Executive summary


The WGHABD Members presented annual reports on the status of harmful algal blooms (HABs); (ToR a) throughout the reporting cycle. HABs continue to cause problems within the ICES area with some showing a regional distribution e.g. cyanobacteria in the Baltic, neurotoxic shellfish poisoning (NSP) in the Gulf of Mexico, azaspiracids (AZA) in Ireland and the UK. Issues associated with paralytic shellfish poisoning (PSP) and diarrhetic shellfish poisoning (DSP) were more widespread. Highlights from the three years reporting include increased problems with DSP and amnesic shellfish poisoning (ASP) in the USA, first records of Tetrodotoxin (TTX) in shellfish from the Netherlands, concentrations of AZA in Mytilus edulis above the closure limit for the first time from English waters, and continued issues with ciguatera fish poisoning in Europe.

Three ToRs contribute to the work of the Intergovernmental Oceanographic Commission of UNESCO Intergovernmental Panel on Harmful Algal Blooms (IOC IPHAB). The manuscript on fish killing algae (ToR b) will feed into the IP HAB task team on fish killing algae. WGHABD have updated and quality controlled data in the IOC-ICES-PICES Harmful Algal Event Database (HAE-DAT). These data will be used to produce a Harmful Algal Event status report for the ICES area. This report will be the first overview of harmful algal events in the ICES area and will provide a useful resource to scientists, policy makers and regulators working in the area of HABs (ToRs c and f). The status report will be finalised during the WGHABD 2018 meeting and will be the ICES contribution to the Global HAB Status Report currently in production by the IOC.

A dynamic range of new findings (ToR e) were presented each year with summaries included in each annual report. These presentations encompassed studies performed with the latest technologies or approaches e.g. the use of new technologies such as the imaging flow cytobot to examine HABs in the USA and Sweden, citizen science in France, the use of sediment cores to reconstruct the history of toxic Nodularia spumigena blooms in the Baltic Sea and Oslofjorden, development of early warning systems in the UK, social unrest in Chile as a result of HABs.

WGHABD reviewed the OSPAR JAMP Eutrophication Guidelines on phytoplankton species composition (ToR g and l). WGHABD has addressed the relationship between HABs and eutrophication in previous years and contributed their expert view to this document. Subsequently WGHABD participated in the subsequent advisory drafting group ADGJAMP.

WGHABD contributed to the organization of the ICES-PICES-IOC scientific symposium on climate change and harmful algal blooms held 19–22 May 2015, Gothenburg, Sweden (ToR h). More than 60 scientists from across the globe participated. A major output of this symposium is the peer reviewed publication, Wells, M.L. et al., (2015). Harmful algal blooms and climate change: Learning from the past and present to forecast the future. Harmful Algae, 49:68–93.

A review of molecular methodologies (ToR i) in the study of HABs took place in 2015 with reviews of the use of molecular probes, qPCR methods targeting toxin producing
genes and metabarcoding presented. Members from WGHABD will contribute to the symposium coordinated by WG Phytoplankton and Microbial Ecology (WG PME) and WG Integrated Morphological and Molecular Methods (WG IMT) in October 2017.

ToR j reviewed the existing knowledge and latest findings on BMAA, the amino compound β-methylamino alanine during year 1 of the reporting cycle and provided clarification on methodological issues.

ToR k reviewed the dynamics of Gymnodinium catenatum in the Iberian Peninsula, Alexandrium minutum in the Bay of Brest and A. ostenfeldii and cyanobacteria in the Baltic.

The methodology used for the collection of phytoplankton samples in harmful phytoplankton monitoring programmes and the abundances used as threshold levels is currently being reviewed by the EU National Reference Laboratory for Biotoxins Working Group on Monitoring Toxic Phytoplankton. WGHABD delegates participating in this working group are providing updates on developments in this area (ToR d).