general public. More information will follow soon.

Call for new board members

We are still looking for new members of the Executive Board. Please let us know if you would like to find out more about contributing as a member of the MARS Board.

MARS - “Supporting a decade of Marine Science in Europe and beyond”.

Dear Mars Member

Welcome once again to our MARS update. After launching the new strategy last year, the focus this year has been very much on how MARS can evolve to support marine stations at a time when they will have a key role to play in meeting societal challenges. This theme of the importance of marine stations formed the basis for a number of talks given in 2019.

In February MARS presented a talk in Tokyo at the invitation of the Japanese Marine Biological Association (JAMBIO). The focus of my talk was regional and global Links in marine laboratories and it was an excellent opportunity to see how MARS and JAMBIO could work together in promoting the value of marine stations.

Then in October 2019 I was invited by the European Marine Board to give a talk in Brussels on the subject of “Why 21st century marine stations are essential to address societal challenges” with a key focus of this talk being the long-term biodiversity monitoring often undertaken at these stations. Many marine stations have excellent marine biodiversity inventories and have maintained time-series for decades but with many being at risk.

More recently I gave a talk on the same theme at Moscow State University as part of a visit to discuss the World Association of Marine stations. This talk had a broader focus in looking in more detail at the role marine stations also play in education, public engagement and fundamental research. A recent report on progress for the UN Sustainable Development Goals (SDGs) showed a lack of progress in certain SDGs including SDG 13 (Climate) and SDG 14 (Life Below Water). Marine stations must also find a way therefore of contributing to the UN Decade of Ocean Science, aimed to ensure the goals of SDG14 are met.

I can of course continue to give talks on the value of marine stations but the point of MARS is that we are strongest with a shared and coordinated voice so that policy-makers (and funders) are aware of the vital role that marine stations continue to play. I am hoping therefore that 2020 will see marine directors across the world come together in October 2020 (details to follow) to see how we can all contribute to the promotion of marine stations.

Could I also thank you all for your current and ongoing support for MARS and have a good Christmas and New Year!

Dr Matt Frost, President of MARS

EMBS55

Gdansk, Poland

Autumn 2020

The next EMBS will be organized by the University of Gdańsk, Poland.

Place: Gdańsk, Poland
Dates: 24-28 August 2020

Topics:

1. Main stressors and their impact on ecosystem health
2. Marine molecular ecology – new tools and new findings
3. Diversity and physiology of marine organisms. Is there still anything to discover?
4. Marine living resources – environmental significance
5. General session

Current EMBS representatives:

President: Professor Simonetta Frascchetti, Università degli studi di Napoli Federico II, Italy

Secretary: Ms. Leen Vandepitte, Flanders Marine Institute, Belgium

Communications Officer: Dr. Benjamin Weigel, University of Helsinki, Finland

For winners of the MARS/MBA awards for best poster, please see Page 8.



54th European Marine Biology Symposium

The European Marine Biology Symposium series was initiated in Germany in 1960 and symposia have been held annually since 1966. It has a great tradition as a forum for discussing exciting new developments in marine biology in a friendly informal atmosphere, and celebrating the diversity of research cultures in Europe and around the world.

EMBS54 was held in Dublin on August 25-29 2019. It included a great programme of talks and posters spanning a wide spectrum of species, habitats and approaches and addressing a range of important concepts and topics. In addition to posters and presentations on general aspects of marine biology, the core themes and keynote presentations focussed on rapid change, movement, blue growth and functional traits.

There were 183 participants, including representatives of five organisations that presented exhibitions at the conference. Delegates came from all over Europe and from the wider world including Japan, Chile,

Canada, USA, Hong Kong, Saudi Arabia, Australia and New Zealand.

New President

During this year's delegate meeting, the committee elected the new President. We are delighted to welcome Prof Simonetta Frascchetti from the Università degli studi di Napoli Federico II, Italy, as new President of the EMBS!

