

outreach programmes, we integrate knowledge on evolutionary responses to long-term changes with knowledge on direct physiological acclimatisation of animals to short-term, human-induced changes. In this way we raise awareness and improve understanding of the consequences of anthropogenic activities on ecosystems and invaluable ecosystem services.

"You only die once: a population is as strong as the weakest link in the life cycle of the animals. Managing populations is only possible when the interactions and requirements of the various life stages are understood"

Contact us for

MAE is always looking for possibilities to collaborate and for opportunities to disseminate our knowledge. In these respects, MAE can offer:

- Expertise in performing multi-stress (e.g. acidification, nitrification, suspended sediments, oil and other pollutants, temperature stress, light stress, oxidative stress) on a wide range of marine animals in aquarium systems
- Expertise in reef building, reef restoration and habitat enrichment
- Expertise in marine genomics
- Knowledge and insight on coral reefs, functioning of sponges, human impact on marine ecosystem services, marine oil pollution and optimal functioning of marine animals in their environmental context.



Contact

Marine Animal Ecology Group
T +31 (0) 317 483307
F +31 (0) 317 483962
E office.mae@wur.nl

Visiting address

Droevendaalsesteeg 1
Radix (building no. 107)
6708 PB Wageningen
The Netherlands

Postal address

P.O. Box 338
6700 AH Wageningen
The Netherlands

www.wur.eu/mae

The mission of Wageningen University & Research is "To explore the potential of nature to improve the quality of life". Under the banner Wageningen University & Research, Wageningen University and the specialised research institutes of the Wageningen Research Foundation have joined forces in contributing to finding solutions to important questions in the domain of healthy food and living environment. With its roughly 30 branches, 5,000 employees and 10,000 students, Wageningen University & Research is one of the leading organisations in its domain. The unique Wageningen approach lies in its integrated approach to issues and the collaboration between different disciplines.

Marine Animal Ecology Group

Credits: Tinka Murk



WAGENINGEN
UNIVERSITY & RESEARCH

Marine Animal Ecology Group

Marine Animal Ecology (MAE) was established as a chair group at the Department of Animal Sciences of Wageningen University & Research in July 2015. MAE aims to “understand how and to what extent marine animals adapt to changing environments”. Climatological, ecological and anthropogenic drivers of change require short-term (physiological) and long-term (heritable) adaptations of animals within their ecological context. Understanding this is crucial for sustainable use and management of marine ecosystems.

Our activities

The issue

Marine and coastal environments harbour diverse habitats that support an abundance of marine life. Life in our seas provides valuable services, including moderating impacts of global climatic change and seafood production. This, however, requires healthy ecosystems and high-quality habitats for animals to be able to fulfil their life cycles and recover from disturbances.

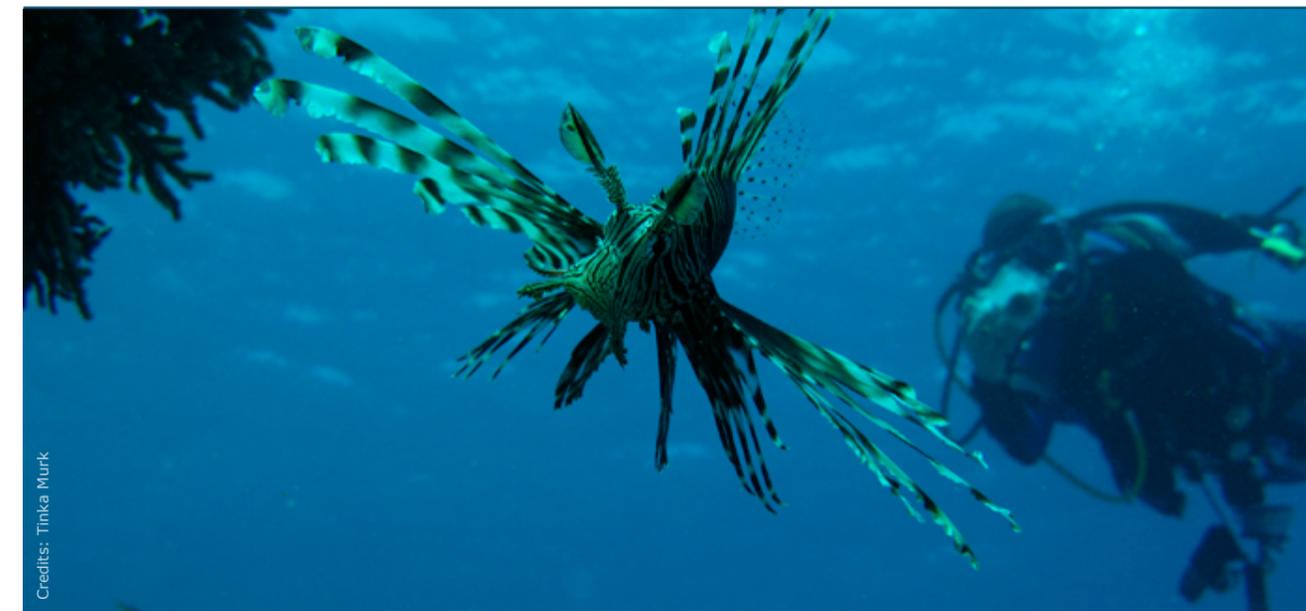
Marine systems have always been subjected to natural, local and global changes. In recent times, however, human activities and increased rates of environmental change have put unprecedented pressures on marine organisms and the ecosystems they live in. Specifically, the combination of global climate change, increased carbon dioxide levels, overfishing, habitat degradation, pollution and introduction of new species have seriously altered and degraded marine ecosystems, species compositions and the biological performances of marine animals.

