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MAPA

YOUTH THINKS

BLUE

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Capacity building scheme for youth:

Youth Thinks (of) Blue

Final Version

Deliverable Number D.2.2.2.

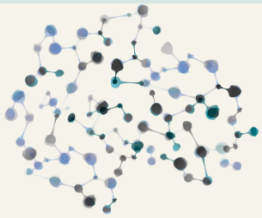
Youth thinks (of) Blue

Connecting Youth with MAPA Conservation

OBJECTIVE

Empower youth to become active leaders in marine conservation

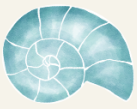
CAPACITY BUILDING



A programme for connecting science and action for the future of our MAPAs

SESSIONS

- The Basics: Oceanography
- Biodiversity: Life, Habitability, Ecosystems
- Engage into MAPA



OUTCOMES

- Enhanced knowledge
- Positive behavioural and attitudinal shifts
- Increased youth civic engagement

TARGET

- High school students
- University students

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MAPA

Project Acronym	MAPA
Project ID Number	ITHR0200462
Project Title	Marine Adriatic PArks
Specific objective	2.2
Work Package Number	2
Work Package Title	Engaging the Public in MAPAs management
Activity Number	2.2.
Activity Title	Elaboration of capacity building programmes and awareness activities for target groups
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Partner in Charge	PP4
Partners involved	PP3, PP4, PP5
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Subtitle	Connecting Youth with MAPA Conservation
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ABOUT THE CAPACITY BUILDING PROGRAM

INTRO TO YOUTH THINKS (OF) BLUE

Youth thinks (of) Blue is a Youth Programme for High School and University Students based in Ocean Literacy and education on Marine Protected Areas (MPAs) in the framework of MAPA project. As part of the initiative of MAPA partners to foster environmental awareness and scientific engagement among youth, this educational programme is designed as capacity building programme to strengthen the role of young people in marine conservation and sustainable development. Building upon the foundational principles of the partners experience, this programme expands their vision under the scope of MAPA project to focus on capacity building, education, and active youth participation.

At its core, the programme seeks to equip young individuals — high school and university students — with the knowledge, tools, and critical thinking skills needed to engage meaningfully with biodiversity conservation and environmental protection efforts.

Grounded in the seven principles of Ocean Literacy, the programme emphasizes the interconnectedness of ocean health, human well-being, and climate resilience.

AIM OF PROGRAMME

The overarching aim of this youth-focused capacity-building programme is to enhance participants' understanding of the ecological and societal importance of Marine Protected Areas (MPAs) including MAPAs areas, while fostering critical thinking and interdisciplinary approaches to address complex environmental challenges. It seeks to build young people's competencies in engaging in constructive dialogue with a diverse range of stakeholders, empowering them to take active roles in shaping conservation efforts.

In addition, the programme promotes civic engagement and nurtures youth leadership in the field of marine conservation. By exposing participants to the dynamic intersections of science, policy, and community, it also aims to inspire long-term interest in careers related to marine science, environmental protection, and the blue economy.

KEY ISSUES TO TACKLE

This programme addresses a range of pressing challenges that hinder effective marine conservation and environmental education. Among them are the poor management and insufficient protection of Marine Protected Areas (MPAs), including MAPA areas, as well as a general lack of public awareness regarding the vital ecological and societal roles of marine ecosystems. The programme also responds to the persistent gap in practical science education, particularly the underrepresentation of marine-related topics in school curricula.

Furthermore, there is a critical need to involve youth more actively in community-based conservation initiatives. By addressing these interconnected issues, the programme contributes to a broader

mission of advancing both scientific and ocean literacy as foundational tools for environmental stewardship, informed decision-making, and sustainable development.

BENEFITS FOR PARTICIPANTS

Participants in the programme will gain both foundational and advanced knowledge of marine ecosystems, ocean governance, and contemporary conservation practices. Through a blend of theoretical and hands-on learning, they will engage in practical experiences that integrate scientific understanding with communication strategies and stakeholder engagement. The programme also emphasizes the development of key soft skills, including teamwork, public speaking, and effective community outreach — competencies that are valuable in both academic and professional contexts. Upon completion, participants will receive a certificate that acknowledges their achievements and can support future educational or career opportunities.

