



EMBARGO: 00:01 GMT, 9th May 2018

Launch of first open-sourced global ocean data portal

OCTOPUS (The Ocean Tool for Public Understanding and Science) launched today by Nekton at the Ocean Risk Summit in Bermuda to begin a new era of collaborative marine research.

Constructed over the last two years at the Department of Zoology, University of Oxford, and funded by the Oxford Martin School, OCTOPUS provides a single source to access the latest global marine data. OCTOPUS dynamically harvests and harmonises open-access marine data including oceanographic observations, biodiversity and human stressors on the ocean. Its objective is to support scientific study, monitoring, policy and decision-making for the improved management of the ocean.

Despite having collected more data on the ocean in the last two years than in all previous years combined, the sustainable governance of the ocean is still being hampered by both a lack of critical data, and inadequate access to existing data. Where information exists, databases at national and international level are fragmented, and often incompatible and difficult to access without a high level of computational or scientific skill.

OCTOPUS Founder, Professor Alex Rogers, University of Oxford and the Scientific Director of Nekton, considers OCTOPUS to be a critical contribution to a global ocean infrastructure: 'OCTOPUS enables scientists, policy makers and the general public to have open-access to a wide variety of current and high quality marine data to inform and catalyse their activities. In effect, it is a gateway to knowledge on marine ecosystems. We hope it can become the data brain to inform and accelerate the sustainable governance of the ocean,' he says.

The scientific community is encouraged to take leadership in providing other databases to this open-access portal, and the development of new applications using its analytical tools.

How it works

OCTOPUS currently gathers 98 billion data points from 25 open sources to create 30 different thematic layers related to biodiversity, administration, oceanography, human impact and ecosystem services.

Ocean Data Explorer is the central gateway for users to access, analyse and visualize ocean state including related to:

- Ocean biodiversity: species distribution and occurrence, habitat suitability, deep-sea and coastal ecosystems.

- Oceanography: bathymetry, water (temperature, salinity, phosphate, oxygen, nitrate, silicate), currents, turbidity.
- Ecosystem services such as net primary production.
- Human impact: ship traffic density, coral bleaching, ocean acidification, fishing activity, marine mining licenses.
- Administration: Exclusive Economic Zones, Marine Protected Areas, Regional Fisheries Bodies, Marine Ecoregions.

The OCTOPUS server is constantly updated. As new datasets become available from any sources, they are harvested, preprocessed and ingested into the database. Where applicable, data are served at different spatial (original, 0.09°) and temporal (1 month, 1 year, 10 years, 50 years) resolutions, at standard depth levels, spanning up to 50 years.

Sources currently include the Ocean Biodiversity Information System (OBIS), Intergovernmental Oceanographic Commission (IOC), European Union (EU), International Seabed Authority, Food and Agricultural Organization (FAO), United Nations Environment Program (UNEP). Additional sources will be added as the platform develops.

Applications

With the ability to draw on data stretching back 50 years, OCTOPUS enables scientists, policy makers and the general public to quantify the past and present state of the ocean at a local, regional or international level.

Users can undertake large-scale macro-ecological modelling or human impact studies to support scientific study, policy and decision-making for improved management.

One of the first applications of OCTOPUS will be to study the geographic distribution of biodiversity, ecosystem services and risks to the environment to inform the negotiations on a new implementing agreement for the United Nations Law of the Sea to ensure humanity's reliance on the high seas.

Ends.

EDITOR'S NOTES

Further Information

OCTOPUS was built and developed in collaboration between the Oxford Martin School and the Zoology Department at the University of Oxford. The Nekton Oxford Deep Ocean Research Institute ('Nekton') are responsible for on-going development and management of OCTOPUS.

OCTOPUS will be published on 00:01GMT, 9th May 2018 @ <https://octopus.zoo.ox.ac.uk>

Prior to launch, the OCTOPUS BETA site is available at: <https://octopus.zoo.ox.ac.uk/dev/> and the Open Data Explorer at <https://octopus.zoo.ox.ac.uk/dev/apps/ode>

A video explaining how the Ocean Data Explorer works is available:
https://octopus.zoo.ox.ac.uk/dev/static/video/app_ode_howto.mp4

A full list of data sources is available at <https://octopus.zoo.ox.ac.uk/dev/data>

Media Contacts

- For more information or to schedule an interview please contact the Media Office of the Nekton Oxford Deep Ocean Research Institute: media@nektionmission.org / +44 7984 677509.
- For additional graphics related to Octopus visit Nekton Newsroom: <https://nektionmission.org/about/press>

About Nekton Oxford Deep Ocean Research Institute (www.nektionmission.org)

The mission of the Nekton Oxford Deep Ocean Research Institute (Nekton) is to explore the deep ocean to reveal the unknown for the benefit of humanity. Nekton undertakes multidisciplinary scientific research into the state of the deep ocean, the planet's most critical yet least explored ecosystem. Nekton's discoveries inform global decision makers and ignite public interest to catalyse change. The Nekton Oxford Deep Ocean Research Institute is a charity, established in the UK, with headquarters in Oxford.

About XL Catlin & Ocean Risk Summit (www.oceanrisksummit.com)

XL Catlin, presenting partner of the Ocean Risk Summit, is the global brand used by XL Group Ltd's (NYSE:XL) insurance and reinsurance companies which provide property, casualty, professional and specialty products to industrial, commercial and professional firms, insurance companies and other enterprises throughout the world. Clients look to XL Catlin for answers to their most complex risks and to help move their world forward.

Lead Scientist, Founder of Octopus:

- *Professor Alex Rogers:* Alex is a Fellow of Somerville College and Professor of Conservation Biology at the Department of Zoology, University of Oxford, and Scientific Director of Nekton Oxford Deep Ocean Research Institute ('Nekton') and the International Programme on the State of the Ocean. He has led and participated in 20 major marine expeditions including coordinating technical dive teams. His marine policy work includes projects for the UN International Seabed Authority, UN Division of Ocean Affairs and Law of the Sea, IUCN, Global Ocean Commission, and the G8+5 Global Legislators Organisation for a Balanced Environment (GLOBE).