

Project Title

Assessment of Mortality Factors and Life History Trends in Black Sea Cetaceans

Project Data

Duration	Funding	Project location/ Region
12 months	18 000 €	Odesa

Project Partners

Who are the project partners?

- Schmalhausen Institute of Zoology, NAS Ukraine
- Ukrainian Scientific Center of Ecology of the Sea
- The Institute for Terrestrial and Aquatic Wildlife Research (ITAW), University of Veterinary Medicine Hannover (TiHo)
- University of Zonguldak

What does each partner specifically contribute to the project?

- Biology of animals
- Marine Environmental Monitoring
- Assessment of blast and acoustic trauma
- Samples for comparison

About the Project

What is the problem – and what do you want to change

The Black Sea is a unique semi-enclosed marine ecosystem, the world's largest anoxic water body. It is highly vulnerable to

about it? What are you doing specifically to achieve this goal?	environmental disturbances and anthropogenic impacts. Three cetacean species inhabit this ecosystem, each represented by endemic subspecies. Based on indirect evidence and historical declines, IUCN has classified the harbour porpoise and bottlenose dolphin populations as Endangered, while the common dolphin is listed as Vulnerable. Historical evidence suggests these populations experienced dramatic declines by the late 1980s due to direct takes, prey depletion, habitat degradation, and disease outbreaks. Recent research has documented that Black Sea cetaceans face the highest bycatch rates globally. Also, since February 2022, Russia's military aggression against Ukraine has introduced novel and severe threats to Black Sea marine ecosystems. We aim to conduct post-mortem examinations, laboratory analyses and population modelling of Black Sea cetaceans to determine causes of death, evaluate life history parameters, and specifically identify potential war-related impacts.
What is special or new about your approach?	This project completes pre-war baseline assessment of life history and mortality factors and establishes a new protocol for a war-time research
The figure: What does the project actually do?	This year showed an increase of mortality of harbour porpoises and common dolphins which can be classified as an unusual mortality event. Among multiple pathological findings, parasite infestations have been discovered including rare effects leading to death. For samples taken in previous years (2022), pathologies of ear bone anatomy were found. Analysis of age structure and population demography for baseline estimates of populations of harbour porpoises and common dolphins showed a long life span, strong and differential impact of bycatch on populations of harbour porpoises and their adaptations to bycatch pressure. These findings support establishing an integrated approach for monitoring of local populations and their health and mitigating adverse effects, in line with the existing best practices.
What remains? What	To be done:

concrete results are achieved, and who can use them in the future?

Laboratory analyses:

- all molecular pathogens,
- microbiology,
- toxicology (when feasible),
- ear histopathology

Interpretation of lab research

Drafting publications: causes of death, war impact

Submitting publications: life history, demography

Drafting recommendations: conservation

Dissemination, meetings with stakeholders: all protocols and recommendations

To be used by biologists, veterinarians, environment conservation practitioners and policy makers

See the project images
on the following pages



Project images

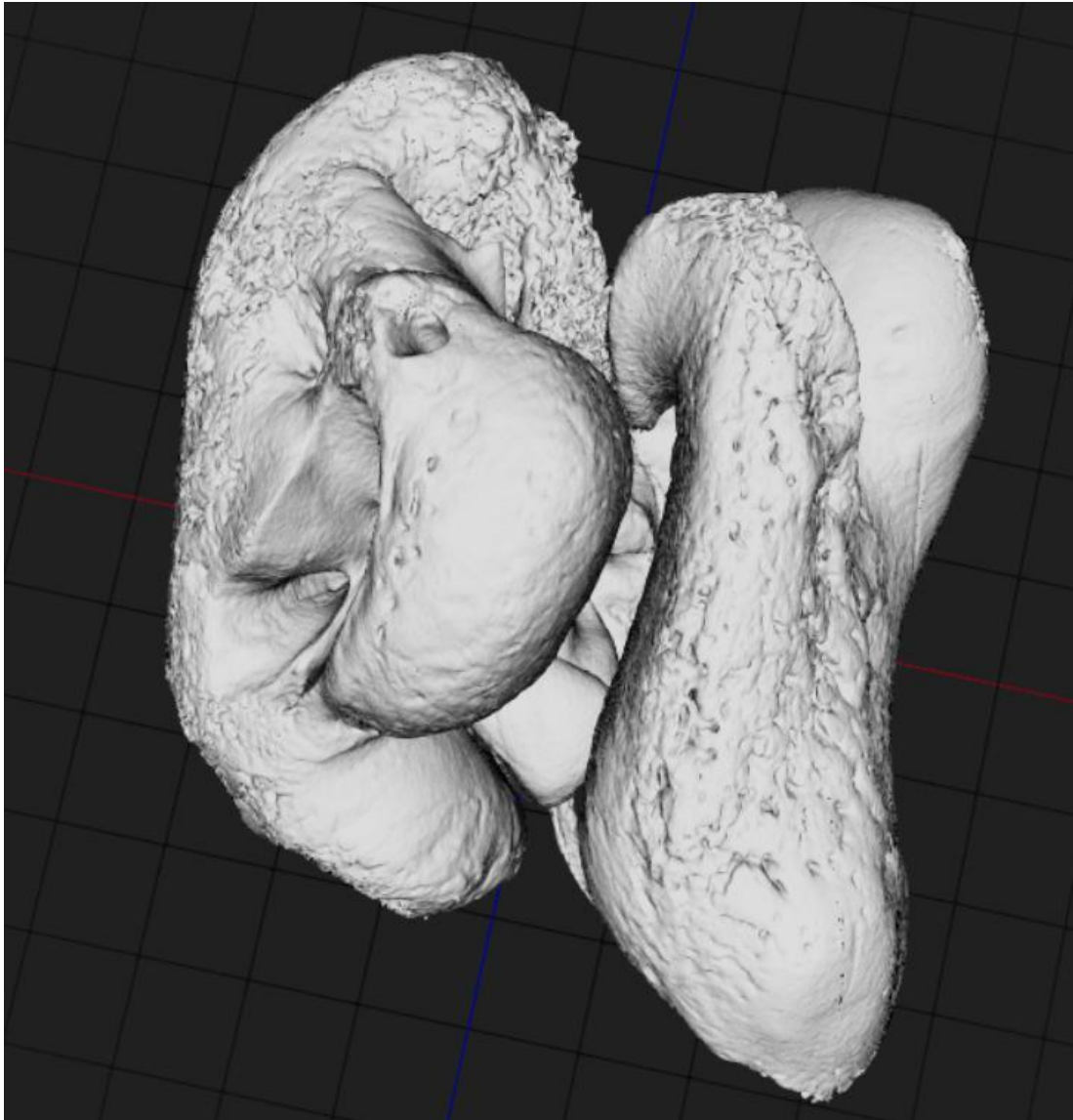
Image 1 of 2



A harbour porpoise for a necropsy.

Project images

Image 2 of 2



3D reconstruction of the microCT scan of the ear bones of the common dolphin.