PROGRAMME CONTEXT AND STRUCTURE

PROGRAMME CONTEXT

The ocean plays a fundamental role in sustaining life on Earth, regulating climate, and supporting biodiversity. Yet, it remains one of the least understood and most threatened ecosystems. As anthropogenic pressures on marine environments increase, the need for a scientifically literate and ecologically aware generation becomes urgent. Ocean literacy serves as a bridge between science education and civic responsibility. It will introduce students to the concept of the global sustainability goals, with a particular focus on Goal 14: Life Below Water (SDG 14) and Ocean Literacy.

Principles of Ocean Literacy

1. Principle 1 of Ocean Literacy: Earth has one big ocean with many features
2. Principles 2 of Ocean Literacy: The ocean and life in the ocean shape the features of Earth
3. Principle 3 of Ocean Literacy: The ocean has the greatest influence on climate and weather
4. Principle 4 of Ocean Literacy: The ocean makes Earth habitable
5. Principle 5 of Ocean Literacy: The ocean supports a great diversity of life and ecosystems
6. Principle 6 of Ocean Literacy: The ocean and humans are inextricably interconnected
7. Principle 7 of Ocean Literacy: The ocean is largely unexplored

PROGRAMME STRUCTURE

1. Workshop Sessions

These sessions will equip participants with essential knowledge of marine ecosystems, nature conservation, and strategic communication, offering a strong foundation for their active involvement in local environmental initiatives. Through interactive workshops, students will gain a basic understanding of conservation principles and explore practical tools for engaging effectively with local communities and stakeholders. This knowledge will be directly applied during the mobility sessions, where participants will put their communication skills into practice in real-world settings or case study role-play setting.

Main topics being Marine Biodiversity, Ecosystem Benefits and Natural Capital with Marine Protected Areas being as a highlight theme.

2. Mobility Session of Exchange

The mobility session serves as a practical, experiential learning component of the programme and can be organized in one of three ways, depending on local context and logistical possibilities:

- Case study and role-play scenario
- Educational Movies of Best practices (ex. The Good Story by MedReAct)
- Visit to respective MAPA area with engaging local stakeholders
- Hands – on – experience (citizen science experience or laboratory or field work experience)

In the first format, students will participate in a structured case study and role-play exercise, where they will assume the roles of various local stakeholders - such as fishers, policymakers,

conservationists, and community leaders - to simulate decision-making processes related to Marine Protected Areas (MPAs).

In the second format, students will engage directly with real-life stakeholders during field visits to their respective MAPA areas. These on-site experiences will allow participants to observe community-based conservation initiatives, engage in dialogue with local actors, and explore the long-term benefits of effectively managed and strongly protected MPAs.

In the third format, students will take part in a hands-on experience through citizen science activities or laboratory work, or field-based research. This option provides participants with the opportunity to experience and see real data collection, biodiversity monitoring, or environmental sampling alongside scientists or educators. Whether it's testing water quality, identifying marine species, or analysing ecological indicators, this practical approach allows students to directly engage with scientific methods and deepen their understanding of marine ecosystems through active participation and inquiry-based learning

All three formats are designed to reinforce theoretical knowledge through hands-on involvement, deepen students' understanding of the social and ecological dynamics of MPAs, and build their confidence in participating in environmental advocacy and stewardship.

Each round of training will follow a capacity-building model, ensuring that young participants are not only informed but also empowered to take on active roles in advocacy and environmental stewardship with testing the success of the programme through a structured questioner.

PARTICIPANTS

The programme is structured to engage high school and university students within their respective countries, with Croatian participants working in Croatia and Italian participants in Italy. Each country will involve a minimum of five students, forming national groups that will take part in locally implemented activities.

