
JAYWUN
جيون

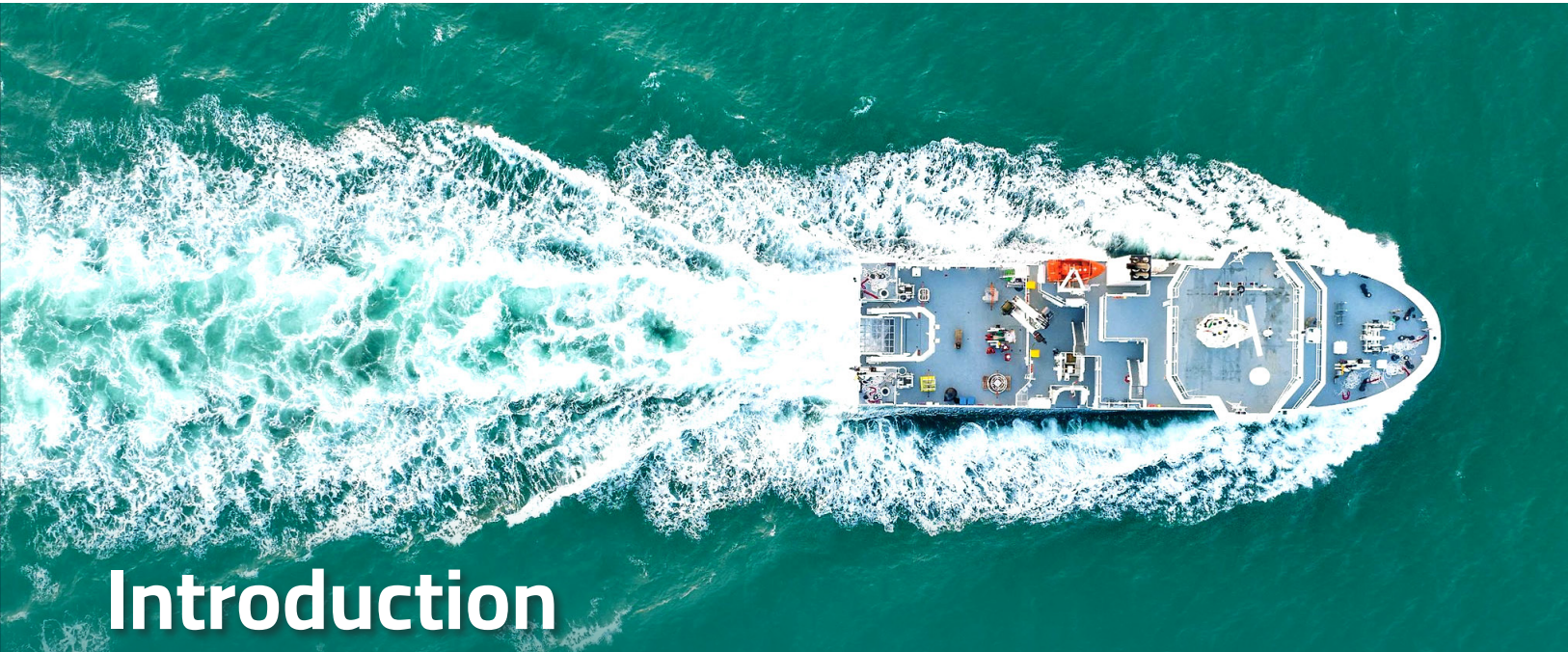
هـيـئـة الـبـيـئـة - أبـوظـبـي
Environment Agency - ABU DHABI

www.ead.gov.ae customerhappiness@ead.gov.ae
T +971 2 693 4444 PO Box 45553 . Abu Dhabi . United Arab Emirates

JAYWUN
جـيـوَن

The latest research vessel in the middle east, set sail with cutting edge technology and a mission to explore the uncharted depths of the region's marine ecosystems.

Equipped with state-of-the-art laboratories and expert scientists, Jaywun aims to pave the way for groundbreaking discoveries and sustainable marine conservation efforts.



Introduction

Under the patronage of His Highness Sheikh Hamdan bin Zayed Al Nahyan, Ruler's Representative in Al Dhafra Region and Chairman of EAD, the Agency has built the Middle East's most advanced research vessel, Jaywun.

The 50m state-of-the-art, multipurpose marine conservation and fisheries vessel will use environment-friendly technologies to conduct specialized research in the Arabian Gulf – the world's hottest sea and a natural climate change laboratory – as part of the UAE's forward-looking science and innovation-based initiatives.

Our mission

To conduct

a comprehensive assessment and monitoring of the marine environment and contribute to supporting local and federal government entities in achieving their commitment to marine biodiversity assessment and management.

Provide

a reliable scientific platform that meets the needs of marine research in the country, and support academia and other concerned and independent organizations.

Boosting

local capabilities in the field of marine science.