After three successful and engaging years as being president, we give a big thank you to Prof Tasman Crowe, who has excellently steered the EMBS forward and maintained its spirit. We thank Tas and his team as well for organizing a truly wonderful and inspiring 54th EMBS in Dublin.

The main venue for the conference was University College Dublin and the conference dinner was held at Trinity College Dublin.

The conference dinner was followed by a traditional céilí dance and the social programme also included a chance for delegates to try their hand at hurling as part of the

'Yellow Submarine' competition.

The excursions included boat and kayak trips in the Dublin Bay Biosphere and a visit to the historic monastic settlement at Glendalough hosted by the UCD School of Archaeology.

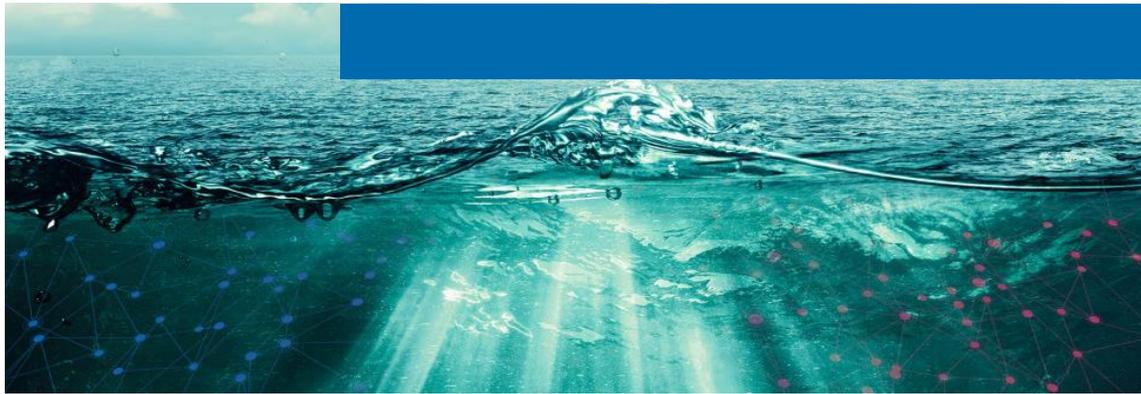
The overall impression was of a very successful conference, with a high level of enthusiasm from all of the delegates and exhibitors!

Prof Tasman Crowe
Outgoing President EMBS
Host of EMBS54



Emma Lockley (r), prize winner best talk EMBS54

Maternal effects buffer biased sex ratios in species with temperature dependent sex determination – the case of the loggerhead turtle. (Sponsored by OYSTER)



Annual Report (2019)

Activities

World Association of Marine Stations (WAMS): The main focus of MARS in this year was on the promotion of the MARS network and the establishment and the further organization of the World Congress for marine Directors in 2020. To this end several meetings have been attended by the President (see page 1).

European Science Diving Panel (ESDP): Jean-Pierre Féral has been invited as a coopted member of the Board to strengthen the cooperation between MARS and the ESDP. The formal appointment will be during the next Executive Board meeting.

European Marine Biology Symposium (EMBS): MARS supported the 54th EMBS in Dublin, Ireland. MARS provided three prizes for best student posters jointly with the Marine Biological Association (MBA).

Website and communications: Ongoing updates were made to the MARS website. The website structure has been changed to facilitate management by the new secretariat. A photo archive has been added to the EMBS pages.

Secretariat: In 2020 the secretariat will move back to Herman Hummel and will have a more administrative function.

The new secretariat will take over the website management as well.

MARS Membership

In 2019 MARS started with the collection of subscription fees. MARS currently has 63 members with the geographic distribution being as follows: Albania (1); Belgium (1); Denmark (1); Finland (2); France (9); Germany (2); Greece (1); Ireland (1); Italy (10); Latvia (1); Lithuania (1); Malta (1); Norway (2); Poland (3); Portugal (7); Russia (2); Scotland, UK (2); Slovenia (1); Spain (4); Sweden (3); Netherlands (2); UK (6). The full list of members can be found at the MARS website.