While the programme encourages the exchange of ideas through shared methodologies and aligned objectives, the activities themselves will be conducted within the local context of each country. This structure allows participants to directly connect with their own coastal environments, communities, and conservation challenges, fostering a deep sense of place-based learning and civic responsibility.

PROGRAMME OBJECTIVE

1. Strengthen the capacities of educators and experts in delivering capacity building programmes focused on MAPAs and Ocean Literacy.
2. Develop and disseminate educational content that promotes MAPAs and Ocean Literacy among young people and the wider public.
3. Foster long-term cross-sector collaboration between educators, scientists, communities, and youth.
4. Contribute to the creation of a knowledgeable generation equipped to advocate for marine protection and environmental sustainability.

EXPECTED OUTCOMES

Educational Outcomes

The program's outcomes aim to ensure that participants adopt and apply a scientific view of the world, one that assumes causal relationships exist in nature, that natural phenomena are explainable, and that scientific explanations, theories, and models are subject to change and improvement. The program highlights the exceptional importance of interdisciplinarity and all aspects of STEAM for sustainable development.

The educational outcomes of this program are in sync with Croatian formal educational system from the learning objectives of the subject Biology and the cross-curricular theme of Sustainable Development.

Cognitive Outcomes

- The participant understands the basics of marine ecology and ecosystems, including the predator-prey relationship.
- The participant understands the connection between many people and the ocean, including the role of the ocean as a provider of food, jobs, and opportunities.
- The participant is familiar with the basic premise of climate change and the role of the ocean in regulating our climate.
- The participant understands the present threats to marine ecosystems such as pollution, overfishing, and can recognize and explain the vulnerability of many specific habitats and communities (e.g., coral reefs, coralligenous communities).
- The participant understands the concept of sustainable use of marine resources.

Socio-emotional Outcomes

- The participant can advocate for sustainability in the use of marine resources.
- The participant can present the main issues related to human impacts on oceans (biodiversity loss, acidification, pollution, etc.) and the value of a healthy ocean.
- The participant can influence a group that advocates for unsustainable use of marine resources.
- The participant can reflect on their own eating habits and needs and consider whether they represent an example of sustainable use of marine resources.
- The participant empathizes with people whose livelihoods and survival are affected by changes in fishing practices.

Behavioural Learning Outcomes

- The participant knows how to explore the dependency of their environment on the ocean.
- The participant can engage in a discussion and present arguments about sustainable methods, such as stricter fishing quotas, fishing moratoriums, and fishing bans for endangered species.
- The participant knows how to identify and find ways to purchase marine products from sustainable sources, i.e., eco-friendly products.
- The participant can advocate for the establishment of marine protected areas and no-fishing zones using scientific evidence.

GENERAL DATA ON PROGRAM

Keywords

scientific literacy, ocean, ocean literacy, interdisciplinarity, marine knowledge, global sustainability goals, Decade of the Oceans.

Target Group

Youth (15 – 30 years), high school students, university students.

Educators – Program Implementers

Scientists and experts (employees, volunteers, external experts if needed) with expertise in biology and interdisciplinary fields regarding nature protection.

Ways of Learning

- Learning through discovery and experience – research work, simulation, group projects.
- Learning through teaching – problem-solving.
- Collaborative learning – independent thinking, knowledge exchange, presentation.

Teaching Methods

- Listening and viewing.
- Observation.
- Participation in discussions/debates.
- Group presentations.

- Field experience.

Description of Work

- A frontal approach where interactive lectures by scientists and experts will be held.
- Group work with elements of individual work.
- Individual interaction of students with scientists and experts.
- Interaction between students and marine organisms, as well as scientific research equipment under supervision.

Methods of Monitoring and Verifying Outcomes/Achievements

- Pre- and post-assessment questionnaire.
- Evaluation sheet.

WORKSHOP SESSIONS

THE BASICS: OCEANOGRAPHY – GEOLOGY, PHYSICS AND CHEMISTRY

THE BASICS OCEANOGRAPHY session can be skipped if participants have enough background knowledge.

