



INTERNATIONAL CHAIR
IN
MARINE ECOSYSTEM SERVICES

Progress report 2014 – 2018

CONTACT

Linwood PENDLETON

linwood.pendleton@univ-brest.fr

Foreword

This international chair began in 2014, but the series of events that would make this chair a success began earlier. On numerous occasions I had met and read the work of researchers from the LabexMER and IUEM. In 2012, I met with a number of these researchers as part of the advisory panel of a project based in New Caledonia. From that meeting, we began a long-term research and professional relationship that began with a visiting professorship to UBO and grew into the International Chair of Marine Ecosystem Services (IC-MES). Through the hard work and vision of the LabexMER, especially its coordinator Vianney Pichereau, and with the support of the IUEM and the Department of Marine Economics and Law (AMURE), the Chair has continued to grow and thrive. Working together, we have secured the resources to extend the Chair well beyond its original three years.

This report covers some of the highlights of the last 3 years of the ICES-MES. There are many elements that are not captured here – the many lunches, hallway meetings, and doctoral committees where research has been discussed and launched. The report cannot begin to reflect the energy of the many students, faculty, researchers, and start-ups who have joined us at our International Chair Tea and Cookies. Nor does it capture all of the support provided by the Region of Brittany, the city of Brest, the Mayor of Ploumoguier or the people of Finistère without whom it would never have been possible for a family of 4 Anglophones to have found a home at the Head of the World (Penn Ar Bed).

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List of Acronyms

Acronym	Meaning
IC-MES	International Chair in Marine Ecosystem Services
UMR	Unité Mixte de Recherche / Mixed research unit combining various French Research Institutes such as UBO, Ifremer, CNRS, IRD, MNHM, etc.

1) The International Chair

The International Chair in Marine Ecosystem Services (IC-MES) was created by the LabexMER in 2014 and is hosted by the AMURE (UMR 6308) lab in the IUEM buildings. The chair objectives are:

- a) Developing high-level interdisciplinary research on the human uses of the sea and coast ;
- b) Increasing the international attractiveness and connections of IUEM and LabexMER on these research questions.

The IC-MES was granted seed funding of €450,000 from the LabexMER for a three-year period 2014-2017. It was extended until end of 2018.

This document aims at presenting all of the IC-MES activities, mostly the International Chair's achievements, at the end of its tenure.

1.A) LabexMER

LabexMER is a cluster of Excellence funded by the French "Investment for the future" program launched in 2011 and ending in 2018. ISblue, starting in 2018-2019, is the "Interdisciplinary graduate School for the blue planet" and will follow up on the expertise, work and network of the LabexMER.

LabexMER is a consortium that combines the best research teams and laboratories in marine sciences in western France, and has the great ambition to propel them as one of the international leaders in this field. LabexMER is coordinated by the European Institute of Marine Studies (IUEM), and includes 7 research units. LabexMER is organized in 5 programs:

- Development of eight research axes, to answer fundamental scientific questions. The IC-MES belongs to Axis 8, which deals with Marine Social-Ecological System Management;
- The international chairs program, from where the International Chair in Marine Ecosystem Services (IC-MES) comes from;
- The international post-doctoral fellowship program, to attract the brightest young scientists who wish to develop their own research project in relation with the LabexMER axes;
- The educational/training program, to promote innovative training, and strengthen the international visibility of marine sciences education in Brest;
- Support for research at sea: an internal call is issued each year to fund small projects providing a strong added value to sea cruises.

1.B) UMR AMURE

The AMURE lab (UMR AMURE – UMR 6308) was created in 2008. It was the merging result of the "Economie Maritime" team of IFREMER, created in 1984, and the "Centre de droit et d'économie de la Mer" of the University of Western Brittany (UBO), created in 1975.

UMR AMURE is one of the main French and European centres for research and training through research on public policy issues related to the management of resources and marine and coastal areas. Its activity is conducted in an interdisciplinary perspective in marine sciences. AMURE is a multidisciplinary laboratory in human and social sciences, bringing together researchers and lecturers-researchers in economics, public and private law, history of law, sociology and anthropology

The field of research carried out within the AMURE lab is defined as the analysis and the economic and legal evaluation of public policies and institutions in the areas of territorial development and maritime activities, the exploitation of resources and conservation of marine and coastal ecosystems.

1.C) IUEM

The IUEM (“Institut Universitaire Européen de la Mer”) is a research institute devoted to the ocean and the coastal environment, where scientists from all disciplinary backgrounds unravel the mysteries of the marine realm. The IUEM is also a University Institute where master and PhD students learn about marine sciences from a unique multidisciplinary perspective, and benefit from innovative training opportunities at the junction between science and society.

The IUEM is a European Institute and active leader in the European strategies for a Blue Growth and for “Healthy and productive oceans”; an institute open to the world through the development of international laboratories. It is a multidisciplinary organization that aims to:

- increase understanding of the marine environment,
- study and observe the interactions between the ocean and the atmosphere and the coast,
- train researchers and scientists in this field,
- contribute to the investigations of natural or human-induced modifications in the marine environment.

2) Who are we?

Dr. Linwood Pendleton, holder of the LabexMER International Chair in Marine Ecosystem Services, gathered a research team that is diverse and interdisciplinary. As people are the core of solid, innovative research, the team embodies a variety in disciplines, cultural backgrounds, nationalities, and work experiences. All team members share an interest for interdisciplinary research as a means to solve the global challenges of our society.

The IC-MES team is always changing, welcoming young researchers and helping them make progress in their careers. To date, two team members have gone on to become university professors (Valia Drakou was the first team post-doctoral researcher and is now a professor at Twente University, Antoine Rivière was a research engineer and is now a professor at ISEN). Amber Himes-Cornell worked with us as a researcher and now works as a full UN employee of the Food and Agriculture Organization in Rome. Here we provide a brief biographical description of our many team members.

2.A) Linwood Pendleton, PhD (U.S.A.)

Dr. Linwood Pendleton is an environmental economist and is, since 2014, the holder of the International Chair of Excellence (IC-MES) at the European Institute for Marine Studies (IUEM).

Since September 2017, Linwood is the Global Lead Scientist for Ocean Science at the World Wildlife Fund (WWF). Dr. Pendleton is also a member of the Executive Planning Group (EPG) who will advise and support the IOC governing bodies to support the development of the Implementation Plan as well as the preparatory activities of the United Nations (UN) Decade of Ocean Science for Sustainable Development.



Figure 1. Linwood PENDLETON

He also is a Senior Scholar at Duke's Nicholas Institute for Environmental Policy Solutions (NIEPS), the director of the Marine Ecosystem Services Partnership (MESP) and served as the founding co-chair of the Marine Biome Working Group of the international Ecosystem Services Partnership.

As of June 2108 he is an Honorary Professor at the Global Change Institute at the University of Queensland (UQ) in Brisbane (Australia).

Linwood was the Acting Chief Economist for the National Oceanic and Atmospheric Administration (NOAA) from 2011-2013, and is an Adjunct Associate Professor at the Duke University Marine Laboratory. He holds masters' degrees in Public Administration from Harvard University and Ecology from Princeton University, and a doctoral degree in Forestry and Environmental Studies from Yale University.

Linwood Pendleton's affiliations:

- Univ Brest, Ifremer, CNRS, UMR 6308, AMURE, IUEM, 29280 Plouzané, France;
- Global Science, World Wildlife Fund, Washington, DC, United States;
- Senior Fellow and Adjunct Professor, Duke University, Durham, NC USA;
- Global Change Institute, University of Queensland, Brisbane, QLD, Australia

Linwood Pendleton's is a member of the following International steering committees :

- Executive Planning Group (EPG) of the United Nations Decade of Ocean Science for Sustainable Development (2021-2030)
- Research Advisory Board, Gulf of Maine Research Institute
- Steering Committee Member, Inter-governmental Body on Ocean Observations (GEO Blue Planet)
- Finance Working Group Member, International Blue Carbon Partnership
- Ocean Literacy Think Tank, ResponSEable (H2020)

2.B) The core team

Dr. Linwood Pendleton gathered a research team that is diverse and interdisciplinary. The team embodies a variety in disciplines, cultural backgrounds, nationalities, and work experiences.

As of November 2018, the team is composed of Linwood PENDLETON, two Research engineers (Bénédicte MADON & Susan GROSE), one Project engineer (Cécile NYS), two PhD students (Dorothee HERR & Maxime SEBE) and one Intern (Denis KACHER).



Figure 2. IC-MES Core team as of November 2018

2.B.1) Research & project engineers



Figure 3. Bénédicte MADON



Figure 4. Cécile NYS



Figure 5. Susan GROSE

a) Bénédicte Madon, PhD (France)

Dr Bénédicte Madon is a quantitative ecologist with real world practical experience working to provide scientific support to conservation effort. She is an interdisciplinary researcher with a PhD in applied statistics and a master in marine biology.

Within the International Chair team, Bénédicte is coordinating the Pelagos storyline of the Horizon 2020 project ECO-POTENTIAL on the use of earth observation data to assess and monitor the status of protected areas in Europe.

She also works as a freelancer through an initiative she co-founded (the Dodobase) to provide technical assistance to various conservation program: she was recently involved in the French Agency for Development FISONG program in Tanzania and in Asian elephant conservation in Borneo.