Members of the Executive Board

- Matt Frost
Marine Biological Association (MBA), UK - **President**
- Alexander Tzvetlin
White Sea Biological Station, Russia
- Iwona Pawliczka
Institute of Oceanography, University of Gdansk, Poland
- Christos Arvanitidis
Institute of Marine Biology, Biotechnology and Aquaculture (IMBBC-HCMR), Greece
- Jesus Troncoso
University of Vigo (UVIGO), Spain

Coopted members

- Herman Hummel
Royal Netherlands Institute for Sea Research (NIOZ), Netherlands - **Past president, secretariat (from 2020)**
- Jean-Pierre Féral
ESDP - Station Marine D'Endoume (IMBE), France - **Liaison ESDP (invited)**

Finances

Balance sheet expenses and income 2019 in €

2018	Beginning Balance (Reservation secretariat 1500 €)	14012
Income	Interest	24
	Membership fees	10850
	Total income	10874
Expenses	Administrative costs	-89
	Awards	-175
	Local organisation	-1479
	Secretariat and web management (-reservation 2018)	-6500
	Web hosting	-579
	Total expenses	-8823
2019	Ending balance	16063

ESDP calls:

- Looking for a host for the next ESDP meeting

To promote scientific diving, the ESDP aims to organize one of its annual meetings in countries where scientific diving is not yet legally recognized.

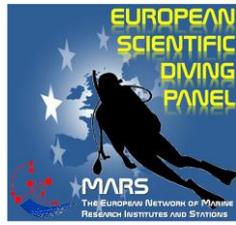
If you are willing and able to host a meeting, please contact us. For practical reasons, it is desirable that this destination be easily accessible, close to an airport even if some research stations are located in remote places.

The ESDP is self supportive, only a venue is needed and help with the local organisation.

Please use the contact form of the ESDP website to answer (<http://ssd.imbe.fr/Contact-form>).

- References of high impact factor articles supported by Scientific Diving

The panel calls the marine station staff to send full references (including DOI) of article in high ranking journals (impact factor higher than 5) published from 2015-2019 to jean-pierre.feral@imbe.fr



European Scientific Diving Panel

The ESDP focuses on operational and safety issues, highlighting the usefulness of Scientific Diving, and to encourage international mobility of scientific divers

The ESDP is under the umbrella of the MARS network for one year now. The first year demonstrated the benefits of cooperation for both networks. This situation allowed the panel to continue its action. In 2020 the chairman of the ESDP will enter the Executive Board of MARS as coopted member to expand the cooperation. The ESDP has welcomed new countries this year: Norway, Poland and Slovenia. Others have also made contact and will propose their application in 2020.

As in previous years, two meetings were organized in 2019. The spring meeting via a videoconference led by Germany and the fall meeting in Paris was held face-to-face.

Highlights of the ESDP meetings:

- The ESDP has approved a consultation document on the medical examinations required for Scientific Diving (SD) in Europe as well as in the USA and Australia. This document will be published in the journal "Diving and Hyperbaric Medicine" as well as in an online summary document.

- Another document is being prepared on the requirements (national rules and regulation) of the different countries to authorize the use of SD by scientific visitors. This will facilitate the exchange of experts and expertise within Europe and beyond.

- In 2020, the ESDP will start to update its publication list demonstrating that scientific diving is a highly valuable research technique permitting significant results published in highest ranked journals. Staff of marine stations are kindly invited to contribute to this effort.

- The ESDP is aware of the new established World Scientific Diving Training Council. It acknowledged the existence of WSDTC and stays in contact with it, ensuring that the international qualification will meet the requirements of the different EU countries. If some of them will be below the level of the European standards, their holders will be required to take additional training in many countries to be qualified for SD. For the same reasons, the ESDP calls for calls for caution regarding a growing number of proposals from training organisations (including "European" ones) to deliver certifications which will not be recognized by some EU states.