We name different oceans across the globe, but Earth truly has just one interconnected ocean that is covering about 71% of the Earth's surface. This single, vast system is linked by a global circulation belt, driven by forces such as winds, tides, the Earth's rotation, solar energy, and variations in water density. These surface and deep ocean currents connect basins, forming a flow that redistributes heat and energy. This interconnectedness reflects the unity and complexity of our ocean system, highlighting how local and global phenomena are deeply intertwined.

The ocean has sculpted our planet's physical features over geological time. Its waters continuously shape coastlines, underwater landscapes, and sedimentary formations. Rainwater contributes to this process by breaking down rocks contributing to its salinity. These physical and chemical interactions influence everything from the formation of marine habitats to the structure of entire ecosystems. Ocean plays a major role in geological processes which help shape the Earth's surface.

The ocean is the primary regulator of Earth's climate system. By absorbing and storing solar heat, it drives evaporation, cloud formation, and precipitation, acting as the engine of the water cycle. Ocean currents transport warm and cold water across vast distances, influencing weather patterns and temperatures globally. Sea level changes—caused by tectonic activity, thermal expansion, and melting ice—further demonstrate the ocean's sensitivity and response to climate shifts. This constant

motion and exchange of heat and moisture between the ocean and atmosphere are what make the ocean the most powerful influence on climate and weather patterns on Earth.

Ocean literacy principles:

Principle 1 of Ocean Literacy: Earth has one big ocean with many features

Principles 2 of Ocean Literacy: The ocean and life in the ocean shape the features of Earth

Principle 3 of Ocean Literacy: The ocean has the greatest influence on climate and weather

Objective: Understanding the basic principles and fundamental concepts about the ocean.

Key Concepts: One Ocean, oceanography, physics and chemistry of the sea, currents, maritime transport

Activity Description

Introduction: Story about the 28,000 "yellow rubber ducks" lost in the ocean in 1992 when they fell off a container during a long transoceanic journey.

Lecture: Overview of oceanography basics and the connection between the physics of the sea with the chemistry and biology of the sea, as well as the importance of technology, mathematics, and modelling for new insights. Local context for examples.

Possible Practical Work/Group Work:

- Demonstration exercise – ocean currents model with water (warm and cold), blocks of ice and food colours to symbolize warm heated water and cooled down water.
- Group exercise – researching various coastal habitats in MAPA area exposed to different oceanic influences discussing what inflected them and what is expected to happen in the future considering anthropogenic activities in the area as well.

MARINE BIODIVERSITY – LIFE, HABITABILITY & ECOSYSTEMS

Life as we know it originated in the ocean. The ocean has not only served as the cradle of life on Earth but continues to make the planet habitable. Marine microbes and phytoplankton were among the first organisms to produce oxygen through photosynthesis, ultimately enabling the development of aerobic life. Through biogeochemical processes, the ocean continues to regulate oxygen levels, carbon cycling, and climate, making life possible on Earth.

Beyond this, the ocean supports a vast and complex diversity of life forms, from microscopic plankton to the largest mammal on Earth—the blue whale. Marine ecosystems range from coral reefs and mangroves to deep-sea hydrothermal vents and polar regions, each shaped by environmental factors such as light, pressure, salinity, temperature, and nutrient availability. These ecosystems are interdependent and highly sensitive to both natural processes and human influence. Understanding the role of the ocean in supporting life is crucial to understanding our own place in the Earth system, as well as the need to protect and conserve marine biodiversity in the face of increasing threats.

Ocean Literacy Principles:

Principle 4 of Ocean Literacy: The ocean makes Earth habitable

Principle 5 of Ocean Literacy: The ocean supports a great diversity of life and ecosystems

Objective:

Understanding the ocean as the foundation of life on Earth and the importance of its biodiversity and ecosystems for ecosystem services.

Key Concepts:

Origin of life, oxygen production, marine microbes, marine biodiversity, ecosystems, habitats, marine biology and ecology, conservation, environmental factors, ecosystem services, natural capital

Activity Description:

Introduction: Short story about the origin of life and the role of phytoplankton in Earth's habitability.