She previously worked as a researcher on a migratory bird from central Asia and as a postdoctoral researcher at Cornell University for a program monitoring elusive carnivores and at UNSW in Sydney working on species distribution modelling.

b) Cécile Nys, Ir. (Belgium)

Ir. Cécile Nys is a Bioengineer (agricultural engineer) specialized in the Management of Fisheries and the Coastal and Continental ecosystems and in Forests and Natural areas engineering. Bilingual French-Dutch, she's also fluent in English and Spanish.

She joined the IUEM as Project Engineer in January 2018 to work on several projects: Blue Forests, Ecopotential, Tech4Whales and SIMNORAT. The topics of these projects are Blue carbon, Earth Observation, Marine Spatial Planning (MSP), Stakeholder engagement, Marine mammal collisions, Ocean Data.

She did a major part of her studies in Belgium (Gembloux Agro-Bio Tech, University of Liège), but has moved a lot since. Her last study year was spend between Rennes (France) and Nice (France). After that she moved to Brussels (Belgium), Paris (France), Madrid (Spain) and ultimately in Brest (France). She worked before as KYC analyst in the finance sector, Mission leader and Administrative assistant in the fishery sector and finally as Business developer and Country manager Belgium in the energy and e-commerce sector. Through her studies and work experience she acquired a lot of various skills allowing her to be quite versatile in her tasks.

c) Susan Grose-Heydler, PhD (U.S.A. & France)

Dr. Susan Grose is a researcher in ISBlue (formerly the Laboratory of Excellence) at the European Institute for Marine Sciences (IUEM) since September 2018.

She works with director Linwood Pendleton on various research questions, ranging from Mangrove Ecosystem Services to improving data flow from researchers to NGO's and other users, to fisheries management. The common thread is "disruption": finding new ways of thinking and doing to improve our ability to sustainably benefit from the oceans' natural resources.

Susan's background is phylogenetic botany, where she has worked on Polynesian Myrtaceae and Neotropical Bignoniaceae. Her personal interests are in plant and animal (including humans!) relationships.

2.B.2) PhD students & Interns



Figure 6. Dorothee HERR (PhD Student) Figure 7. Maxime SEBE (PhD Student) Figure 8. Denis KARCHER (Intern)

a) Dorothee Herr, PhD student (Luxembourg)

Dorothee Herr has been working for the IUCN's Global Marine Program as a Marine Program Officer since 2009. Despite being native of land locked Luxembourg, Dorothee is particularly interested in policy processes on ocean and climate change. In her capacity at IUCN Dorothee is following in particular the current UNFCCC negotiations and working towards including marine and coastal issues more centrally into the international climate change policy debate. She is active in a wide range of marine related climate change topics and initiatives, including on ocean warming and ocean acidification as well as on nature-based solutions to climate change adaptation and mitigation.

As part of her research in the GEF Blue Forests project, Dorothee is currently pursuing a PhD under Linwood Pendleton's supervision. She graduated in Environmental Change and Management from Oxford University. Fluent in four languages Dorothee has an extensive experience within the private sector, government agencies and NGOs having worked amongst others at the Luxembourg Ministry of the Environment, Greenpeace and the International Network for Studies in Technology, Environment, Alternatives, Development (CEPS/INSTEAD).

b) Maxime Sèbe, PhD Student (France)

After working on the sharks and turtles monitoring, Maxime joined the French Agency for the Biodiversity - former French Marine Protected Areas Agency - in order to work in the marine mammal Agoa sanctuary.

Specialized in MPAs' management and marine mammals, Maxime thesis aims to bring solutions to one of the biggest threat to cetacean: ship strikes. To this end, the use of an interdisciplinary approach is needed to assess the best way to conciliate the shipping companies' Blue Growth with marine mammal conservation.

c) Denis Karcher, Intern (Germany)

Denis is interested in interdisciplinary approaches for marine conservation that combine ecology with human behaviour, socio-economics and ocean governance. He holds a Master's degree in Marine Biology from University of Bremen (Germany). For his thesis research Denis investigated multilevel eutrophication effects on benthic coral reef communities in the Central Red Sea (Saudi Arabia).

Denis joined IUEM as a visiting scientist in September 2018 to work on more efficient ways to find, share and use data for coral reef conservation.

2.C) Previous team members

Since the beginning of the Chair there has been some changes in the team. Some left the Chair pursuing their careers in other countries and/or research fields. However each of the team members past and present have been important in the advancement and achievements of the Chair.

Here below you'll find the presentations of four of previous research and project engineers (Amber HIMES-CORNELL, Evangelia DRAKOU, Anne KAUP & Antoine RIVIERE), our previous PhD Student (Adrien COMTE) that got his PhD and one intern (Perrine LAROCHE).

2.C.1) Research & project engineers



Figure 9. Amber HIMES-CORNELL



Figure 10. Evangelia (Valia) DRAKOU



Figure 11. Anne KAUP



Figure 12. Antoine RIVIERE

a) Evangelia Drakou (Valia Drakou), PhD (Greece)

Dr Evangelia Drakou, also known as Valia Drakou, worked for the International Chair from October 2014 until March 2017. Now she works as an Assistant Professor at the University of Twente.

She is an interdisciplinary researcher with doctoral studies in Landscape Ecology and protected area management. Her expertise is on mapping and assessment, modelling and visualization of information on marine and coastal ecosystem services.

Within the International Chair team, Evangelia was coordinating the research activities of the Horizon 2020 project ECO-POTENTIAL on the use of earth observation data to assess and monitor the status of protected areas in Europe. She also led the development of the Ecosystem Services Partnership Visualization Tool (esp-mapping.net).

She was previously post-doctoral researcher at the JRC-EC on the BIOPAMA project to assess and map ecosystem services provided by protected areas in the Africa, Caribbean and South Pacific (ACP) regions. Before that she worked as a post-doctoral researcher at the FP7 Research Project SCALES. She is actively involved in the Marine Ecosystem Service Partnership and she is an active member of several working groups of the Ecosystem Services Partnership and the GEOBON working group on Ecosystem Services.

b) Amber Himes-Cornell, PhD (U.S.A.)

Dr. Amber Himes-Cornell worked for the International Chair from January 2016 until October 2017. Now she works as a Fishery Officer at the Fisheries and Aquaculture Department, Policy, Economics and Institutions Branch (FIAP) of the FAO (Food and Agriculture Organization of the United Nations).

She worked as a social science researcher in the Laboratory of Excellence at the European Institute for Marine Studies (IUEM). Her research focus is on coastal community vulnerability and resilience, the socio-economic aspects of marine ecosystem services, valuation of ecosystem services associated with blue carbon habitats (including mangroves), and assessing ecosystem services in marine protected areas.

Amber's primary focus was on two major research projects: The Global Environment Facility's Blue Forests Project (GEF Blue Forests), which focuses on defining and valuing ecosystem services in blue carbon habitats, and a European Union funded Horizon 2020 project called Ecopotential, which focuses on mapping coastal ecosystem services with remote sensing technology.

Prior to coming to IUEM, Amber was a social scientist at NOAA's Alaska Fisheries Science Center where she focused on analysing the importance of commercial, recreational and subsistence fishing to Alaskan communities.

c) Anne Kaup, J.D. (U.S.A.)

J.D. Anne Kaup worked for the International Chair from May 2014 until February 2017.

As executive manager of Marine Ecosystem Services Partnership (MESP), Anne worked with director Linwood Pendleton to foster a community of scientists, stakeholders and policy-makers, making available to them information regarding the latest trends and issues related to marine ecosystem services.

She researched, edited and produced Pendleton's blogs, podcasts, website material, webinars and newsletters. Anne also managed the MESP database containing over 1,000 ecosystem service valuations.

She is an attorney and has a law degree from Cornell University (1998) and a B.A. in Economics from Yale University where she completed a 2nd major in Studies in the Environment (1995).

d) Antoine Rivière (France)

Antoine Rivière worked for the Chair from March 2016 until July 2017. Now he works as an Economy and International relations teacher at the Institut Supérieur de l'Electronique et du Numérique (ISEN).

Antoine joined the team at the beginning of 2016 as a Program Manager. He developed a strong interest in the Science-Policy interface of global environmental changes, with a particular focus on climate change. Within the International Chair, he was more specifically involved in the Blue Carbon Science of the GEF Blue Forests project.

Before joining the team, Antoine worked for the French Ministry of the Environment as a foresight officer and in a start-up in Carbon markets. Antoine's academic background is interdisciplinary since he graduated in a double Master's in Environmental Sciences and Environmental Policies (Sciences Po & UPMC, France). He also holds a masters in Ecological Economics (AgroParisTech, France).

2.C.2) PhD Students & Interns



Figure 13. Adrien COMTE (PhD Student) Figure 14. Perrine LAROCHE (Intern)

a) Adrien Comte, PhD (France)

Adrien was a PhD student at the International Chair from October 2014 until January 2018. He got his PhD in Environmental Economics on the 11th of January 2018. He did his first postdoctoral, IFRECOR project, from January until October 2018 on the “Vulnerability and adaptation of overseas populations that depend on coral reefs”.

