

CHAPTER 5 — OUTREACH AND COMMUNICATION

Extracted from ICM-CSIC biannual report 2017-2018

The Outreach and Communication Service of ICM aims to disseminate its scientific activities and results, as well as to communicate new advances in marine sciences. It is designed to respond to the researchers' and projects' demand for science dissemination in the most clear and efficient way in order to generate an impact at all scales, from the local (neighborhood, city) to the international level. This service organizes activities addressed to adults and children, such as Open Days and access to stands at Science Festivals.



It prepares travelling exhibitions and educational material for schools, and works as a connection between scientists and the press. It also maintains a web portal aimed at the general public, ICMDivulga (<http://icmdivulga.icm.csic.es>), which offers information on research projects carried out at the ICM, the oceanographic cruises in which its researchers take part, the latest results of scientific research, and the dissemination activities carried out by the ICM.

The major lines of action of the **Outreach and Communication** service are:

- **OUTREACH**

Explaining our research to the citizens of Barcelona and to other visitors

- **EDUCATION**

Educational visits, talks, and materials for future generations

- **CITIZEN SCIENCE**

Actively involving society in current research

- **COMMUNICATION**

Communication of ICM's discoveries to both general and specialized audiences

OPEN DOORS

The Open Doors activity at ICM takes place yearly in November, coinciding with Science Week in Barcelona. During Open Doors hundreds of students and families visit our installations and experience hands-on science from our scientific and technical personnel. In 2018, we also organised several extra events:

- **Clean sea, live sea:** Cross-sectional event combining science, art, and sustainability. The objective is to bolster scientific literacy among the general public, and to increase public awareness through emotional hands-on science experiences.
- **From the sea to the table:** Workshop to discuss the importance of sustainable fisheries to ensure the future of marine resources and to show the research lines of ICM with the goal of achieving better collaboration between fishermen and administration. The activity includes a visit to the fishing port and the Barcelona fish market, plus a debate with scientists from the ICM-CSIC.
- **Shark and ray dissection:** Workshop to show the anatomy and ecology of one of the most important marine predators.



SCIENCE FESTIVAL

Every year, Barcelona celebrates a Science Festival to engage society and highlight the science carried out in the city. ICM always participates in this event with various and integrated workshops. Some of the most popular ones are organized by “The Sea In-depth” outreach project, in particular, the workshop about Antarctic biodiversity or about the jellyfish life cycle.



CITY NATURE CHALLENGE 2018

The City Nature Challenge is a friendly competition between cities all around the world to see who can make the most observations of nature, find the most species and engage the most people in citizen science with respect to urban biodiversity. 2018 was the first year that this event was held in Barcelona, using the Natusfera app to gather all the data. ICM, as a promoter institute, together with other research centres, have organized activities to engage people in collecting data about local marine biodiversity. In the end Barcelona was the third city with the most registered observations. In 2019, we will participate again to break our records in terrestrial and marine biodiversity data.



ADDITIONAL PUBLIC VISITS TO ICM

2017

- Jesuites de Casp secondary school — 15/03/2017
- I.E.S Poeta Maragall secondary school — 05/04/2017
- Marine Science students from “San Vicente Mártir”, University of Valencia — 24/03/2017
- “Barcelona, Pol de Ciència” Barceloneta neighbours - 06/04/2017

2018

- Catalunya Biology Olympics — 16/02/2018
- Marine Science students from the University of Barcelona (UB) — 22/10/2018
- "El Congrés" primary school — 13/11/2018
- Students from Vic University — 14/12/2018
- “Col·legi Montserrat” secondary school — 20/12/2018
- Jesuites de Casp secondary school
- I.E.S Poeta Maragall secondary school

THE SEA IN-DEPTH

The Sea In-depth is a project created and developed in a collaboration between the Institute of Marine Sciences (ICM-CSIC) and the “la Caixa” Banking Foundation. This project brings knowledge about the seas and oceans to the forefront of education through various teaching proposals. The project aims to create new educational resources for teachers and educators, making the marine environment a new, and at the same time, complementary source for covering school curriculum contents, but also to fuel (in theory and in practice) the teaching plans of education centres.



