

BRIDGE-BS DATABASE

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OBJECTIVE

Develop a **comprehensive database** and **user-friendly web interface** for BRIDGE-BS and historical Black Sea data (EMBLAS, ANEMONE, etc.)

BACKGROUND AND COMPLIANCE

- Based on the Water Quality Database (WQDB)
- Compliant with EU directives and FAIR principles
- Stores standardized physical, chemical, and biological environmental data.

FEATURES

- **Streamlined of environmental data management**
- **Automated workflows for efficiency**
- **Fast and browser-based access**
- **Modular, scalable design**
- **Robust storage with easy integration of new data sources.**

BRIDGE-BS OBSERVATIONS METADATA

A decorative graphic at the bottom of the slide consisting of several wavy, overlapping lines made of small dots in shades of blue and teal, creating a sense of motion and data flow.

33 Multidisciplinary research cruises conducted across the Black Sea, covering pilot sites and open-sea areas

>1,160 Sampling stations surveyed

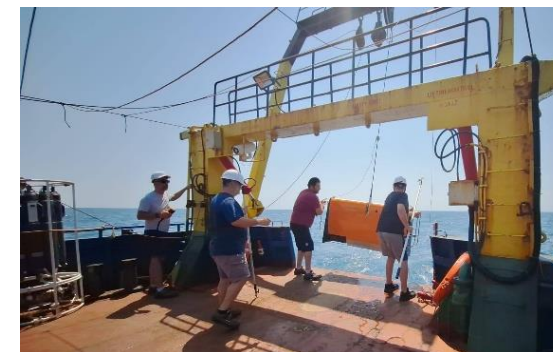
>713,000 validated data records compiled and analyzed by BRIDGE-BS Partners

Data include key **physical (temperature, salinity), chemical (nutrients, oxygen, pollutants), and biological (phytoplankton, zooplankton, benthos)** parameters