Dr. Adrien COMTE is interested in topics at the interface of science and policy. With an interdisciplinary approach, his research focuses on global environmental change and its impacts on socio-ecological systems.

He was working on one of the most vulnerable marine ecosystems, coral reefs, where solution-oriented research can help understand the impacts of CO₂-threats on the populations dependent on these ecosystems and how to adapt to change.

b) Perrine Laroche (France)

Perrine Laroche was an intern at the International Chair from March 2016 until September 2016. Now she’s a PhD student at the Vrije Universiteit Amsterdam since April 2018 working on the topic of “Impacts of changing lifestyles and ecosystem service demands”.

Perrine was a MSc student in Applied Economics to Agriculture, Sea and Environment (Agrocampus Ouest - University of West Brittany, France) with an academic background in Geography and Spatial planning (University of Lyon 3, France).

She joined the team in March 2016 for her Master’s thesis based on a review and analysis of the concept of “Essential Variables”, developed by the United Nations, and its application for the assessment and monitoring of Ecosystem Services. She was investigating the use of science and remote sensing techniques to deliver relevant knowledge to help policy makers to prioritize conservation actions in areas of interest in order to achieve Global Targets (CBDs, Aichi Targets,...). During this training she developed skills in systematic literature review methods, statistical analysis and mapping.

3) Research

The best research team will not make an impact without compelling and interesting research ideas. The research of the team attempts to find new ways of incorporating information about the human benefits of nature into decision-making.

The original proposal for the IC-MES was to focus on creating methods for prioritizing ecosystem investments in France and Europe. As the years moved on we broadened our geographic focus and our horizon by working on (marine) ecosystem services.

3.A) Funding & Grants

3.A.1) DEEPDETECT

- Type of project : ANR
- Name of project: DEEPDETECT
- ANR grant : 297 526 €
- Project duration: 30 months
 - Starting date: January 2018
 - Ending date : June 2020
- Project geographic range: France
- Project coordinator: Alexandre BAUSSARD (Lab-STICC)
- Partners:
 - UMR AMURE : AMénagement des Usages, des Ressources et des Espaces marins et littoraux
 - IRISA : Institut de Recherche en Informatique et Systèmes Aléatoires
 - Lab-STICC : Laboratoire des sciences techniques de l'information, de la communication et de la connaissance
 - MBDA Systems : MBDA FRANCE
- Objectives: Detection and recognition of multiple objects on varying backgrounds by deep learning (Détection et reconnaissance d'objets multiples sur fond variables par apprentissage profond)
- IC-MES funding in the project: 20 000€
- IC-MES Project leader: Linwood PENDLETON
- IC-MES members involved in the project :
 - Linwood PENDLETON
 - Bénédicte MADON
 - Cécile NYS

3.A.2) ECOPOTENTIAL

- Type of project: H2020
- Name of project: ECOPOTENTIAL
- Project summary:
 ECOPOTENTIAL is a large European-funded H2020 project that focuses its activities on a targeted set of internationally recognised Protected Areas, blending Earth Observations from remote sensing and field measurements, data analysis and modelling of current and future ecosystem conditions and services.
 ECOPOTENTIAL considers cross-scale geosphere-biosphere interactions at regional to continental scales, addressing long-term and large-scale environmental and ecological challenges.
- Project funding: 14 874 340 €
- Project total costs : 15 993 931,25€
- Project duration: 4 years
 - Starting date : 01/06/2015
 - Ending date : 30/11/2019 (To Be Confirmed)
- Project geographic range: Protected Areas in Europe, European Territories and beyond (internationally recognised)
- Project coordinators:
 - Antonello Provenzale (CNR, Italy)
 - Carl Beierkuhnlein (Bayceer, Germany)
- Partners: 47
- Project objectives :
 - Development of essential variables for cetacean management
 - Integrating disparate sources of data on whale sightings
 - Integrating ecological modelling of whale habitat, with new data, to create interactive maps of whale distribution
 - Participatory processes, including participatory mapping
- IC-MES funding in the project: €350 000
- IC-MES Project leader:
 - Evangelia (Valia) DRAKOU from June 2015 until March 2017
 - Bénédicte MADON starting from April 2017
- IC-MES members involved in the project :
 - Linwood PENDLETON
 - Bénédicte MADON
 - Valia DRAKOU
 - Amber HIMES-CORNELL
 - Cécile NYS
 - Perrine LAROCHE

3.A.3) Blue Forests

- Type of project : Global Environment Facility (GEF)
- Name of project: Blue Forests
- GEF Project grant : 4 500 000 \$ (USD)
- Project co-finance : 23 268 215 \$ (USD)
- Total cost of project : 27 843 215 \$ (USD)
- Project duration: 4 years
 - Starting date : January 2014
 - Ending date : March 2019
- Project geographic range: International
 - Site locations (SSIs) : Ecuador, Mozambique, Madagascar, UAE, Indonesia
- Project coordinator: GRID-Arendal
- Partners:
 - 11 partners in the Project Steering Committee
 - 3 partners in the Project-level Advisory Panel leads
 - 5 partners as Project Site Lead
 - 9 Other partners
- Objectives: Leveraging carbon science, payments for ecosystem services, including payments for carbon offsets, and ecosystem service assessments to promote better conservation in countries with coastal ecosystems that store carbon?
 - Developing knowledge and science to secure payments for carbon and ecosystem services in Ecuador, Abu Dhabi, Kenya, Mozambique, Madagascar, and Indonesia.
 - The Economics, Policy and Political Economy of Blue Carbon Ecosystems
 - A Synthesis of Ecosystem Service Values and Benefits for Blue Forests
- IC-MES funding in the project: 435 000 \$ (USD)
- IC-MES Project leader:
 - Linwood PENDLETON
 - Amber HIMES-CORNELL & Antoine RIVIERE
 - Cécile NYS starting from January 2018
- IC-MES members involved in the project :
 - Linwood PENDLETON
 - Anne KAUP
 - Amber HIMES-CORNELL
 - Antoine RIVIERE
 - Cécile NYS

3.A.4) Field work proposal submitted to IFRECOR

- Type of project : IFRECOR / Ministère outre mer
- Name of Project: Vulnérabilité et adaptation des populations d’Outre-mer qui dépendent des récifs coralliens
- Project funding: 27 610 €
- Project duration: 8 months
 - Start date : January 2018
 - End date : October 2018
- Project geographic range: French overseas territories
- Partners: IFRECOR & AMURE
Objectives: Vulnerability and adaptation of French overseas territories dependent on coral reefs ecosystem services
- IC-MES Project leader: Adrien Comte
- IC-MES members involved in the project :
 - Linwood PENDLETON
 - Adrien COMTE

3.A.5) EUROMARINE 2016

- Type of project : Euromarine workshop organization
- Name of project: Developing a method for understanding coastal community vulnerability in Europe
- Project period: March 2017
- Project geographic range: Group of interdisciplinary experts (10) from France (FR), Portugal (PT), Spain (SP), United States of America (USA)
- Project coordinator: Amber HIMES-CORNELL & Cristina PITA
- Partners: Université de Bretagne Occidentale (UBO) & University of Aveiro (UA)
- Objectives: Fund a workshop to explore coastal community vulnerability to changes in ecosystem services entitled “Developing a method for understanding coastal community vulnerability in Europe”
- IC-MES funding in the project: 7 380 €
- IC-MES Project leader: Amber HIMES-CORNELL

3.A.6) Extra-Local Ecosystem Services

- Type of project : Nature Conservancy’s Mapping Ocean Wealth
- Name of project: Extra-Local Ecosystem Services
- Project duration: 1 year
- Project summary and objectives :
 - Research support (Dr. E. Drakou) to develop conceptual models and maps for marine ecosystem services enjoyed far from ecosystems where produced
 - Using spatially explicit data visualizations (especially maps) to understand the benefits of marine ecosystems, especially when those benefits accrue to people far from the ecosystems where they are produced
- IC-MES funding in the project: 63 250 €
- IC-MES Project leader: Valia DRAKOU

3.A.7) Participatory Mapping of Ecosystem Services at the Pelagos Sanctuary for Marine Mammals

- Type of project : LabexMER Axis 8 (Marine social-ecological system management)
- Name of project: Participatory Mapping of Ecosystem Services at the Pelagos Sanctuary for Marine Mammals
- Project period: October 2016
- Project geographic range: Pelagos Sanctuary (France, Monaco & Italy)
- Project coordinator: Valia Drakou
- Partners: Tethys (Milan) and ETH (Switzerland)
- Objectives: Stakeholder engagement in collaboration with ECOPOTENTIAL
- IC-MES funding in the project: 5000€
- IC-MES Project leader: Valia DRAKOU

3.A.8) Organisation of the Young Researchers' Workshop at the MSEAS Symposium

- Type of project : Workshop
- Name of project: Young Researchers' Workshop (MSEAS Symposium)
- Project funding: LabexMer & UBO Research Commission
- Project period: May 2016
- Objectives: Organisation of the Young Researchers' Workshop at the MSEAS Symposium in May 2016
- IC-MES funding in the project: 4500€
- IC-MES Project leader: Valia DRAKOU & Adrien COMTE