LITTLE OCEANOGRAPHERS

The sea, despite being a key element for our planet, is very poorly studied at school. Starting in 2016, the project "Little Oceanographers" aims to close this gap, by bringing the scientific method in a pleasant and dynamic way into schools, and raising awareness among students about the importance of preserving the sea. 200 students from 10 to 12 years old have the opportunity to live the experience of being scientists, becoming young oceanographers during one school year. The project focuses on ocean physics, a topic sometimes difficult to



address at school. It includes: 6 hours of training for the teacher, experimental workshops with scientists, on-line dialogue with scientists on board an oceanographic vessel, the opportunity to become experimental oceanographers by taking physical measurements on-board the historic vessel Santa Eulalia, as well as a conference with all pupils involved in the project, where they have the opportunity to share their work and experiences carried during the project.

PROJECT MAGNET

The Magnet program generates a link between educational centres and institutions of excellence across different fields of knowledge, such as art museums or research centres, which have a commitment to society. Magnet accompanies the schools in the development of an innovative and attractive educational project that generates magnetism and serves as a reference for their territory, both for families and for the educational community. In Catalonia it is promoted by the Jaume Bofill Foundation, the Department of Education, the Diputació de Barcelona, the Consorci d'Educació de Barcelona and the Institut de Ciències de l'Educació of Universitat Autònoma de Barcelona (UAB). Our first Magnet alliance started in 2013 with the Concepció Arenal and Eduard Marquina schools. In 2018, the ICM started an alliance with Tanit school. During the next 4 years, Tanit school will design an innovative educational project with the sea as its axis, relying on ICM to transmit fundamental ocean knowledge.



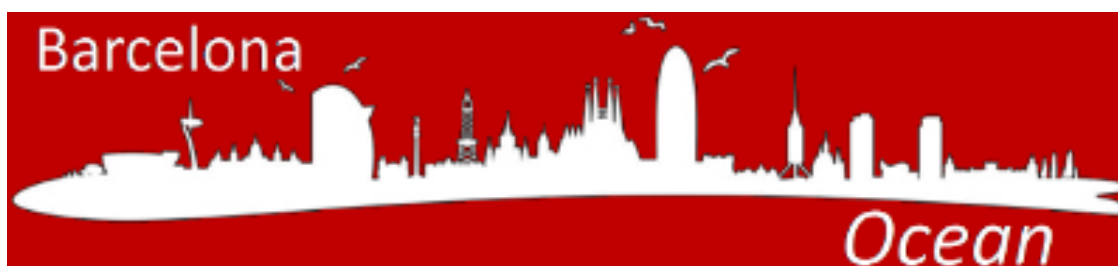
PLASTIC ZERO

Micro-plastics (plastic fragments smaller than 5 mm) have a great impact on marine ecosystems. Among other problems, micro-plastics enter the food chain through filtering marine organisms or fishes that ingest these particles. On the other hand, many marine species can get tangled in macro-plastics. All these problems are well known by the scientific community, and demonstrate the urgent need for social and political action. The Plastic Zero citizen science project, included in the Sea Watchers (Observadores del Mar) platform, seeks to reveal the problem and raise awareness throughout society to motivate social action and to fight the global plastic crisis. This educational project is coordinated by ICM, CEAB, and MMB, and currently involves more than 30 schools in Catalonia and the Balearic Islands.



BARCELONA OCEAN COURSES

Barcelona Ocean is a joint initiative by InvestigAdHoc and researchers at ICM. We offer specialized training in marine sciences to professionals and researchers, graduate students and to the general public. Courses are held at ICM's facilities, located by the beach and near a wide range of accommodations. Barcelona Ocean organizes the courses into three main training blocks: General Topics and Outreach, Fundamentals of Marine Sciences, and Specialized Technical Courses. <http://barcelona-ocean.com/>



2017

- Ocean Dynamics: propagating anomalies — January
- Powering curiosity of oceanography: concepts and tools for primary teachers — February
- Scientific writing — May
- RNA sequencing in a nutshell — Perspectives and applications in marine biology — June
- Intensive hands-on course on metagenomic data processing — August
- Introduction to food web modeling with the software Ecopath and Ecosim — November

2018

- Modeling species distributions: methods and applications — February
- Powering curiosity of oceanography: concepts and tools for primary teachers — February
- Ecopath with Ecosim and Ecospace (Two courses: intro and advanced) October
- Introduction to food web modeling with ecopath with ecosim
- Advanced spatial – temporal modeling with ecospace

RAMON MARGALEF SUMMER COLLOQUIUM

The Ramon Margalef Summer Colloquium (RMSC) has been running yearly since 2013 (<http://www.acoio.org/margalef-summer-colloquia>) and aims at training young researchers in Ecology and related fields, as well as promoting their networking and debate with invited lecturers as well as among themselves. The Colloquium is inspired in the figure of Ramon Margalef (Barcelona, 1919-2004), who was one of the founders of modern ecology.



