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Institute of Marine Biology
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2024

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THE CONFERENCE

Welcome to the Third International Conference: Adriatic Biodiversity Protection – AdriBioPro2024. This landmark event, commemorating the 50th anniversary of the University of Montenegro and 25 years of the AdriaMed project, promises to be a pivotal gathering for advancing marine science and policy in the South Adriatic region. Against the dynamic backdrop of the SKILLS initiative, AdriBioPro2024 is dedicated to addressing the critical challenges and opportunities within the blue economy.

Participants

Our conference brings together a diverse community of researchers, policymakers, stakeholders, and enthusiasts, all united in their commitment to marine biodiversity, conservation, and sustainable practices. Through a series of plenary sessions, breakout discussions, and the engaging South Adriatic Sea Food Fair, participants will explore pressing issues such as marine litter, aquaculture, climate change impacts, and the conservation of aquatic ecosystems.

Format

Building on the successful formats of previous conferences, AdriBioPro2024 will foster a vibrant platform for sharing state-of-the-art research and innovative solutions. The insights gained here will be instrumental in shaping future marine science priorities and policies, ensuring a resilient and vibrant Adriatic environment. As we strive to balance conservation efforts with the development of the blue economy, this conference marks a significant step forward in our collective journey toward sustainable maritime heritage.

Background

University of Montenegro

In 2024, the University of Montenegro celebrates five decades of continuous contribution to Montenegrin society. The University of Montenegro has been and remains a field of challenging struggle for knowledge, freedom, and progress, where battles for the future of the country are fought through education, science, and art. Over the past fifty years, the university has played a pivotal role in nurturing the intellectual and cultural fabric of Montenegro, providing a platform for innovation and critical thinking that propels the nation forward.

AdriaMed Project

The FAO-AdriaMed Project (Scientific Cooperation to Support Responsible Fisheries in the Adriatic Sea) is an FAO Regional Project funded by the Italian Ministry of Agriculture, Food and Forestry Policies (MiPAAF), the European Commission since 2007, and the Croatian Ministry of Agriculture since January

2016. Operative since September 1999, the project aims to promote scientific cooperation among Adriatic countries, including Albania, Croatia, Italy, Montenegro, and Slovenia. By aligning with the Code of Conduct for Responsible Fisheries (FAO 1995), AdriaMed seeks to enhance the management of fishing activities, contributing to a broader understanding of the Adriatic Sea's shared fishery resources. This initiative is crucial for the sustainable management of biological resources that transcend geopolitical boundaries.

SKILLS Project

The SKILLS project, spanning from September 2023 to December 2027, aims to bolster the availability of skilled labor in the South Adriatic region's blue economy sectors. With a total budget of close to 6 million euros, including significant EU funding of 4 million euros, the project operates through a consortium of diverse partners. These include the University of Montenegro - Institute of Marine Biology as the lead partner, the Department of Labor Market Policies, Education, Training from Puglia Region, Italy, the Service for the Competitiveness of Productive Systems from Molise Region, Italy, the State Agency for Strategic Programming and Aid Coordination, Albania, the Ministry of Economic Development of Montenegro, and the Ministry of Agriculture and Rural Development, Albania. Through collaborative efforts, the SKILLS project endeavors to enhance existing educational pathways, establish novel ones, and implement on-the-job training schemes, thereby empowering the workforce and fostering economic growth in the region.

Content

AdriBioPro2024 is more than a conference; it is a call to action for the protection and sustainable use of our marine resources. Let us embark on this journey of exploration, collaboration, and innovation, working together to ensure a prosperous and sustainable future for the South Adriatic region.

Topics Addressed

1. Marine and freshwater biodiversity, systematics, taxonomy, and data management
2. Climate change and impacts to marine ecosystem
3. Aquatic alien and invasive species
4. Fisheries resources and fishing technology
5. Aquaculture and blue growth
6. Marine litter, ecotoxicology, and water pollution
7. Marine protected areas, conservation of aquatic resources and ecosystems
8. Environmental education
9. Elasmobranch biodiversity, conservation and management

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eDNA - A modern tool for the preservation of marine ecosystems: the example of the sea of Montenegro

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Abstract

The Mediterranean region is one of the most responsive to climate change in the world. The increase in air and sea surface water temperatures and salinity has already been observed in the Adriatic Sea. These factors, combined with navigation, increase the possibility of spreading invasive alien species (IAS). Since IAS could have severe negative consequences on marine biodiversity and biosecurity, biota monitoring in ports is necessary. Ballast water, hull fouling and bilge water are the main ship compartments which must be controlled. Targeted IAS can be detected from these media by metabarcoding. Metabarcoding is the XXI century biological tool for rapid and effective species identification at all stages of its life history. It consists of the extraction of DNA (eDNA) from water or sediments and the identification of multiple species. Here we consider the possibility of early detection of IAS that could appear in the sea of Montenegro in the near future, using metabarcoding: algae *Rugulopteryx okamurae*, ctenophore *Mnemiopsis leidyi*, barnacle *Austrominius modestus* and fish *Plotosus lineatus*. We will take samples from port Bar and port Kotor or/and marina Tivat. Recently discovered tubeworm *Ficopomatus enigmaticus* in Montenegro (in 2023) could have been detected by metabarcoding. According to Montenegrin laws, it is forbidden to bring non-native species into national waters with ballast and other waters, that is, it is mandatory to treat these waters adequately to prevent any form of sea pollution. Two of four species that could appear in the Montenegrin sea waters, presented here, are on the List of IAS of the Union concern of Regulation 1143/2014. Metabarcoding could serve as the most reliable early detection methodology for unwanted marine species and could accelerate and strengthen the capacity for monitoring, prevention, suppression and conservation law enforcement regarding marine IAS.

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Keywords: ballast water, early detection, eDNA, marine invasive species, metabarcoding.