3.A.9) Conference participation

a) Open Science Conference

- Type of project : Conference
- Funding by LabexMER
- Objectives: Attending GEO BON Open Science Conference
- IC-MES funding in the project: 1350€
- IC-MES beneficiary: Perrine LAROCHE

b) International Coral Reef Symposium

- Type of project : Conference
- Funding by LabexMER
- Objectives: Attending the 13th International Coral Reef Symposium
- IC-MES funding in the project: 2400€
- IC-MES beneficiary: Adrien COMTE

3.A.10) Three-week seminar on spatial planning

- Seminar: High-level seminar on Spatial Planning for the Deep Sea in International Waters by Dr. Cindy Van Dover
- Funded by LabexMER
- IC-MES funding in the project: 3500€

3.A.11) Collaborations with IC-MES (no financing for IC-MES)

a) CetADNe

- Type of project/fund : Foundation UBO
- Project leader : Jean-Luc JUNG (BIOGEMME – UBO)
- IC-MES implicated team member: Bénédicte MADON
- Funds : 8000€
- Goal : Cetaceans detection with environmental DNA (eDNA) analyse

3.A.12) Funded proposals for the AMURE lab without final implication of IC-MES

The following proposals were co-written by IC-MES team members. The proposals were approved but at the end there has been no implication in the project itself by IC-MES team members.

a) ALICE (Interreg)

- Interreg project submitted under the ATLANTIC regional call
- Name: “ALICE: Towards a better management of Atlantic Landscapes: developing tools to characterise biodiversity and eCosystem sErVICES”
- Coordinator: University of Cantabria, Spain
- Project duration: 24 months
- Amount requested: €2,531,201.91

b) ResponSEable

Additionally, as Chair Pendleton helped to write the proposal for ResponSEable: €330,000 (4 years, including €90,000 for Oceanopolis)

- Developing new marine ecosystem services data management and communications for ocean literacy (currently led by Denis Bailly)
- Currently led by Denis Bailly.
- Pendleton serves on the Ocean Literacy Think Tank

3.B) Pending proposals

3.B.1) CPAMNET

IC-MES leader: Bénédicte MADON

Type of project: Interreg France (Channel/Manche) England

Goal: Build a French-English acoustic detection network to be included in the European one that's under construction

3.B.2) Tech4Whales/Kraken/VidenSea

IC-MES leader: Linwood PENDLETON & Bénédicte MADON

Partners (to be confirmed): UBO, CNR, ALLOHa, ORCA, REPCET, ISPRA, CMCC, Brittany Ferries, Meridionale, IMT

Type of project: To be confirmed

Project goal:

To deploy whale-friendly and business friendly detection tools to reduce whale deaths and injury from collisions with ships, especially cruise ships and fast ferries.

The project will use tools of the shipping trade (FSA and Shipping Routing Optimization software) to work with cruise ship and ferry companies to assess the costs and benefits of a suite of on-board (e.g. radar, high resolution cameras, citizen science) and off board (e.g. satellite imagery, shared inter-vessel communications, drones, acoustic arrays) from the perspective of individual partner vessels. The potential impacts of proposed tools on whales will be carefully assessed and taken into account in the cost-benefit analyses of the suite of on-board and off-board tools.

We will also work with private and public sector partners to develop a sustainable financing model that will spread the cost of these “detection” technologies and approaches through data sharing and distribution, beyond the partner vessels (including to other vessels, scientists, public data platforms, marine spatial planning agencies, etc.). This model will also take into account the societal and ecological importance of whales.

3.C) Building an IC-MES Community

The IC-MES has been working at a variety of scales to build its network of research collaborators. We first built a core team made of interdisciplinary researchers, each with different areas of expertise, all of whom are eager and capable of working across disciplines. At the same time, we developed a network of core partners to help fulfil key competences necessary for our research, but are currently missing at the LabexMer. Third, we work tirelessly to expand and strengthening our global network of collaborators. This multi-pronged approach allows us to tackle a wide variety of research and conservation challenges, either internally within the IC-MES or by mobilizing potential collaborators from our networks.

Beyond our core team, we work with many partners at various levels to continuously grow and strengthen the IC-MES international network.

Pursuing the objective of carrying interdisciplinary science, the IC-MES strives for enhanced cooperation with many LabexMer labs and researchers, such as the Marine Environmental Sciences lab (e.g. Luis Tito de Morais or François Le Loc’h at LEMAR), the Microbiology lab (e.g. Mohammed Jebbar at LM2E) or the Deep Sea Lab (e.g. Jozée Sarrazin and Pierre-Marie Sarradin at LEP). It also developed links with the Library La Pérouse (e.g. Fanny Barbier and Morgane Le Gall) to find new ways of catalysing growth of the IC-MES community. Finally, the International Chair is constantly looking for opportunities either to promote synergies with existing partners. In practice, we have already developed a number of joint initiatives and proposals:

- The **Blue Carbon Think Tank** was an effort to create a multinational research team on blue carbon research and policy challenges, especially for francophone countries. The Think Tank team combined the best of French and International Expertise to provide a holistic approach to understanding the science and management of blue carbon ecosystems, with a focus on francophone countries.

- A proposed **Sustainability Center**, joint with Doriane Ibarra, Fanny Barbier, Morgane Le Gall (Library La Pérouse), Olivier Ragueneau (LEMAR), Camille Maze (CNRS, Apolimer), and Denis Bailly (the proposed United Nations University). The Sustainability Center is proposed as a new paradigm in interdisciplinary research for France, with shared workspaces open to all disciplines and researchers focused on marine conservation and management. This became to be known as CFOIS starting in 2017 and changed name to ALLOHA (Advanced Living Lab for Ocean Hack) middle 2018.
- A **high-level seminar series** on spatial planning on the deep sea in international waters took place in fall 2016. The course was led by Dr. Cindy Van Dover from Duke University.
- **Hosted scientists:** Two visiting professors were hosted by LabexMer labs in Fall 2016 and Spring 2017: Dr. Steve Crooks (U.K.) & Dr. Cindy Van Dover (U.S.A.). We also hosted Dr. Simone des Roches in September 2018.

Some other events such as the “**Tea & Cookies**” and the “**Whaledays**” have also been created in order to meet people outside of our lab in more informal settings.

3.C.1) Visiting scientists

a) Dr. Steve CROOKS



Dr. Steve Crooks (U.K.), hosted by IC-MES and Amure, is a wetland scientist and geomorphologist. He has 20 years’ experience in coastal wetland response to human impacts and climate change. He specializes in translating science to formats accessible to policy makers and managers. Steve’s venue will reinforce bridges with other labs like LEMAR. (Developed in consultation with Luis Tito de Morais and François Le L’och).

Figure 15. Dr. Steve CROOKS

b) Dr. Cindy Van Dover



Dr. Cindy Van Dover (U.S.A.), hosted by LM2E and IC-MES, is a deep-sea biologist with an interest in the ecology of chemosynthetic ecosystems. Her current research focuses primarily on deep-ocean exploration and the study of biodiversity and biogeography of invertebrates from chemosynthetic ecosystems. She has published more than 90 articles in peer-reviewed journals and is an active participant and Chief Scientist in NSF-and NOAA-sponsored field programs to hydrothermal vents and other chemosynthetic environments. (Developed in consultation with Pierre-Marie Sarradin and Jozee Sarrazin of IFREMER and Mohamed Jebbar of UBO who submitted the proposal.)

Figure 16. Dr. Cindy VAN DOVER

c) Dr. Jean-Luc JUNG



Figure 17. Dr. Jean-Luc JUNG

Dr. Jean-Luc Jung’s research is on the biodiversity of marine mammals, top predators and indicator species of the marine realm. He uses molecular ecology approaches (molecular biology, population genetics, DNA barcoding and metabarcoding, eDNA, ...) to study taxonomy and intra-specific biodiversity of targeted species. In particular, his research aims at detecting and characterizing the existence, structure and possible variations of groups or populations within species. He’s working at the fundamental steps level on understanding the ecology and taxonomy of marine mammals, but also in studies aimed at the conservation of species in the natural environment, especially in the face of anthropogenic pressures.

Jean-Luc Jung is assistant professor at the “Université de Bretagne Occidentale (UBO, Brest)” and head of the BioGeMME laboratory since 2012. Jean-Luc is a regular participant to the IC-MES Whaledays and he also did a presentation for one of the “tea & cookies” event.

d) Dr. Susan GALLON



Figure 18. Dr. Susan GALLON

Dr. Susan Gallon is an adventurous marine biologist. She carried out a PhD in Scotland on the foraging ecology of grey seals before studying southern elephant seals from the Antarctic Peninsula in Tasmania. She has since been continuously involved in collaborative work with groups in Australia, Brazil, Scotland and France. As a marine biologist she is acutely aware of the current struggles with climate change and took part in the woman’s Euro-Arabian North Pole expedition in 2018.

She’s working as a Project Manager for H2020 EO4Wildlife and more specifically on marine mammals. She’s a regular participant to the IC-MES Whaledays.

e) Dr. Simone des Roches



Figure 19. Dr. Simone DES ROCHES

Dr. Simone Des Roches, evolutionary ecologist, focuses on the importance of ecological interactions within the context of evolution. Specifically: how a species’ phenotype affects its interactions with the surrounding environment, and how these surroundings affect its course of evolution. For her Ph.D., she studied rapid evolutionary & ecological changes lizard colonists of White Sands

For her postdoctoral research, she studies the impacts of climate change (drought & El Niño) on the ecology (diet, survival, growth) and evolution (selection vs gene flow) of threespine stickleback in Californian estuaries. She was a visiting scientist of the IC-MES chair in September 2018.