The Colloquium takes place every July, typically with 20-25 graduate students and young postdocs attending invited lectures and participating in workshops and debates and presenting some final results on one of the Colloquium topics. The lecturers are split between ICM staff and researchers from other institutions. The Colloquium lasts between one and two weeks. The 2017 edition was on “Spatial and temporal patterns in physical-biological oceanic processes: from

scale interaction to the rise of the living ocean” while the 2018 edition explored “Ecology through the ‘-omics’ lens”.

ECOLOGY THROUGH THE OMICS LENS

8TH-13TH JULY 2018
INSTITUT DE CIÈNCIES
DEL MAR, BARCELONA



SEA WATCHERS

The SEA WATCHERS platform is a website aimed at connecting citizens and scientists in order to investigate the current state of our seas and oceans together. Citizens can participate by contributing their observations and experience. We wish to better understand the effects of global warming, pollution, biodiversity changes, invasive species, and overfishing in marine ecosystems. To this end, the platform collects observations on the distribution and abundance of common marine species, the emergence of rare or invasive marine species, or the signs of change in ecosystems (mortality of organisms, amassing of surface and bottom pollution, etc).



Sea Watchers is coordinated by ICM, in collaboration with CEAB and IMEDEA. Since 2012, it has 15 open scientific projects, with more than 10,000 records from more than 2,000 volunteers. This platform relies on the collaboration of citizens and scientists from different national and international centres, to establish a reciprocal dialogue around all these issues based on established records.

NATUSFERA

Natusfera is a free citizen science app created to record, organize, and share observations of nature (natusfera.gbif.es). It aims at stimulating the participation of a wide variety of nature enthusiasts and to promote knowledge of the natural world and its exploration. Anyone can participate by uploading their observations of species (images or sounds). The contributions can be identified with the help of other users (including scientists). You can also identify observations of other users, make questions and exchange comments on these observations. In addition, Natusfera allows to create personal or educational projects in a study area that one can define or customize, something very relevant for the educational community.



iMEDJELLY

iMedJelly is an app that provides daily and real-time information on the presence of jellyfish on the Catalan coast during the summer season. This information is validated by experts from ICM in real time. The information includes the species sighted, their abundances and the level of danger that they present to swimmers. It also has protocols of first aid action against a jellyfish sting and allows for direct contact between swimmers affected by stings and experts in dermatology and toxicology at the Hospital Clínic de Barcelona. In the Citizen Science Section called "Participate", anyone can send observations and photographs to the experts —at ICM.



SCIENTIA MARINA

(ISSN-L 0214-8358)

This journal is the successor to Investigación Pesquera, a journal of marine sciences published since 1955 by ICM. The journal has been included in the Science Citation Index since 1998 (Impact Factor: 1.183). It publishes original papers, reviews, and comments concerning all aspects of marine research.





Institut de Ciències del Mar



NOTICIAS



8 Octubre 2018 - Recursos Marinos Recreativos
Identifican las áreas del Mediterráneo más amenazadas por la actividad humana.
Las zonas más afectadas son principalmente más vulnerables a los cambios asociados al calentamiento global.



17 Octubre 2018 - Recursos Marinos Recreativos
El ICM apuesta por la investigación pesquera para las especies comerciales de Cataluña.
El proyecto servirá para consolidar las medidas actuales y traspasar el conocimiento científico a los cofrades de la costa catalana.



22 Octubre 2018 - Biología Marina y Oceanografía
La aceleración del cambio climático amenaza la sociedad y los sistemas naturales del Mediterráneo.
Un estudio preliminar alerta del incremento de los efectos que el calentamiento tendrá en esta región.



31 Octubre 2018 - Recursos Marinos Recreativos
El ICM desarrolla un test capaz de predecir el sexo en peces.
En base, basados en la detección de marcas genéticas, permite predecir el sexo con una fiabilidad del 90% y puede tener aplicaciones en acuicultura y biología de la conservación.