Interactive Lecture: Discussion on the role of the ocean in supporting life. Overview of marine biodiversity and examples of marine ecosystems. Human impacts on marine life and biodiversity (e.g., climate change, overfishing, pollution). Local context for examples.

Possible Practical Work/Group Work:

- Demonstration activities: familiarizing participants with research equipment. Marine ID workshop using organisms remains (skeleton, shells, egg casings, …)
- Group work. Microscopic identification and classification of marine organisms from sea samples. Identifying ecosystem services provided by target species and habitats in the MAPA area and identifying threats and pressures with a three-step plan for action.

MOBILITY SESSION OF EXCHANGE

Human life is deeply entwined with the ocean, not just through the food and economic resources it provides, but also in the very fabric of our health, culture, and survival. Marine ecosystems deliver a broad range of services—from climate regulation and water purification to sources of medicine and spiritual value. Sea-derived compounds are now helping researchers fight disease and understand human biology, while traditional coastal communities continue to depend on marine biodiversity for livelihoods and identity.

Yet, these intricate relationships are often invisible or taken for granted. The ocean underpins our economies, sustains fisheries, attracts tourism, and plays a critical role in climate stability—but its degradation threatens these very systems. Recognizing the ocean as a foundation for both ecological balance and human well-being is essential for fostering responsible decision-making, especially in Marine Protected Areas (MPAs). Through this lens, students are invited to explore how human actions ripple through marine environments—and how empowered stewardship can help secure a sustainable future for all and why is it important to continue to research the Ocean.

Ocean Literacy Principles:

Principle 6 of Ocean Literacy: The ocean and humans are inextricably interconnected

Principle 7 of Ocean Literacy: The ocean is largely unexplored

Objective:

Understanding the deep interconnection between humans and the ocean, and the importance of interdisciplinary exploration and scientific engagement in protecting marine environments and sustaining the benefits they provide.

Key Concepts:

Human-ocean connection, ecosystem services, marine resources, sustainability, health and medicine, stakeholder engagement, interdisciplinary science, ocean exploration, technology, citizen science, data collection, marine governance, scientific literacy, local ecological knowledge, co-management.

Stakeholders to consider:

- Local fishing communities
- Coastal municipalities
- Conservation NGOs
- Scientific advisors or marine biologists
- Marine research institutes or university labs
- Tourism associations
- Eco-tour guides
- Diving centres

FORMAT OPTIONS

Format 1: Case Study & Role-Play Scenario

Activity Description:

- Students are assigned stakeholder roles (e.g., fishers, local government, indigenous leaders, conservation NGOs, scientists, tourism operators).
- Engage in a **simulated stakeholder meeting** about creating or expanding an MPA.
- Discuss ecological, economic, and cultural impacts.
- Use real-world data and case study materials from a selected coastal region.

Learning Outcome: Understand the complexity of marine governance, explore social justice, negotiation, and interdisciplinary collaboration.

Format 2: Field Visit to a Local MAPA Area or MAPA stakeholders

Activity Description:

- Students visit, guided by local stakeholders.
- Guided tour of habitats
- Observing conservation efforts
- Dialogue with stakeholders, MPA managers, park rangers, or community representatives

Learning Outcome: Firsthand understanding of the ecological and social significance of MPAs, the challenges of enforcement, and the role of community engagement.

Format 3: Citizen Science or Hands-On Scientific Research

Activity Description: Students participate in citizen science or research-focused fieldwork, using defined protocols that contribute to real scientific databases.

Examples of Activities:

- Biodiversity surveys - Protocol: Reef Check or iNaturalist marine modules
- Marine litter monitoring - Protocol: MAC Emerso protocol, Clean Swell

Learning Outcome: Understand marine science methods, data analysis, and the value of citizen science for MPAs and unexplored regions of the ocean.

ASSESSMENT & REFLECTION

- At the beginning and at the end of the capacity building programme, students fill out a structured questionnaire assessing: Knowledge, Attitude, Behaviour
- Joint reflection exercise with questions: What role can /play in marine conservation? And What actions can we take locally, nationally, or globally?