3.C.2) Engaging and stimulating the IC-MES Community

a) IC-MES Doctoral Ateliers



Figure 20. Dr. D.G. WEBSTER

Ensuring the excellence of research over the long term requires investment in higher education and training. As an illustration of the IC-MES involvement in education, two doctoral ateliers have been organized. The first one was on vulnerability analysis and the second one dealt with Political and Historical Economic Approaches. The latter was led by Dr. D.G. Webster, from Dartmouth College (New Hampshire, USA).

b) Tea & Cookies events

The IC-MES recognized that informal events and friendly places for interdisciplinary mixing are often missing at IUEM. As a consequence, it is quite difficult to meet other researchers from outside of one's laboratory. This is why the International Chair and the Bibliothèque La Pérouse (BLP) are now inviting their networks to a monthly "Tea & Cookies". The goal is to invite people (heads of labs, researchers, students, doctoral students, companies, etc.) to share a snack at the BLP so that they unleash discussions and build cross-disciplinary friendships and collaborations.

To date, several Tea & Cookies events have been successfully organized. Some special guests were present (i.e. Dr. Cindy Van Dover and Dr. Nicolas Cassar) and 20+ people joined every time, allowing everyone to make new connections for potential future research.



Figure 21. Tea & Cookies events

c) Whale(s)day on Thursdays

Organised every Thursday since 2017 up to 2018, these Whaledays allowed the IC-MES to meet other people (academics and companies) interested in marine mammals, machine learning, maritime transport, etc. Several key actors were met and it allowed IC-MES team members to meet people they wouldn't have normally met.

It's during our Whaledays that we met Jean-Luc Jung and Susan Gallon and added on ideas and concepts to our Tech4Whales (Software allowing avoidance of collisions between marine mammals and ships) project.

d) CFOIS, now ALLOHA

As a place for collaborative innovation, "ALLOHa" (Advanced Living Lab for Ocean Hack) aims to bring together the scientific communities, in Marine Sciences and Data Sciences along with companies that innovate in these fields.

The goal is to create an environment enabling collaboration and the emergence of innovative solutions for sustainable ocean use.

The IC-MES was present at the very beginnings of CFOIS, now ALLOHA. Linwood Pendleton is a member of the ALLOHA board. Our Whaleday is also one of the first activities done in the ALLOHA framework.

4) Achievements and track records

During its first three years, the IC-MES core team contributed to the publication of 32 papers, several book chapters and books, some working papers and policy briefs, took part in editorial activities, organized sessions at international meetings and workshops, hosted more than 30 webinars, gave many speeches, and involved itself in teaching at several levels.

This intense activity, is reflective of both the quality of the research conducted and the high-profile of our working partners, largely contributed to the international visibility of the IC-MES, IUEM and LabexMer labs.

In order to increase our international visibility and attractiveness to the next level, we developed a website dedicated to IC-MES research activities: www.anthropecean.org.

4.A) Publications by the Chair Team

4.A.1) Journal articles

a) 2019

- **Comte, Adrien, Linwood H. Pendleton**, Denis Bailly, and Emmanuelle Quillérou. 2019. "Conceptual Advances on Global Scale Assessments of Vulnerability: Informing Investments for Coastal Populations at Risk of Climate Change." *Marine Policy* 99 (January). Pergamon: 391–99. <https://doi.org/10.1016/J.MARPOL.2018.10.038>. ([PDF](#))
- SUBMITTED :
 - **Herr, Dorothée**, and **Linwood Pendleton**. 2019. "Buying and Trading Coastal Carbon Offset Credits: Buyers' Opportunities and Challenges." *Journal of the Indian Ocean Region* July.
 - **Pendleton, Linwood**, Hawthorne Beyer, Estra Estradivari, **Susan Grose**, Ove Hoegh-Guldberg, **Denis Karcher**, Emma Kennedy, et al. 2019. "Disrupting Data Sharing for a Healthier Ocean." *ICES Journal of Marine Science*. (**Cécile Nys**)
 - **Herr, Dorothée**. 2019. "An Analysis of the Potential Positive and Negative Livelihood Impacts of Coastal Carbon Offset Projects." *Journal of Environmental Management*.

b) 2018

- **Madon, Bénédicte.** 2018. “Manifeste Pour Des Baleines sans Bosses.” *Voiles et Voiliers*. Ouest France. <https://voilesetvoiliers.ouest-france.fr/culture-voile/manifeste-pour-des-baleines-sans-bosses-cf45196a-d822-11e8-98ae-b37570549374>.
- **Madon, Bénédicte.** 2018. “Cétacés Nos Amis (Épisode 2) : Le Dauphin, Avenir de l’homme ?” *Voiles et Voiliers*, 2018. <https://voilesetvoiliers.ouest-france.fr/culture-voile/patrimoine/cetaces-nos-amis-episode-2-le-dauphin-avenir-de-l-homme-f98d1130-0768-11e9-86b8-5556f1a8abcb>.
- **Madon, Bénédicte.** 2018. “Cétacés Nos Amis (Épisode 3) : Cachalots et Dauphins Au Dodo.” *Voiles et Voiliers*, 2018. <https://voilesetvoiliers.ouest-france.fr/environnement-littoral/sciences/cetaces-nos-amis-episode-3-cachalots-et-dauphins-au-dodo-55133c38-0a8d-11e9-a3d0-13abea51bfee>.
- **Madon, Bénédicte.** 2018. “Des Baleines et Des Hommes, Une Cohabitation Difficile.” *Voiles et Voiliers* 573 (Novembre). Ouest France : 130-133. <https://voilesetvoiliers.ouest-france.fr/culture/et-si-le-voilier-volant-copiait-le-poisson->
- Bruno, John F., Whitley Saumweber, Larry B. Crowder, **Linwood Pendleton**, Stephen E. Roady, Tracy Rouleau, and Miyoko Sakashita. 2018. “Safe Harbors: The Many Benefits of Marine Monuments and Sanctuaries.” *Frontiers in Marine Science*. Frontiers. <https://doi.org/10.3389/fmars.2018.00189>.
- Drakou, Evangelia G., John Viridin, and **Linwood Pendleton**. 2018. “Mapping the Global Distribution of Locally-Generated Marine Ecosystem Services: The Case of the West and Central Pacific Ocean Tuna Fisheries.” *Ecosystem Services* 31 (June). Elsevier: 278–88. <https://doi.org/10.1016/j.ecoser.2018.05.008>.
- Dover, C.L. Van, S. Arnaud-Haond, M. Gianni, S. Helmreich, J.A. Huber, A.L. Jaeckel, A. Metaxas, et al. 2018. “Scientific Rationale and International Obligations for Protection of Active Hydrothermal Vent Ecosystems from Deep-Sea Mining.” *Marine Policy* 90 (April). Pergamon: 20–28. <https://doi.org/10.1016/j.marpol.2018.01.020>. (**Linwood Pendleton**)
- Himes-Cornell, Amber H., **Susan O. Grose**, and **Linwood Pendleton**. 2018. “Mangrove Ecosystem Service Values and Methodological Approaches to Valuation: Where Do We Stand?” *Frontiers in Marine Science* 5. <https://doi.org/10.3389/fmars.2018.00376>.
- **Pendleton, Linwood H.**, Gabby N. Ahmadi, Howard I. Browman, Ruth H. Thurstan, David M. Kaplan, and Valerio Bartolino. 2018. “Debating the Effectiveness of Marine Protected Areas.” *ICES Journal of Marine Science* 75 (3): 1156–59. <https://doi.org/10.1093/icesjms/fsx154>.
- **Comte, Adrien**, and **Linwood H. Pendleton**. 2018. “Management Strategies for Coral Reefs and People under Global Environmental Change: 25 Years of Scientific Research.” *Journal of Environmental Management* 209 (March). Academic Press: 462–74. <https://doi.org/10.1016/j.jenvman.2017.12.051>.
- **Himes-Cornell, Amber, Linwood Pendleton**, and Perla Atiyah. 2018. “Valuing Ecosystem Services from Blue Forests: A Systematic Review of the Valuation of Salt Marshes, Sea Grass Beds and Mangrove Forests.” *Ecosystem Services* 30 (April). Elsevier: 36–48. <https://doi.org/10.1016/j.ecoser.2018.01.006>.

c) 2017

- Dover, Cindy L. Van, Jeff A. Ardron, E. Escobar, M. Gianni, Kristina M. Gjerde, A. Jaeckel, D. O. B. Jones, et al. 2017. “Biodiversity Loss from Deep-Sea Mining.” *Nature Geoscience* 10 (June). Nature Publishing Group: 464. <https://doi.org/10.1038/ngeo2983>. (co-author **Linwood H Pendleton**)
- **Pendleton, Linwood**, and Peter Edwards. 2017. “Measuring the Human ‘so What’ of Large-Scale Coral Reef Loss?” *Biodiversity* 18 (1). Taylor & Francis: 13–15. <https://doi.org/10.1080/14888386.2017.1308271>.