Our research

The MAE Group investigates the mechanisms of adaptation and resilience in marine animals in the context of these environmental changes. Our research encompasses different organismal levels, from population genomics to eco-physiology, early life-stage development, up to whole ecological community responses. Our research includes (genomic) adaptation to future extreme environments, studies in marine lakes in Indonesia, direct and indirect effects of pollution and of habitat destruction on benthic fauna including Atlantic deep water sponges. We conduct experiments in aquaria, in the field and in model ecosystems. On a more applied side, we work on building with nature options, for example in coral reef restoration, and on kick-starting marine biodiversity. We also try to explain why some species become a pest, while others disappear.

The targets

Our activities target a wide array of marine animals (e.g. corals, sponges, sea urchins, fish and marine mammals) that play a key role in their ecosystems and that are



Credits: Tinka Murk

"Marine science for impact' includes advice on how degraded marine ecosystems can be 'kick-started' to support their recovery"

important for humans. These animals depend on healthy mangroves, deep sea environments, arctic seas, tropical coral reefs, sea grass fields and the temperate North Sea.

The toolkit

Our research toolkit comprises single and multifactorial aquarium, mesocosm and in situ experiments, as well as field observations. In our studies we apply ecophysiological, morphological, developmental and molecular techniques.

Our education

Our education offers a broad range of subjects (broader than our research activities), linking marine ecology to other biological and non-biological disciplines. Fundamental aspects of marine animal ecology are applied to topics such as building with nature, marine protected areas and management of marine resources. Societal applications always require interdisciplinary approaches including social and technological sciences. In courses, theses and internships we teach both the basics and the applications of marine animal ecology, preparing students for a variety of career opportunities in marine animal ecology.

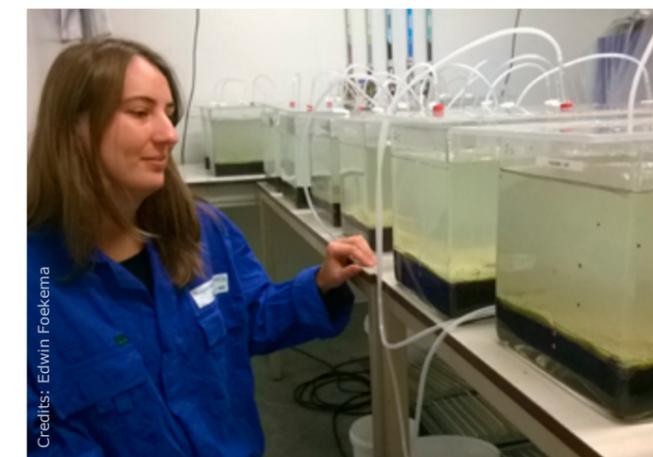
The link with society

With our research we fill key gaps in the fundamental understanding of wanted and unwanted changes in community composition and population success in changing and often heavily-used marine ecosystems marine ecosystems. This provides knowledge for science-based marine conservation and resources management, including opportunities such as active ecosystem restoration and building with nature. In our education and



Credits: Esther Dondorp

MAE scientists inspecting a marine lake in Indonesia from the air.



Credits: Edwin Foekema

MAE laboratory simulation of oil spill effects on marine benthos.

MAE: research focus and methods