- One of the goals of the ESDP is to promote and coordinate training in SD. During its last meeting, the panel concluded that advertising and coordinating "ESDP" SD training courses under one umbrella - within the MARS network - will be of mutual benefit (see next page). This will be discussed with the MARS Executive Board

Activities:

- The ESDP has created a working group to prepare a document on the use (fullness) of rebreathers for scientific diving. For this, a workshop will be held in Corsica in September 2020 (sharing experiences, practices and creating a European network of experts). Details will follow soon.

- This year, a 4th joint training event (Sweden, Finland and Germany) was organized in Kristineberg and Helgoland. The training was based on the requirements for German and Swedish national examinations for professional SD. It included five weeks of practical training (with theory) with additional two weeks of e-learning,

- The ESDP joined the 5th European Conference on Scientific Diving (ECSD) organized in Poland by Institute of Oceanology PAN, Sopot.

- Delegates will attend the 6th ECSD, Freiberg, April 2020 as well as the 7th ECSD, Roscoff, April 2021



Amsterdam Island
Southern Indian Ocean
© C. Marschal/Proteker



Proposal for a networking initiative to Coordinate Scientific Diver Training in Europe through MARS and ESDP

By Jouni Leinikki, ESDP's Finnish delegate

Much of the world's scientific diving and scientific diver training takes place at marine research stations at the sea. The aim of training courses is to qualify scientists to safely perform their tasks by diving or to enable them to utilize new skills and techniques underwater.

The standards for European Scientific Diver and Advanced European Scientific Diver developed by ESDP for scientific diver training provide a common framework for the basic initial SD training across Europe. This makes it possible, where applicable, to arrange international training courses and have joint pools of participants and training providers. It also enables a network to coordinate training courses to avoid overlapping events. Some course announcements have already been disseminated through ESDP mailing list.

ESDP and MARS can join forces to create a system of European-wide SD training. Such cooperation would benefit scientists and students by increasing the opportunities to obtain SD training filling the ESD standard. European training courses for new techniques would also serve as workshops and generate new science, and new common practices can be introduced to scientific diving through the training courses. Cooperation between marine stations also adds to their interaction and promotes other collaborations.

MARS stations have variable capacities to provide diving equipment and other facilities, while ESDP has connections between the SD instructors in different countries. These need to be assessed, as well as financing sources to assist course participation.

ESDP will coordinate the approval of training courses, ensure a quality control, and spread the information together with MARS.

High impact factor articles supported by Scientific Diving.

The ESDP schedules to update its publication list demonstrating that scientific diving is a highly valuable, even essential, research technique permitting significant results published in highest ranked journals. In 2015, ESDP completed a list of articles, published in journals with impact factor > 5. Some 60 articles were listed (<http://ssd.imbe.fr/To-highlight-benefits-of>).

The panel calls the marine station staff to update the list for the period 2015-2019.

Even if the only criterion IF is actually quite poor, it is an indicator that strikes the mind of policy and decision makers. The goal is to make scientific diving seen as a needed technique at the place it deserves among the scientific techniques.

Please send complete references (including the DOI) to jean-pierre.feral@imbe.fr



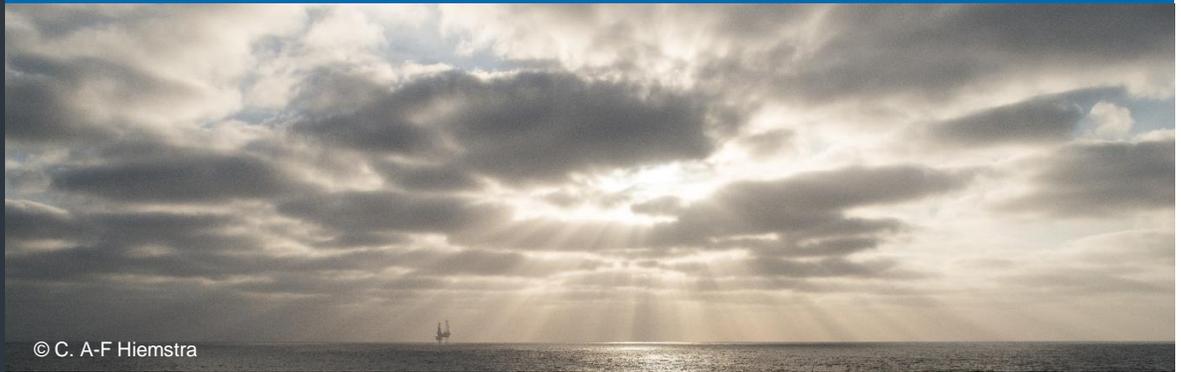
Rebreather technique
© Alain Norro/RBINS