AGENDA

Del 8 al 16 de noviembre: Semana de la Ciencia en el ICM

- Jueves 8 - Presentación del libro "100 secrets dels oceans"
- Martes 13 - Taller de disección de tiburones y rayas (COMPLETO)
- Miércoles 14 - Jornada de puertas abiertas en el ICM-CSIC
- Jueves 15 - Operación "Mar Net Mar Viu"
- Viernes 16 - Jornada "Del mar al platí". Pescadores, científicos y consumidores juntos por la pesca sostenible.

Toda la información en rodalvulga.icm.csic.es/semana-de-la-ciencia-2018

SOMOS ICM

Naveguem junts per aprendre plegats

Alisiera MAGNET: Escola Tàrrus & ICM-CSIC

Acompañada por el ICM, la escuela incorpora el conocimiento de esta institución en los proyectos científicos. El alumnado aprende a investigar e investigar para comprender, una premisa que la escuela ha convertido que estimula la motivación, el interés y la creatividad, a la vez que potencia el desarrollo de todo tipo de competencias.

Para ver el dossier online, escanea el código QR o ve a bit.ly/boletin-icm-1018

¿Tienes alguna sugerencia? Contacta con rodalvulga@icm.csic.es

 @ICMCSIC
 icm.csic.es
 rodalvulga@icm.csic.es



NEWSLETTER

Every month we publish a free summary of the latest news (in Spanish and English) and talk about any upcoming events at ICM.

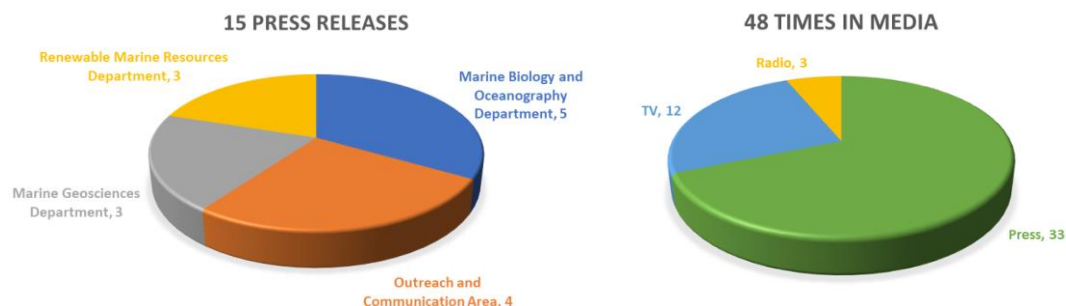
It's available anytime at:

<http://www.icm.csic.es/es/noticias>

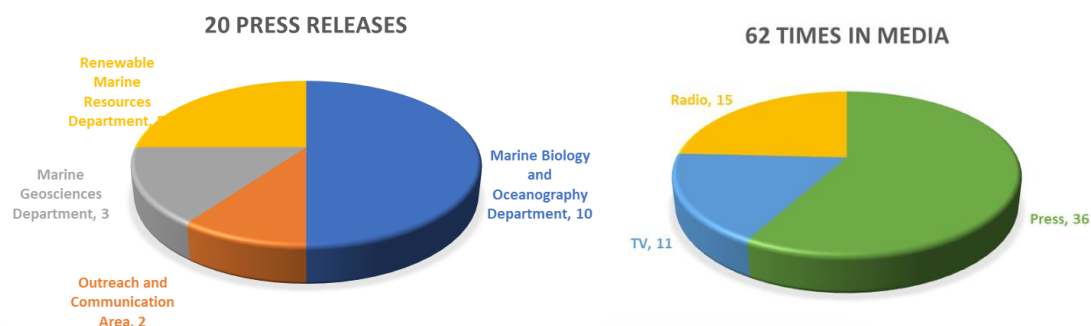
<http://www.icm.csic.es/en/news>

TRADITIONAL AND SOCIAL MEDIA COMMUNICATIONS

Traditional Media Coverage 2017



Traditional Media Coverage 2018



LAVANGUARDIA | Vida

Al Minuto Internacional Política Opinión Vida Deportes Economía Local Gente Cultura Sucesos Temas