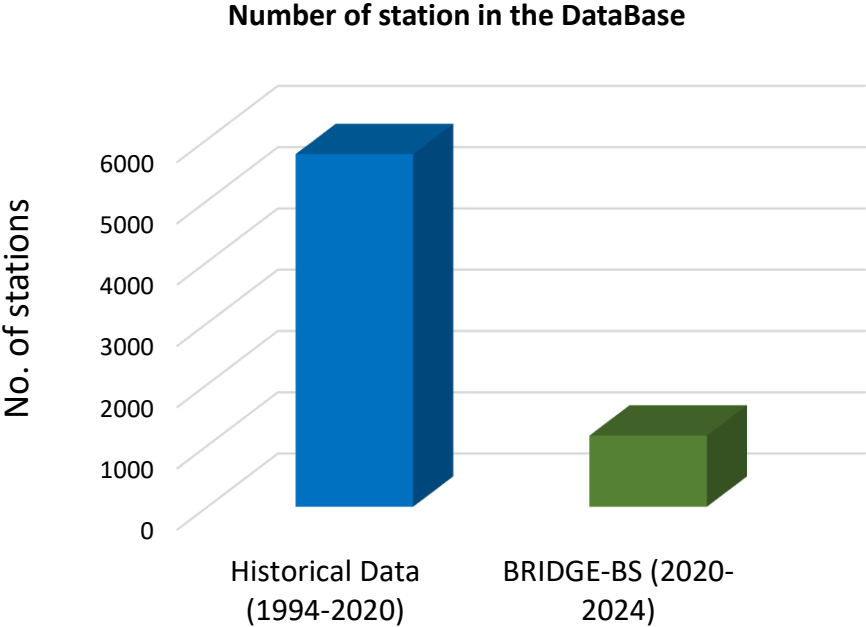
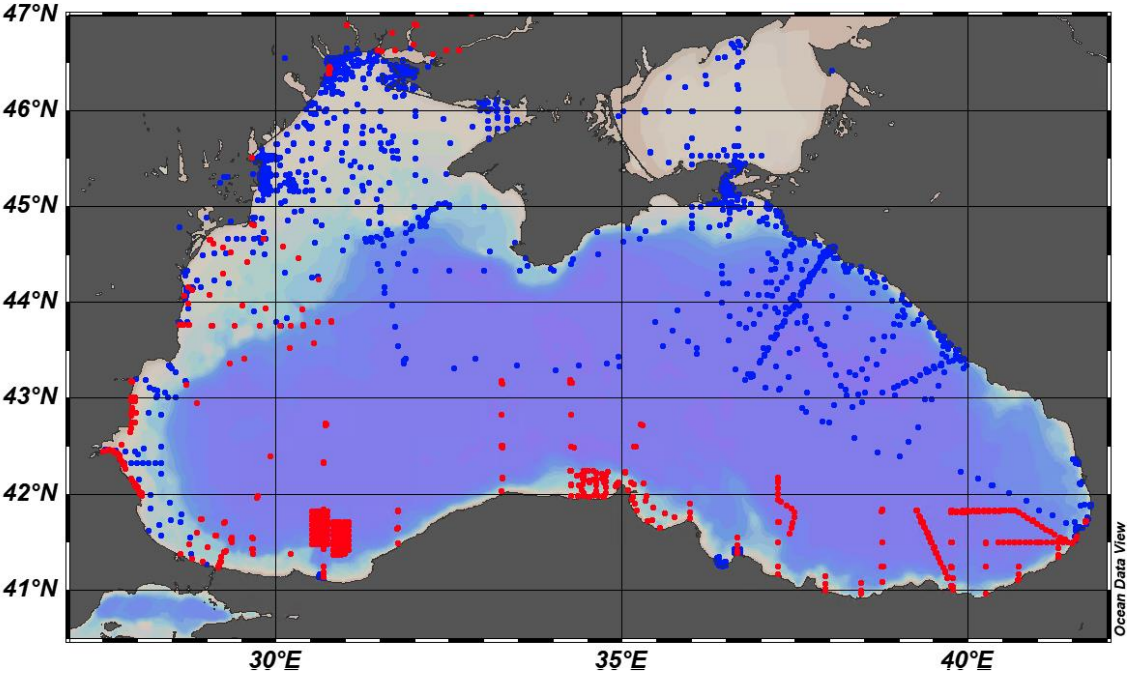
Continuous underway measurements collected along **>2,700** km of cruise tracks

Provides a comprehensive, **high-quality dataset** to support **evidence-based management and protection** of the Black Sea ecosystem.

Over **100 scientists** from **19 partner institutions** across **12 countries** are involved!



+ BRIDGE-BS data (2020-2024)



Historical dataset includes

5,755
stations (1994–2020)

**BRIDGE-BS EXPANDED SPATIAL
AND TEMPORAL COVERAGE OF
THE BLACK SEA!**



BRIDGE-BS added

1,161
new stations
(2020–2024, +17%)

Web interface built on a **Model-View-Controller architecture (MVC)**, ensuring flexibility and rapid adaptation as the system evolves

Developed using **PHP, JavaScript, Ajax, with Bootstrap** for layout and **Google Maps** for geospatial visualization

Designed with partner feedback, extending the standard **What-Where-When-Who-How query model with filters for stressor parameters** and **pilot sites** to align with project research and policy priorities