ESDP Training course Sweden
© Natalie Prinz/ZMT

Research priorities (short list)

- Spatio-temporal patterns of primary production of (different groups of) phytoplankton
- Transfer to higher trophic levels (zooplankton, birds, fish)
- Ecology of non commercial (fish) species
- Functional processes, such as rates of nutrient-regeneration, benthic-pelagic coupling, bioturbation and irrigation
- (Cumulative) impacts of artificial structures on biogeochemical and ecological processes (positive/negative)
- Interacting effects of climate change



The Dutch North Sea – a sea in Transition

A demanding challenge for international cooperation by MARS marine stations

In the coming decades drastic changes in the use of the North Sea will take place.

In order to comply with the future energy demand in a more sustainable way it is planned to cover 25 % of the Dutch North Sea with wind-parks. Moreover, it is foreseen to install at 20 % of its surface aquaculture installations for seaweed and shellfish that will enable the needed food transition.

Similar plans are being developed for other EEZ regions of the North Sea.

Such a drastic transition in the (multifunctional) use of the North Sea will need of course also careful studies on the basic natural functions and of the impacts the different forms of use may have on the system. To this end, in the Netherlands recently some initiatives by ministries, policy, research institutions, and NGO's for cooperation in North Sea research have been launched to assess the status of the North Sea and the impact of the energy and food transition.

Policy and marine research institutes jointly take action

A key role in these initiatives to assess the fundamental aspects of environmental issues in the North Sea is played by a couple of centres of marine expertise, among which the marine stations at Texel and Yerseke, belonging to the Royal Netherlands Institute for Sea Research (NIOZ, NL), together with Deltares (Delft, NL) and Wageningen Marine Research (WMR; Den Helder, NL).

These institutes will integrate the existing expertise and aim to further the still needed knowledge to assess and predict the future changes in the North Sea and their impact on the natural structures and functions of this ecosystem, and on the services it may provide to society.

The issues at stake from a policy perspective for the coming decades have recently been formulated by the ministries LNV (Agriculture, Nature and Food Quality), I&W (Infrastructure and Water Management) and EZK (Economic Affairs and Climate Policy) in the strategic research agenda of the North Sea 2030 programme (IDON 2017, Anonymous 2018, Matthijsen et al 2018, Van Urk et al. 2018). Central in the strategic agenda is the emphasis on the Blue Economy, i.e. strengthening of the energy and food production in the North Sea, in conjunction with nature restoration and other uses as sand-extraction.

From the perspective of the marine research and expertise institutions an overview has been given on the status of the North Sea (Herman et al 2015) and major issues and gaps in fundamental research have been identified (Herman et al. 2019).

The major ecological research questions

The overriding question by policy as well as research is whether the ecological carrying capacity and stability of the system are sufficient to cope with the changed and increased multifunctional use of the North Sea, and how the various intended usages do influence the processes in the systems and each other.



Larvæ of sea stars
© L. van Walraven/ NIOZ

All in all, improved modelling and new data of the North Sea ecosystem are needed to understand all geophysical, biogeochemical and ecological interactions, and to estimate whether the carrying capacity and robustness of the natural system is sufficient to support the increased exploitation of the system (i.e. windfarms and aquaculture).

Recently several initiatives have been set up to facilitate international cooperation on these issues.

