



ALFRED-WEGENER-INSTITUT  
HELMHOLTZ-ZENTRUM FÜR POLAR-  
UND MEERESFORSCHUNG



waddenacademie



# Wadden Sea World Heritage Summer School 18 - 31 August 2018

Sylt (D), Wilhelmshaven (D), Spiekeroog (D), Harlingen (NL), Texel (NL)

# Summer School

During this two-week summer school, taking place from 18 - 31 August 2018, master students and (early) PhD students explore the natural dynamics of the Wadden Sea at three different Wadden Sea islands: the German islands of Sylt and Spiekeroog, and the Dutch island of Texel. The Wadden Sea World Heritage Summer School is a joint initiative of three research institutes, namely NIOZ, AWI and ICBM, as well as the Waddenacademie.

## Summer school content

The participants will be introduced to current Wadden Sea research taking place at the three institutes AWI, ICBM and NIOZ, by researching ecological processes in intertidal environments, e.g. by studying beach biogeochemistry or predator-prey interactions on tidal flats. In the evenings, there will be talks by local specialists on current and important topics with regard to the ecology, nature conservation and sustainable use of natural resources of the Wadden Sea. The summer school thereby strives to acquaint the participants with the ecology, but also with trilateral conservation and management aspects of this unique ecosystem.

## Learning objectives

Participants will gain a generic understanding of concepts and observational and experimental methods needed to examine key ecological processes in estuarine ecosystems. They will also acquire a basic understanding of the challenges of managing the natural values of a World Natural Heritage Site on a national and trilateral level.

## Participants

Master and (early) PhD students in marine biology, marine environmental sciences, marine resource management or related disciplines, in particular from Dutch, German and Danish universities. The summer school is limited to 16 students. Proficiency in English is required.

## Registration

To apply for participation in the summer school, please register before 15 June 2018 via the registration form on the summer school's website: <https://www.nioz.nl/en/education/marine-studies/wadden-sea-world-heritage-summer-school-2018>

Students are also asked to supply us with two reference letters which should be sent to [education@nioz.nl](mailto:education@nioz.nl). All applicants will be informed about the selection outcome no later than 30 June 2018.

## ECTS

4 ECTS, based on lectures, field/lab work and short student presentations. Participants will receive a summer school certificate from the participating research institutes, namely the University of Oldenburg (ICBM), the Royal Netherlands Institute for Sea Research (NIOZ) and the Alfred-Wegener-Institute for Polar and Marine Research (AWI). Students shall use this certificate for approval of the ECTS at their home university.

## Accommodation and costs

Participants will be sharing rooms, either 2- or 3-person bedrooms or dormitory rooms. A contribution of €490 is charged for accommodation, food and travel between the locations of the Summer School.

For inquiries about the scientific content of the summer school, please contact:

- Prof. Dr. Ir. Katja Philippart, Royal Netherlands Institute for Sea Research (NIOZ), Texel, and Utrecht University, The Netherlands, [Katja.Phillippart@nioz.nl](mailto:Katja.Phillippart@nioz.nl)
- Prof. Dr. Oliver Zielinski, Institute for Chemistry and Biology of the Marine Environment (ICBM), University of Oldenburg, Germany, [oliver.zielinski@uni-oldenburg.de](mailto:oliver.zielinski@uni-oldenburg.de)
- Dr. Christian Buschbaum, Alfred-Wegener-Institute, Helmholtz Centre for Polar and Marine Research (AWI), Wadden Sea station Sylt, List, Germany, [christian.buschbaum@awi.de](mailto:christian.buschbaum@awi.de)

For all other inquiries: Dörte Poszig, NIOZ education coordinator, [education@nioz.nl](mailto:education@nioz.nl)



# Programme

## **Alfred-Wegener-Institute for Polar and Marine Research (Sylt), Aug. 18 – 22, 2018**

(under the direction of Dr. Christian Buschbaum, Senior Scientist Coastal Ecology)

The island of Sylt represents a hotspot of non-native species because of intensive recreational boat activities and shellfish farming in that area. Originally cultivated Pacific oysters have escaped into the wild and have overgrown native blue mussel beds. Almost all intertidal mussel beds have turned into mixed reefs with strong effects on the associated species communities and species interactions. In the shallow subtidal zone, extensive aggregations of the non-indigenous Japanese Seaweed form new habitats, which are intensively used by native but also non-native organisms. Due to the increasing number of new species in the Wadden Sea ecosystem, changes are happening as fast as never before. The focus of the summer school programme on Sylt Island will be on non-native species. Students will study the occurrence and spatial distribution of non-native species from the high intertidal down to the shallow subtidal zone, investigate the function of non-native species as habitat builders, and explore the effects that non-native organisms may cause on native species and communities. Ideas how to deal with the increasing flood of introduced species in coastal ecosystems will be discussed.