CAT-CAMBIO CLIMÁTICO

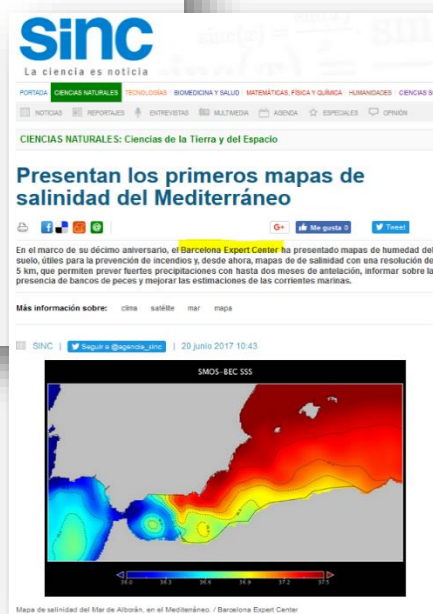
El calentamiento del mar está modificando el epigenoma de los peces

REDACCIÓN
29/09/2017 11:12
Actualizado a
29/09/2017 16:44

Madrid, 29 sep (EFE).- Que el calentamiento global asociado al cambio climático está afectando a la biodiversidad planetaria es un hecho. Ahora, un estudio liderado por españoles ha constatado que el aumento de las temperaturas marinas está modificando algunos rasgos del genoma de los peces.

El trabajo, publicado hoy en Scientific Reports (revista del grupo Nature), muestra que el calentamiento del mar está modificando la variedad de rasgos fenotípicos de los peces, es decir, las características que se heredan y que ayudan a los seres vivos adaptarse al entorno, sobrevivir y desarrollarse.

La investigación, cuyo primer autor es la investigadora Dafni Anastasiadi, contribuirá a conocer mejor el futuro impacto del cambio global en los peces a través de modificaciones epigenéticas en todo el genoma, indica el Consejo Superior de Investigaciones Científicas (CSIC) en una nota.



EM Secciones España Opinión Internacional Economía Sociedad Cultura Deportes Ciencia Tecnología

CAMBIO CLIMÁTICO - un equipo internacional analizó las partículas suspendidas en el aire

El deshielo del Océano Antártico puede formar más nubes

20 JUL 2017 17:18

Comentar →



Brocha de la plataforma antártica Larsen C / AFP

- Es un proceso que hasta ahora no se había tenido en cuenta en los estudios del clima polar
- Se desprende de la Antártida un gigantesco iceberg

El hielo marino antártico se convierte, al deshacerse, en una fuente, desconocida hasta ahora, de nitrógeno atmosférico, un compuesto que favorece la formación de nubes, según un estudio internacional liderado por científicos del **Instituto de Ciencias del Mar del CSIC**.

El resultado de la campaña antártica PEGASO 2015, liderada por los investigadores del CSIC de Barcelona Rafael Simó y Manuel Dall'Osto, ha demostrado que "en la atmósfera de la Antártida **hay partículas que provienen de la vida microscópica que habita en el hielo marino y las aguas que le rodean**".

EL PUNT AVUI+

SECCIONS EDICIÓ IMPRESA EL PUNT AVUI TV MÉS

PORTADA LOCAL SOCIETAT SUCESSOS POLÍTICA ECONOMIA CULTURA EUROPA-MÓN COMUNICACIÓ OPINIÓ IN ENGLISH ESPORTS

MEDI AMBIENT PALAMÓS / ROSES / BLANES - 12 agost 2018 2.00 h

Màxim respecte entre els pescadors per les tres grans zones de veda

- Els patrons majors de Blanes, Palamós i Roses, satisfets pels primers mesos de la zona de repoblació Blanes-Palamós i la de l'escamarià de Roses-Palamós



Un pescador fentant en una barca de pesca CONFRARIA DE PESCADORS DE PALAMÓS

LAVANGUARDIA | Girona

Frente común para recuperar el fondo marino del Cap de Creus

- Varias pruebas piloto han permitido demostrar que más del 90% de las que se han devuelto al mar sobreviven



Pescadores, científicos y la administración pública se han unido en un proyecto para recuperar y proteger el fondo marino del Cap de Creus. La gorgonia es un animal marino que vive a grandes

EL PAÍS CIENCIA

Hallada una falla en formación bajo el Mediterráneo que ha causado tres terremotos en España y Marruecos

La grieta submarina, de unos 20 kilómetros, concentra la mayor actividad sísmica entre las costas de ambos países

NUÑO DOMÍNGUEZ 23 JUL 2018 19:24 CEST



Un terremoto en 2004 causó 564 en Marruecos. En la imagen habitantes de Imzuren, ante varios edificios gravemente dañados por el temblor. JULIAN ROJAS