- Hoyt, Sarah P, **Linwood H Pendleton**, Olivier Thebaud, and Cindy Lee Van Dover. 2017. "Addressing the Financial Consequences of Unknown Environmental Impacts in Deep-Sea Mining." *Annales Des Mines - Responsabilité et Environnement* 85 (1). Paris: Télédéc 797: 43–48. https://www.cairn.info/load_pdf.php?ID_ARTICLE=RE1_085_0043.
- Outeiro, Luis, Elena Ojea, João Garcia Rodrigues, **Amber Himes-Cornell**, Andrea Belgrano, Yajie Liu, Edna Cabecinha, Cristina Pita, Gonzalo Macho, and Sebastian Villasante. 2017. "The Role of Non-Natural Capital in the Co-Production of Marine Ecosystem Services." *International Journal of Biodiversity Science, Ecosystem Services and Management* 13 (3). Taylor & Francis: 35–50. <https://doi.org/10.1080/21513732.2017.1415973>.
- Zador, Stephani G., Sarah K. Gaichas, Stephen Kasperski, Colette L. Ward, Rachael E. Blake, Natalie C. Ban, **Amber Himes-Cornell**, and J. Zachary Koehn. 2017. "Linking Ecosystem Processes to Communities of Practice through Commercially Fished Species in the Gulf of Alaska." *ICES Journal of Marine Science* 74 (7). Oxford University Press: 2024–33. <https://doi.org/10.1093/icesjms/fsx054>.
- **Drakou, Evangelia G., Linwood Pendleton**, Micah Efron, Jane Carter Ingram, and Lida Teneva. 2017. "When Ecosystems and Their Services Are Not Co-Located: Oceans and Coasts." *ICES Journal of Marine Science* 74 (6). Oxford University Press: 1531–39. <https://doi.org/10.1093/icesjms/fsx026>.
- **Drakou, Evangelia G.**, Charène Kermagoret, **Adrien Comte**, Brita Trapman, and Jake C. Rice. 2017. "Shaping the Future of Marine Socio-Ecological Systems Research: When Early-Career Researchers Meet the Seniors." *ICES Journal of Marine Science* 74 (7). Oxford University Press: 1957–64. <https://doi.org/10.1093/icesjms/fsx009>.
- **Drakou, Evangelia G.**, Charène Kermagoret, Camino Liqueste, Ana Ruiz-Frau, Kremena Burkhard, Ana I. Lillebø, Alexander P. E. van Oudenhoven, et al. 2017. "Marine and Coastal Ecosystem Services on the Science–policy–practice Nexus: Challenges and Opportunities from 11 European Case Studies." *International Journal of Biodiversity Science, Ecosystem Services & Management* 13 (3). Taylor & Francis: 51–67. <https://doi.org/10.1080/21513732.2017.1417330>.

d) 2016

- **Pendleton, Linwood, Adrien Comte**, Chris Langdon, Julia A. Ekstrom, Sarah R. Cooley, Lisa Suatoni, Michael W. Beck, et al. 2016. "Coral Reefs and People in a High-CO2 World: Where Can Science Make a Difference to People?" Edited by Stefano Goffredo. *PLOS ONE* 11 (11). Public Library of Science: e0164699. <https://doi.org/10.1371/journal.pone.0164699>.
- Maes, Joachim, Camino Liqueste, Anne Teller, Markus Erhard, Maria Luisa Paracchini, José I. Barredo, Bruna Grizzetti, **et al.** 2016. "An Indicator Framework for Assessing Ecosystem Services in Support of the EU Biodiversity Strategy to 2020." *Ecosystem Services* 17 (February): 14–23. <https://doi.org/10.1016/j.ECOSER.2015.10.023>. (**Drakou, Evangelia G.**)
- **Pendleton, Linwood H.**, Ove Hoegh-Guldberg, Chris Langdon, and **Adrien Comte**. 2016. "Multiple Stressors and Ecological Complexity Require a New Approach to Coral Reef Research." *Frontiers in Marine Science* 3 (March). Frontiers. <https://doi.org/10.3389/fmars.2016.00036>.
- **Pendleton, Linwood H.**, Olivier Thébaud, Rémi C. Mongruel, and Harold Levrel. 2016. "Has the Value of Global Marine and Coastal Ecosystem Services Changed?" *Marine Policy* 64. Elsevier: 156–58. <https://doi.org/10.1016/j.marpol.2015.11.018>.
- **Himes-Cornell, Amber**, Conor Maguire, Stephen Kasperski, Kristin Hoelting, and Richard Pollnac. 2016. "Understanding Vulnerability in Alaska Fishing Communities: A Validation Methodology for Rapid Assessment of Indices Related to Well-Being." *Ocean and Coastal Management* 124. Elsevier Ltd: 53–65. <https://doi.org/10.1016/j.ocecoaman.2016.02.004>.
- **Himes-Cornell, Amber**, and Stephen Kasperski. 2016. "Using Socioeconomic and Fisheries Involvement Indices to Understand Alaska Fishing Community Well-Being." *Coastal Management* 44 (1): 36–70. <https://doi.org/10.1080/08920753.2016.1116671>.

- Kent, Keeley, and **Amber Himes-Cornell**. 2016. "Making Landfall: Linkages between Fishing Communities and Support Services." *Coastal Management* 44 (4): 279–94. <https://doi.org/10.1080/08920753.2016.1135276>.

e) 2015

- Ekstrom, Julia A., Lisa Suatoni, Sarah R. Cooley, **Linwood H. Pendleton**, George G. Waldbusser, Josh E. Cinner, Jessica Ritter, et al. 2015. "Vulnerability and Adaptation of US Shellfisheries to Ocean Acidification." *Nature Climate Change* 5 (3). Nature Publishing Group: 207–14. <https://doi.org/10.1038/nclimate2508>.
- **Pendleton, Linwood**, Rémi Mongruel, Nicola Beaumont, Tara Hooper, and Mahé Charles. 2015. "A Triage Approach to Improve the Relevance of Marine Ecosystem Services Assessments." *Marine Ecology Progress Series* 530: 183–93. <https://doi.org/10.3354/meps11111>.
- Wasson, Kerstin, Becky Suarez, Antonia Akhavan, Erin McCarthy, Judith Kildow, Kenneth S. Johnson, Monique C. Fountain, et al. 2015. "Lessons Learned from an Ecosystem-Based Management Approach to Restoration of a California Estuary." *Marine Policy* 58 (August). Pergamon: 60–70. <https://doi.org/10.1016/J.MARPOL.2015.04.002>. (**Linwood Pendleton**)
- Clark, Nichola A., Jeff A. Ardron, and **Linwood H. Pendleton**. 2015. "Evaluating the Basic Elements of Transparency of Regional Fisheries Management Organizations." *Marine Policy* 57 (July). Pergamon: 158–66. <https://doi.org/10.1016/J.MARPOL.2015.03.003>.
- Willemen, Louise, Benjamin Burkhard, Neville Crossman, **Evangelia G. Drakou**, and Ignacio Palomo. 2015. "Editorial: Best Practices for Mapping Ecosystem Services." *Ecosystem Services* 13 (June). Elsevier: 1–5. <https://doi.org/10.1016/j.ecoser.2015.05.008>.
- Willemen, Louise, Andrew J. Cottam, **Evangelia G. Drakou**, and Neil D. Burgess. 2015. "Using Social Media to Measure the Contribution of Red List Species to the Nature-Based Tourism Potential of African Protected Areas." Edited by Francisco Moreira. *PLOS ONE* 10 (6). Public Library of Science: e0129785. <https://doi.org/10.1371/journal.pone.0129785>.
- **Drakou, E.G.**, N.D. Crossman, L. Willemen, B. Burkhard, I. Palomo, J. Maes, and S. Peedell. 2015. "A Visualization and Data-Sharing Tool for Ecosystem Service Maps: Lessons Learnt, Challenges and the Way Forward." *Ecosystem Services* 13 (June). Elsevier: 134–40. <https://doi.org/10.1016/J.ECOSER.2014.12.002>.

f) 2014

- Rochette, Julien, Kristina Gjerde, Elisabeth Druel, Jeff A. Ardron, Alicia Craw, Patrick Halpin, **Linwood Pendleton**, Kristian Teleki, and Jesse Cleary. 2014. "Delivering the Aichi Target 11: Challenges and Opportunities for Marine Areas beyond National Jurisdiction." *Aquatic Conservation: Marine and Freshwater Ecosystems* 24 (S2): 31–43. <https://doi.org/10.1002/aqc.2507>.
- **Pendleton, Linwood H.** 2015. "Signed Peer Reviews as a Means to Improve Scholarly Publishing." *Journal of Ocean and Coastal Economics* 2014 (1). <https://doi.org/10.15351/2373-8456.1022>.