Parameters / Stressors* Additional parameters Pilot sites* Organisations*

None selected ▾ None selected ▾ Select Pilot Site ▾ Select Organisation ▾

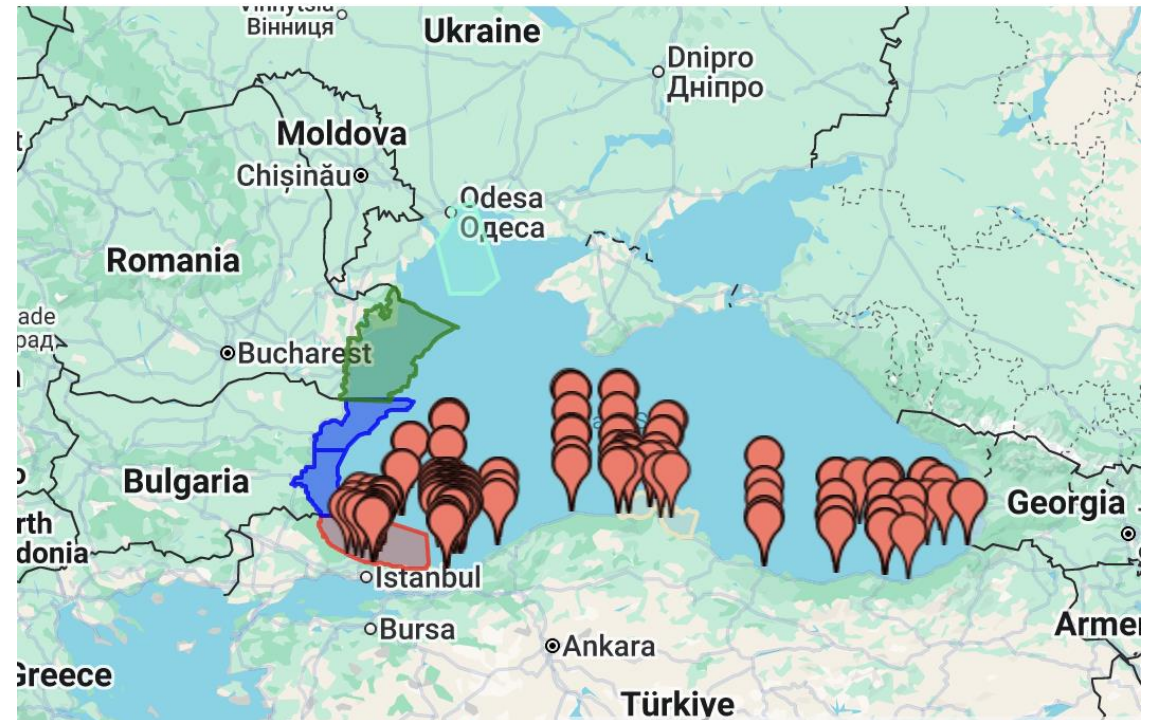
Data Origin* Access Type* Instrument type