## **Common Wadden Sea Secretariat & UNESCO (Wilhelmshaven), Aug. 22 – 24, 2018**

The Common Wadden Sea Secretariat was established in 1987 and is located in Wilhelmshaven, Germany. It collects and evaluates information on the monitoring, the protection and the ecological condition of the entire Wadden Sea. Further responsibilities of the CWSS include the preparation and production of documents for ministerial conferences, meetings of the Wadden Sea Board and trilateral – Dutch, German and Danish - work groups. Students will get acquainted with the work of the CWSS and visit the UNESCO Wadden Sea World Heritage Visitor Centre.

## **Institute for Chemistry and Biology of the Marine Environment of the University of Oldenburg (Spiekeroog), Aug. 24 – 27, 2018**

(under the direction of Prof. Dr. Oliver Zielinski, ICBM Director and Head of Marine Sensor Systems)

Sandy beach ecosystems constitute an important transition zone between continental and marine zones. They are vulnerable and may be affected, for example, by erosion caused by climate-induced sea level rise or increased nitrogen availability due to human activities. The nearshore and offshore zone of Spiekeroog is exposed to the hydrodynamics of the open sea and is strongly affected by tides, winds and wave-driven processes. The focus of the summer school on Spiekeroog Island will be on beach ecosystems, specifically the biogeochemical processes and dynamics, as well as the interactions between abiotic and biotic factors within these systems. For this, a beach located at the northern side of Spiekeroog will be studied. Students will assess spatial variations in biogeochemical key parameters in this high-energy beach system along a transect and will look at the spatial variation of macrofauna communities in the near- and offshore zone of the beach system in relation to environmental parameters such as hydrodynamics and sediment type.

## **Visit to Harlingen, Aug. 27, 2018**

(with Dr. Meindert Schroor, Board Member of the Waddenacademie, portfolio “Cultural History”)

Harlingen is a town located in the province Fryslân in the North of the Netherlands with a long history of fishing and shipping. It developed as a town since the 13th century and is one of the oldest cities in this part of the Netherlands. Harlingen has a well-preserved 17th century historic centre with old canals and more than 600 authentic merchant houses and warehouses. During a tour guided by Dr. Meindert Schroor, the long-lasting and ever-changing interactions of the citizens of Harlingen with the Wadden Sea will be explored.

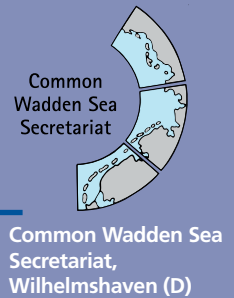
## **Royal Netherlands Institute for Sea Research (NIOZ), Texel, Aug. 27 – 31, 2018**

(under the direction of Prof. Dr. Ir. Katja Philippart, Chief Scientist Wadden Systems Research Centre)

Coastal marine ecosystems, including intertidal systems such as the Wadden Sea, are among the most productive systems of the world. Large inputs of nutrients and organic carbon from land and oceans support high rates of primary production of pelagic microalgae in the shallow waters. Vast intertidal mudflats allow for high primary production by benthic microalgae and function as nursery areas for juvenile fish and fuelling areas for migratory birds. Many of these areas are acknowledged as being of global importance, and are protected by international frameworks including Natura2000, Ramsar and UNESCO World Heritage. The Marsdiep is the westernmost tidal basin of the Wadden Sea, with nutrient-rich freshwater inputs from Lake IJssel and a strong tidal exchange with North Sea waters via the Marsdiep tidal inlet. Students will study primary and secondary productivity in an estuarine environment in relation to environmental parameters such as emersion time and sediment composition.

# One Summer School, five locations

Alfred-Wegener-Institute,  
Wadden Sea station, Sylt (D)



Royal Netherlands Institute  
for Sea Research, Texel (NL)



Institute for Chemistry and Biology of  
the Marine Environment, University of  
Oldenburg, Spiekeroog (D)