4.A.2) Conference proceedings

a) 2018

- **Madon, Bénédicte**. 2018. "A 21st Century Approach to Managing Whale and Human Interactions." In *ECS (European Cetacean Society)*. La Spezia, Italy.

b) 2017

- **Madon, Bénédicte**, Romain David, René Garello, **Linwood Pendleton**, and Ronan Fablet. 2017. "Strike-Alert: Towards Real-Time, High Resolution Navigational Software for Whale Avoidance." In *SUSTECH 2017 : 5th Annual IEEE Conference on Technologies for Sustainability, Nov 2017*. Phoenix, United States. <https://hal.archives-ouvertes.fr/hal-01623903>.

4.A.3) Book, Book chapters and contributions

a) 2018

- Vegh, Tibor, **Linwood Pendleton**, Brian Murray, Tiffany Troxler, Keqi Zhang, Edward Castañeda-Moya, Greg Guannel, et al. 2018. "Ecosystem Services and Economic Valuation: Co-Benefits of Coastal Wetlands." In *A Blue Carbon Primer*, edited by Lisamarie Windham-Myers, Stephen Crooks, and Tiffany G. Troxler, 249–66. Boca Raton: CRC Press. <https://doi.org/10.1201/9780429435362-18>.

b) 2017

- **Drakou, Evangelia G.**, Camino Liqueste, Nicola Beaumont, Arjen Boon, Markku Viitasalo, and Vera Agostini. 2017. "Mapping Marine and Coastal Ecosystem Services." In *Mapping Ecosystem Services*, edited by Benjamin Burkhard and Joachim Maes, 250–55. Sofia: Pensoft Publishers. <https://doi.org/10.3897/ab.e12837>.
- Beaumont, Nicola, Katie Arkema, **Evangelia G. Drakou**, Charly Griffiths, Tara Hooper, Camino Liqueste, Lida Teneva, Anda Ruskule, and Anna-Stiina Heiskanen. 2017. "Applying Ecosystem Service Mapping in Marine Areas." In *Mapping Ecosystem Services*, edited by Benjamin Burkhard and Joachim Maes, 332–38. Sofia: Pensoft Publishers. <https://doi.org/10.3897/ab.e12837>.
- **Drakou, Evangelia G.**, Louise Willemen, Neville D. Crossman, Benjamin Burkhard, Ignacio Palomo, Joachim Maes, and Michele Conti. 2017. "The Ecosystem Services Partnership Visualisation Tool." In *Mapping Ecosystem Services*, edited by Benjamin Burkhard and Joachim Maes, 356–59. Sofia: Pensoft Publishers. <https://doi.org/10.3897/ab.e12837>.

c) 2016

- Grillet, Clara, Claire Bertin, Jennifer T. Le, and **Adrien Comte**. 2016. "Marine Ecosystem Services in Europe." In *OCEAN AND CLIMATE, Scientific Notes*, edited by Françoise Gaill, 2nd ed., 55–62. Ocean-climate.org. <http://www.ocean-climate.org>.
- **Pendleton, Linwood H.**, and **Evangelia G. Drakou**. 2016. "Adding up the Benefits - A Bundle of Values." In *Atlas of Ocean Wealth*, edited by M D Spalding, R D Brumbaugh, and E Landis, 76–79. Arlington: The Nature Conservancy.
- Mahé, Charles, Rémi Mongruel, Nicola Beaumont, Tara Hooper, Harold Levrel, Eric Thiébaud, and **Linwood Pendleton**. 2016. "Towards Effective Ecosystem Services Assessment in Marine and Coastal Management." In *Routledge Handbook of Ecosystem Services*, edited by Marion Potschin, Roy Haines-Young, Robert Fish, and R. Kerry Turner, 1st ed., 359–73. London and New York: Routledge. <https://doi.org/10.4324/9781315775302-31>.

d) 2015

- **Pendleton, Linwood**, Megan Jungwiwattanaporn, Yannick Beaudoin, Christian Neumann, Anne Solgaard, Christina Cavaliere, and Elaine Baker. 2015. "Greening The Ocean Economy: A Progress Report." In *Routledge Handbook of Ocean Resources and Management*, edited by Hance D. Smith, Juan Luis Suárez de Vivero, and Tundi S. Agardy, 199–211. London and New York: Routledge. <https://doi.org/10.4324/9780203115398>.

4.A.4) Working Papers

a) 2018

- WWF. 2018. "Living Planet Report - 2018: Aiming Higher." Edited by Monique Grooten and Rosamunde Almond. Gland, Switzerland: World Wide Fund for Nature. http://www.panda.org/about_our_earth/all_publications/living_planet_report/. (**Linwood Pendleton**)

b) 2016

- UNEP. 2016. "The Socio-Economics of the West, Central and Southern African Coastal Communities: A Synthesis of Studies Regarding Large Marine Ecosystems." Edited by United Nations Environment Programme, Abidjan Convention Secretariat, and GRID-Arendal. (authored by **Anne Kaup** and **Linwood Pendleton**)
- **Drakou, E.G.**, and **L. Pendleton**. 2016. "When Ecosystem and Their Services Are Not Co-Located." *Mapping Ocean Wealth Project*.

c) 2015

- **Comte, Adrien**, **Linwood Pendleton**, Emmanuelle Quilléro, and Denis Bailly. 2015. "Informing Climate Investment Priorities for Coastal Populations." Edited by Françoise Gaill. *Ocean and Climate - Scientific Notes*. www.ocean-climate.org

4.A.5) Policy Reports

- Neumann, Christian, Tanya Bryan, **Linwood Pendleton**, **Anne Kaup**, and Jane Glavan. 2015. "The Ocean and Us." Abu Dhabi, UAE & Arendal, Norway.
- Neumann, Christian, Tanya Bryan, **Linwood Pendleton**, and **Anne Kaup**. 2015. "Introduction." Edited by Christian Neumann, Tanya Bryan, **Linwood Pendleton**, **Anne Kaup**, and Jane Glavan. The Ocean and Us. Abu Dhabi, UAE & Arendal, Norway: AGEDI & GRID-Arendal.
- **Pendleton, Linwood**, and **Anne Kaup**. 2015. "The Future Management of Marine and Coastal Ecosystems for People." Edited by Christian Neumann, Tanya Bryan, Linwood Pendleton, Anne Kaup, and Jane Glavan. The Ocean and Us. Abu Dhabi, UAE & Arendal, Norway: AGEDI & GRID-Arendal.

4.A.6) Editorial Activities

Dr. Linwood Pendleton

- Founding member of the Editorial Board of the Journal of Ocean and Coastal Economics
- Reviews papers for a large number of journals.
- Subject editor for ICES - Journal of Marine Science

Dr. Evangelia Drakou is a

- Subject Editor of the One Ecosystem
- Topic Editor of the Frontiers in Ecology and Evolution.

4.B) Sessions Organized at International Meetings

Using its networks and connections, several meetings were organized by the IC-MES core team. Here is a non-exhaustive list of them

- Ecosystem Services Partnership
 - Application of MCES in the Real World: from local to national and supranational levels. Co-hosted by Alexander van Oudenhoven and **Linwood Pendleton**.
 - Major Tools to Assess MCES: valuation versus mapping, Thursday, 12 November 2015, 10-12:30. Hosted by **Evangelia Drakou**.
- EU Ecosystem Services Partnership Meeting
 - Informing marine and coastal policy using ecosystem service assessments: evidence from real world applications (**Drakou EG**, Liqueste C, Kermagoret C, Beaumont N)
 - ES Indicators: what you measure is what you get? (van Oudenhoven A, Schroeter M, **Drakou EG**, Albert C)
 - Solving bottlenecks in ES mapping (Willemsen L, Palomo I, **Drakou EG**, Crossman N, Burkhard B)
- MSEAS: Young Researchers Workshop: **Evangelia Drakou**, Charlène Kermagoret, **Adrien Comte**, Brita Trapman
- GEOBON Open Science Meeting: Essential Variables for Ecosystem Services: Patricia Balvanera, Aletta Bonn, **Evangelia Drakou**
- Carbon Science for Blue Forest Projects. Organized and hosted an international meeting to explore the most recent advances in Blue Carbon science. Zanzibar.
- IEEE October 2017 (René Garello)

4.C) Selected speeches and presentations

Linwood Pendleton gave speeches and keynote presentations to various audiences, including researchers from Marine studies, MPA managers and practitioners, policymakers, international organizations, foundations and other institutions. Selected presentations include:

- Plenary Presentation: The Economics of Deep Sea Mining. Seatech Week. October 16, 2014
- Keynote Speech: Reflections on Marine Ecosystem Services. Valmer Final Meeting. Torquay. January 2015
- Invited Speaker: Human Impacts of Ocean Acidification. Oceanopolis. May 19 2015
- Invited Speaker: Human Impacts of Ocean Acidification. World Oceans Day. UNESCO. Paris. June 2015.
- Keynote Speech: Indicators. MSEAS/ICES. Brest. June 2016
- Keynote Speech: Rethinking Marine Conservation Science in Three Acts. World Conference on Marine Biodiversity. June 2018

4.D) Teaching

Teaching is an important part of the IC-MES activities. Beyond the three-week high-level seminar on deep sea spatial planning, Linwood Pendleton is involved in the following classes:

Writing for English Language Journals (2015 and 2016) – UBO

- Objective: being able to write in English is crucial for any researcher career. This class teaches young researchers how to frame, write, and edit a manuscript suitable for publication in top international journals.
- Level: Doctoral students
- Additional information: SIAME funding was used to invite Dr. Cindy van Dover to co-teach the class for both years.