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Date Start Date End

01-01-1999 13-11-2025

*The parameters marked with * must be selected*

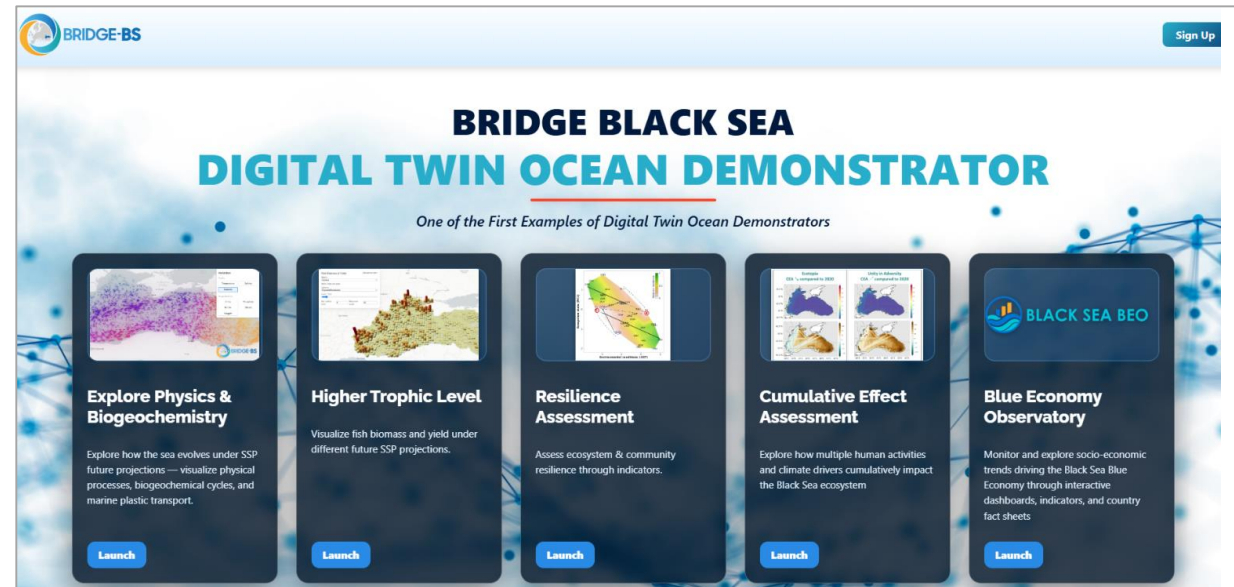
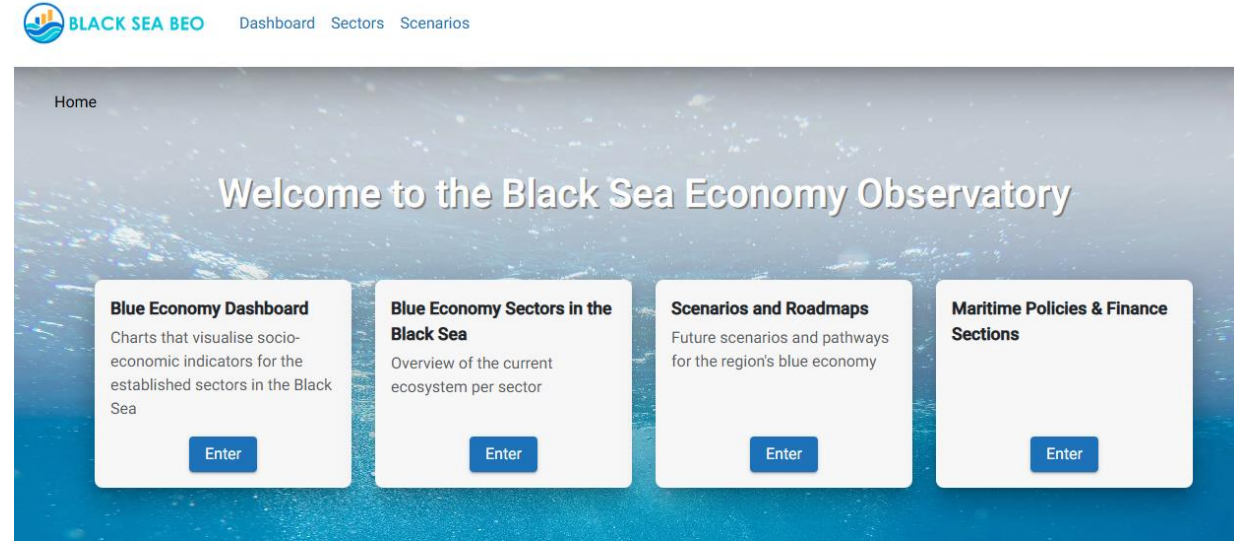


BRIDGE-BS exemplifies **international collaboration** in environmental data management, promoting open data exchange with rigorous quality standards.

Defines a **safe operating space** for Black Sea Blue Economy activities using **data-driven ecosystem models under climate and anthropogenic pressures**. Results available via the **BRIDGE-BS Digital Twin of Ocean (DTO)** within the Virtual Centre of Science for a Resilient Black Sea.

Integration with **SeaDataNet Pan-European Infrastructure** makes Black Sea data more **discoverable and accessible** under a widely recognized international platform.

BRIDGE-BS Database remains operational and linked to the DTO, METU-IMS coordinates portal maintenance and ensures ongoing data access.





THANK YOU!

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