Social Media—Twitter @ICMCSIC

Twitter profiles	Followers	Open in
Research groups		
@MBEC_Benthos	60	2015
@MBEC_OL	190	2015
@BECICMRS	42	2017
@BiolReproGroup	29	2018
@EMM_Barcelona	75	2018
Services		
@coo_icm	135	2013
@ScientiaMarina	293	2016
@marbits_bcn	21	2018
Outreach projects		
@obsdelmar	3111	2014
@NatusferaCitSci	1550	2016
@petits_oceans	86	2018
EU projects coordinated by ICM		
@SINGEK_ITN	309	2016
@ProjectMEDEAS	421	2017
@MERCES_eu	618	2016
Training programs		
@margalef_bcn	124	2018
@BarcelonaOCEAN	434	2014



Jun 2018 · 30 días

DATOS DESTACADOS DEL TWEET

Tweet principal tuvo 6.367 impresiones

Los avistamientos de tiburones llaman la atención, pero hay que ser prudente. Con las imágenes disponibles no se puede confirmar al 100% que el de Cabrera sea un tiburón blanco. Aun así, es importante informar de que es una especie en peligro y protegida para su conservación

pic.twitter.com/yLG3kK1ZFT

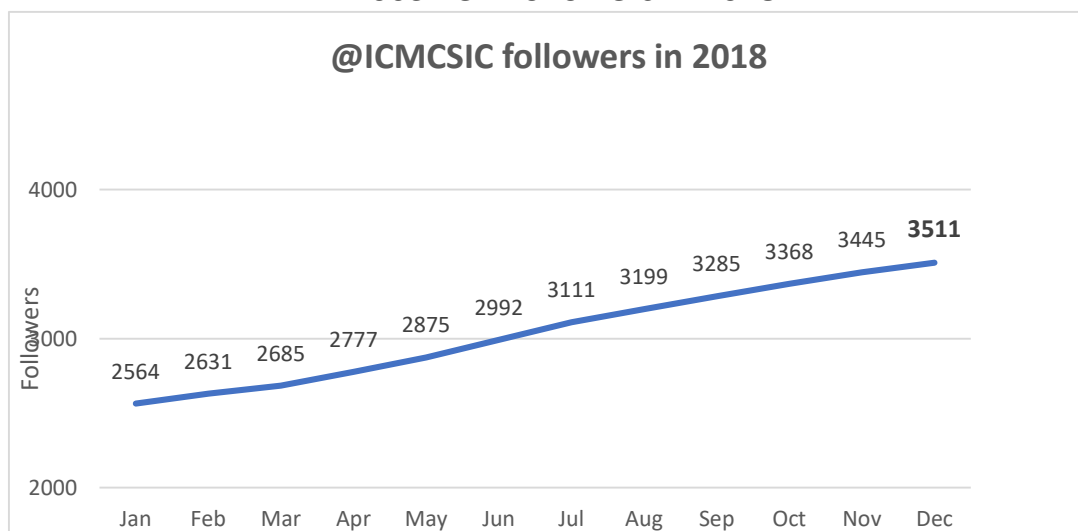


5 69 93

Most popular tweet in 2018

+ 1003 new followers in 2018

@ICMCSIC followers in 2018



OTHER SCIENTIFIC COMMUNICATIONS

2017

- Barcelona Expert Center (BEC) 10th anniversary — 19/06/2017
- The Crustacean Society Mid-Year Meeting 2017 — 19–22/06/2017
- V Ramon Margalef Summer Colloquia — 3–12/07/2017
- MAPMAS (International Workshop on Marine Pollution and Maritime Safety) — 3–6/10/2017
- The 5th Meeting of the Natural Science Technical Collections of Catalonia— 25/10/2017
- ICE-ARC EU project final meeting — 27–29/11/2017
- CLIFISH project meeting - 12/12/2017

2018

- International Ocean Vector Winds Science Team Meeting — 24–26/04/2018
- VI Ramon Margalef Summer Colloquia — 8–13/07/2018
- SIBECOL Foundation act (Iberian Ecological Society) — 02/07/2018
- *European Marine Observation and Data Network* (EMODnet) meeting — 16–17/04/2018

CONFERENCES AT ICM

2017

- 26 Friday Talks (Annex “Talks-year-2017”)
- 6 talks in the “Bosc Ancestral” (Ancestral Forest) conference cycle (Annex “Cicle xerradas-Bosc Ancestral”)

2018

- 35 Friday Talks (Annex “Talks-year-2018”)