Marine Ecosystem Services (2015, 2016, 2017) – Rennes AgroCampus

- Objective: presenting existing approaches, economic instruments available and methods for assessing ecosystem services and managing marine ecosystems.
- Level: Masters students

Doctoral Ateliers (workshops) were sponsored by the IC-MES to provide special opportunities for doctoral students to conduct thought experiments about how they would apply selected methods to their research topics. The first atelier featured vulnerability approaches. The second atelier was led by visiting researcher, Dr. D.G. Webster from Dartmouth University who helped students envision how they would apply historical, political economic approaches.

4.E) Webinars hosted

The International Chair played a very active role in the organization and hosting of webinars through the Marine Ecosystem Services Partnership, which is directed by Pendleton.

This format is very practical to gather people from all over the world and to share experience, knowledge and build cooperation with international partners. IC-MES, as the current home of the Marine Ecosystem Services Partnership, organized its own webinars and also collaborated to the Deep Ocean Stewardship Initiative (DOSI) and the Conservation Strategy Fund.

4.E.1) Organized by the Chair, for the Chair networks

- “Blue Solutions for Ecosystem Services – Finding What’s Worked, and Helping to Do It Again,” May 25, 2016, Featuring Christian Neumann, GRID-Arendal
- “Incorporating Ecosystem Services Into Federal Decision Making: Perspectives from the National Oceanic and Atmospheric Administration (NOAA),” April 28, 2016, Featuring NOAA economists: Doug Lipton, Tracy Rouleau and Peter Wiley

4.E.2) Webinars hosted jointly with the Deep Ocean Stewardship Initiative (Pendleton is a Steering Committee Member)

- “Deep-sea Genetic Resources: Governance, Science and Stewardship,” December 16, 2015, Featuring Harriet Harden-Davies, Australian National Centre for Ocean Resources and Security (ANCORS), University of Wollongong
- “The Deep-Ocean Stewardship Initiative: Going Forward,” November 18, 2015, Featuring Lisa Levin, a Distinguished Professor and Director of the Center for Marine Biodiversity and Conservation at Scripps Institution of Oceanography, UC San Diego, CA & founding leader of the Deep-Ocean Stewardship Initiative.
- “Deep-Sea Fisheries,” October 20, 2015, Featuring: Glen Wright, a Research Fellow in International Marine Policy at the Institute for Sustainable Development and International Relations (IDDRI) in Paris, and Claire Nouvian, the Director & Founder of BLOOM Association.
- “The Deep Blue Economy,” September 16, 2015, Featuring: Charles Goddard, Editorial Director, Asia Pacific, Economist Intelligence Unit, and Maria Damanaki, the current Global Managing Director for Oceans at The Nature Conservancy.
- “The Oil Industry’s Technological Advancements for the Ocean Environment: BP’s DELOS Project,” June 17, 2015, Featuring Rob O’Brien, an Environmental Scientist at BP.
- “Industrial Mining in the Deep Sea: Social and Environmental Considerations,” May 14, 2015, Featuring: Dr. Samantha Smith, President of the International Marine Minerals Society, and Charles Roche, Executive Director of the Mineral Policy Institute

a) 2014

- “Laws, Policies and Plans for the Deep Ocean” Kristina Gjerde (IUCN & DOSI) May 7, 2014, Featuring Kristina Gjerde
- “High Seas Governance” (IASS & DOSI) May 7, 2014, Featuring Jeff Ardon
- “Toward a Deep Ocean Observing Strategy” (DOOS) – May 21, 2014, Featuring Eric Lindstrom
- “The Description of Ecologically or Biologically Significant Areas” (CBD ESBAs) – May 21, 2014, Featuring Pat Halpin
- “Towards an Environmental Impact Assessment: Guidelines for the Deep Sea” (ISA) – June 4, 2014, Featuring Sandor Mulsow
- “Deep-Ocean Stewardship and the MIDAS Project” (MIDAS) June 18, 2014, Featuring Phil Weaver
- “Pacific Islands: Deep Sea Minerals” (SPC-SOPAC) June 18, 2014, Featuring Hannah Lily
- “Science Community and Ocean Business Community Collaboration for Sustainability” (WOC) July 2, 2014, Featuring Paul Holthus
- “The regulation of Activities in the Deep Sea: a Conservation Perspective” (DSCC) July 2, 2014, Featuring Matt Gianni
- “Global Ocean Biodiversity Initiative” (GOBI) July 16, 2014, Featuring David Johnson

- “From Decline to Recovery: A Rescue Package for the Global Ocean (GOC)” July 16, 2014, Featuring Kristian Teleki

4.E.3) Webinars held in preparation for the ESP conference in West Africa (IC-MES organized 2 days of Sessions)

a) Webinar I, November 3, 2015

- “The benefits to people of expanding Marine Protected Area,” Alistair McVittie, SRUC, Edinburgh
- “Integrating monetary and non-monetary approaches for incorporating the value of marine cultural ecosystem services into decisions,” Jasper Kenter, The Scottish Association for Marine Science (SAMS)
- “The artist and the sea – exploring oceans’ inspiration for culture, art and design,” Anne Böehnke-Henrichs, Environmental Systems Analysis Group, Wageningen University, The Netherlands

b) Webinar II, November 4, 2015

- “Many voices of the Manukau: Mapping coastal narratives in Aotearoa New Zealand,” Kate Davies, NIWA, New Zealand
- “Natural capital and ecosystem services advance seafood sustainability – an illustrated learning journey,” Katherine Short, Partner, Terra Moana Ltd
- “Gaining Consensus: the Steps before a Marine Value Experiment,” Darla Hatton MacDonald, Associate Professor, University of Tasmania

4.E.4) Webinars hosted as Part of the Conservation Economics Initiative

- “Forgone Revenues from Ngardmau’s 2011 Sea Cucumber Harvest” June 23, 2015, Featuring Dr. Rhona Barr, economist at Conservation Strategy Fund
- “La expansión del Program Socio-Bosque en las zonas de manglar del Ecuador: insumos técnicos para su implementación,” May 21, 2015, Featuring: Acompañe a Jorge Higinio Maldonado, profesor asociado en la Facultad de Economía de la Universidad de los Andes (Bogotá, Colombia) y director adjunto del Programa Latinoamericano y del Caribe de Economía Ambiental (LACEEP), y a Rocío Moreno-Sánchez, Economista senior de Conservation Strategy (hosted in Spanish)
- “Economic comparison of alternatives to building a port on Goat Islands: Does Jamaica need to sacrifice a world class conservation site to build a world class port?” April 8, 2015, Featuring Aaron Bruner, Senior Economist at Conservation Strategy Fund
- “The Social Impacts of MPAs in Fishing Communities: Evidence from Observations, Interviews, Surveys and Experiments,” March 10, 2015,
- Featuring Xavier Basurto is the Assistant Professor of Sustainability Science within the division of Marine Science & Conservation at Duke University
- “Can Deep Sea Mining Benefit Society? Looking at marine industrialization through an economic lens,” November 18, 2014, Featuring Linwood Pendleton
- “An Economic Instrument for Coral Reefs,” October 22, 2014, Featuring: Christopher LaFranchi, Founder & CEO of OneReef Worldwide Stewardship

5) Communication

Good communication, across platforms is important if our work is to make a difference. The IC-MES works with a variety of outlets to make its work known, including traditional newspapers, magazines, and online media.

5.A) Website & Social networks

IC-MES research is featured on Linwood Pendleton's website (www.PeopleAndOceans.org) in the form of columns, blogs, and podcasts. A more up to date version of research work done by the IC-MES is visible on the Chair website (www.Anthropocean.org). The main goal is to better showcase IC-MES's research, but the website also provides the opportunity to create a brand around the Chair's activities.

Linwood Pendleton has also his own Wikipedia page where features his resume, researches, activities and some publication. It's accessible at the following link: https://en.wikipedia.org/wiki/Linwood_Pendleton .

The team is also active on Twitter where it shares updates, publications and information to our community. The following usernames are the ones of the core team members (actual and previous): coastalvalues (Linwood Pendleton), cecile_nys (Cécile Nys), Bene_Madon (Bénédicte Madon), BlueConser (Denis Karcher), AdrienComte1 (Adrien Comte), edrakou (Valia Drakou)

5.B) Blogs and Podcasts

- "Time to Bring the Value of Nature Back to Earth" (January 2016), by Linwood Pendleton
- "The Ocean: a drop of water in the Paris climate negotiations" (January 2016), by Adrien Comte
- "Inserting 'Oceans' into the Paris Climate Conversation" (October 2015): An Interview with Dorothee Herr
- "Learning to Speak Ecosystem Services" (February 2015) by Christian Neumann, Linwood Pendleton, Marianne Kettunen, Tundi Agardy
- "Marine Ecosystem Services: How Is That Valuation Thing Treating You?" (September 2014). by Linwood Pendleton
- "You Say Conservation is Good for People: Well, Prove It" (podcast adapted from Valmer keynote speech listed above, April 2015), by Linwood Pendleton
- "Below the Surface with NOAA's Margaret Davidson" (podcast interview May 2016) Linwood Pendleton as interviewer