CORIANE

A first initiative to be mentioned is the Coastal Research Institutes Alliance Northwestern Europe (CORIANE) alliance, which aim is to carry out joint research on the North Sea, including its surrounding Marine Protected Areas. This alliance was initiated 2 years ago by some prominent MARS member marine stations, i.e. the Royal Netherlands Institute for Sea Research (NIOZ, Netherlands), the Flanders Marine Institute (VLIZ, Belgium), and the Alfred Wegener Institute (AWI, Germany) and is open to all other marine research institutes interested in the North Sea. Recently two Danish institutions (National Institute of Aquatic Resources (DTU Aqua) and the Fisheries and Maritime Museum (FIMUS)) have joined the alliance. Two workshops have been held in which the cooperating marine stations and research institutes identified the connecting factors for joint actions in the North Sea, such as to study the carrying capacity of the North Sea, and agreed upon setting up joint expeditions for this.

BANOS

Secondly, the Baltic and North Sea Coordination and Support Action (BANOS, https://www.banoscsa.org/banos_csa), which will succeed the joint Baltic Sea research and development programme to protect the Baltic Sea (BONUS, <https://www.bonusportal.org>) programme. In BONUS, the Baltic countries strongly and successfully cooperated from 2010 to 2017 in environmental studies of the Baltic ecosystem, receiving more than 100 million Euros funding over 8 years. As a follow-up of the successful BONUS approach, for BANOS the strategic research programme is developed at this moment. It is expected that the first calls for projects will be launched in 2021.

Conclusion

In conclusion, the North Sea is in a transition which is mainly socio-economically driven. Environmental issues need urgently to enter the full range of discussions and research on the transitions of the North Sea. Various MARS marine stations are already at the centre of the debates. All the discussions and research actions need to be approached in a multidisciplinary international fashion in order to answer the multi-faceted questions that have to be answered for safeguarding a healthy and natural North Sea system. International cooperation among marine research stations is thus of prime importance.

Herman Hummel, Royal Netherlands Institute for Sea Research

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Upcoming events

- MARS executive Board Meeting, December 2019
- ESDP workshop on the use and usefulness of rebreathers for Scientific Diving, Corsica (France), September 2020
- EMBS 55, Gdansk (Poland), 24-28 August 2020
- World Congress Marine Directors, November 2020

MARS Awards - EMBS

The EMBS is grateful to MARS for its ongoing support of the student prizes. In 2019 MARS-MBA prizes have been awarded for the three best student poster presentations at the 54th EMBS.

First Prize:

Eva Paulus, "Origin of deep-sea hydrothermal vent copepods: comparative analysis of copepod populations along the Mid-Atlantic ridge"

First runner up prize:

Christiaan Hummel, "Fuzzy Cognitive Modelling (FCM): a bottom-up stakeholder driven approach to help managing protected areas"

Second runner up prize:

Mánuis Cunningham, "Microplastics in aquatic systems – genuine threat or over exaggeration?"

The European network of Marine stations

The Marine Stations Network (MARS) was established in 1995 as a forum for bringing together directors of marine stations throughout Europe. Its present mission is:

- To provide a forum for the directors of marine stations and institutes to come together and discuss issues relevant to the whole community in a collaborative and neutral manner.
- To provide an important avenue to feed into European and international marine policy related to marine research funding and broader strategic issues in order to promote the importance of marine stations
- To develop into a more internationally focused network.
- To support the organisation of symposia, workshops, capacity building and training and mobility of early career scientist of MARS Member institutes.
- MARS has an ethos of low membership fees in order to encourage as wide a membership as possible.



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[Social media](#)

MARS membership

The MARS Network is a foundation under Dutch Law. Membership consists of an Executive Board and regular members.

Regular members are at stations, laboratories, institutes or university departments primarily devoted to fundamental marine science and possessing coastal research facilities.

Membership subscription-fees are :

- 350 euros for labs with less than 25 total personnel (FTE permanent personnel including PhD's)
- 700 euros for labs with between 25-50 total personnel
- 1,250 euros for labs with more than 50 total personnel



MARS members 2019

If you want to become a MARS member, please send an email to:

secretariat@marinestations.org