Objectives

- Conduct fisheries resource assessment surveys to support landing site data and provide abundance estimates of fish biomass as well as determine the status of fish stock in the country.
- Pioneer oceanographic and fisheries research in the UAE's largely unstudied waters of 10 meters and deeper.
- Monitor and assess the effects of climate change on the marine environment.
- Provide a reliable scientific platform that meets the needs of marine research in the country.

Research vessel
Capabilities

Fisheries Studies
Includes a case study of fish stocks and biological data of commercially valuable fish.

Study of Marine Biology
Includes an integrated study of ecosystems, natural habitats, and wildlife.

Chemical Oceanography
Chemical analysis of seawater quality including all types of pollutants.

Physical studies of oceans
udy of water movements (waves, tides, sea currents).

Marine Geology
Research and study of the seabed by sound wave exploration and sample collection.

Vessel
Technology

The state-of-the-art vessel is the most advanced in the region with scientific equipment that includes:

1. Acoustics: seabed mapping and acoustics
    a. Simrad EK 80 Echo-sounders operating at 38, 120, and 200 kHz with splitbeam, wide-band transducers.
    b. Singlebeam Echosounder: KONGSBERG EA640 12KHz and 200KHz.
    c. Side Scan Sonar: Rack Mount Topside Processor, Stainless Steel Towfish with various specifications.
2. CTD (conductivity, temperature, and depth sensing device) rosette, with 24 bottles and capability to go down to 6000m.
3. Remotely operated vehicle (ROV) which operates down to 500m with an option to go to 1000m and beyond. It delivers sharp uncompressed, near-zero latency 4K video
4. Scuba diving facilities
5. Trawling equipment, plankton sampling net, sediment grabs and corers

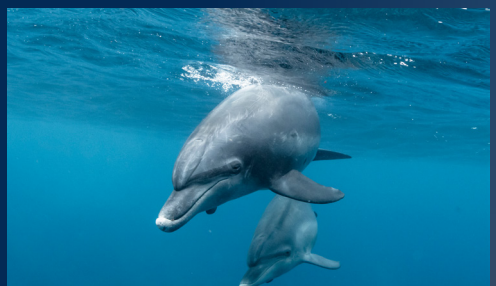
The vessel houses six laboratories: a fisheries laboratory; an acoustic laboratory; a chemical analysis laboratory; a bio-physical laboratory; a wet laboratory and is also setup to operate an air quality laboratory.

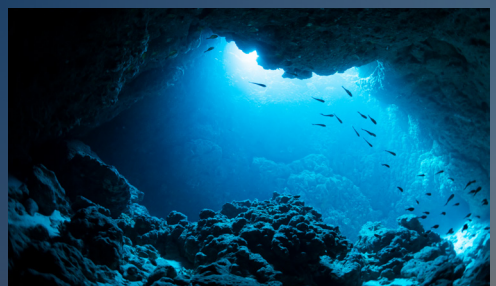
2023 Research Achievements

A comprehensive fisheries resource assessment survey, which provided updated estimates of the abundance and distribution of fish and marine resources in UAE waters.

First eDNA baseline and genomic sequencing of fish species in UAE's waters

in partnership with G42 and OceanX – establishing the first baseline for DNA bar-coding of fish stocks in the country, with a study to complete genome sequences of more than ten major fish species.





Led the world's first offshore atmospheric research expedition,

where we took the opportunity as the vessel was being delivered from Spain to the UAE to perform an air quality survey and sample parameters using advanced monitoring equipment. This study helps us understand coastal and offshore air quality and climate change and was accomplished with partnership with the Max Planck institute and the Cyprus institute.

Conducted a first time microplastics survey

during the journey from Spain to the UAE, with results indicating an increased number of microplastics found in enclosed bodies of water, in comparison to open seas.

Air Quality Campaign on the Transport of hydrocarbons and ozone formation downwind the Arabian Gulf

In collaboration with the Cyprus institute, which performed observations of the main gaseous pollutants to assess the background pollution transport from the Arabian gulf and evaluate its contribution to ozone formation in the United Arab Emirates.

Initial Characterization of Major Biogeochemical Parameters of the Arabian

to characterize the pelagic microbial composition of the Gulf during the hottest time of the year, determining dominant primary producers and influencing fisheries and coral reefs.

Vessel Specifications:

- Draft: 4.50 m
- Length Overall (LOA): 47.10 m
- Length at Perpendiculars (Lpp): 45.00 m
- Breadth (Molded): 12.00 m

Propulsion and machinery:

- PTI (electrical propulsion motors for diesel electrical mode): enables fuel efficiency and use of electric motor at speed of up to 7 knots.

Ballast Water Treatment System:

- specifically designed for the disinfection of organisms contained in ballast water. Provides efficient and reliable ballast water treatment to protect the environment.