

MARINE SCIENCE COMMUNICATION AND OCEAN LITERACY

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Part 1

MARINE SCIENCE COMMUNICATION

- ❑ THE NEED FOR MARINE SCIENCE COMMUNICATION
- ❑ STRATEGIES FOR EFFECTIVE MARINE SCIENCE COMMUNICATION
- ❑ STAKEHOLDER-TAILORED COMMUNICATION TOOLS
- ❑ COMMUNICATING BLACK SEA MARINE SCIENCE

Part 2

OCEAN LITERACY

- ❑ INTRODUCTION TO OCEAN LITERACY
- ❑ THE 7 ESSENTIAL PRINCIPLES OF OL
- ❑ WHAT SCIENTISTS CAN DO FOR OL SOCIETIES

Part 3

FROM KNOWLEDGE TO ACTION: PRACTICES FOR CREATING BLACK SEA LITERATE SOCIETIES

- ❑ OCEAN LITERACY TO BLACK SEA LITERACY
- ❑ EDUCATION PRACTICES THAT WORK
- ❑ OTHER ENGAGING TOOLS

1. MARINE SCIENCE COMMUNICATION

Why do we need to communicate marine science?

- ✓ To build trust between scientists, stakeholders, and the public.
- ✓ To assess the scientific basis for effective communication about science;
- ✓ To foster an institutional commitment to evidence-based communication science.
- ✓ To raise awareness of marine threats and solutions.
- ✓ To inform policy decisions with accessible, evidence-based insights.
- ✓ To encourage behavior change and civic engagement.

Why it's important?

- ✓ Oceans are facing pressures such as overfishing, pollution, and climate change.
- ✓ Scientific research is essential, but ineffective unless understood and acted upon.
- ✓ Communication bridges the gap between science, society, and policy.

THE NEED FOR MARINE SCIENCE COMMUNICATION

Challenges in marine science communication

Complexity of the Science: Marine systems are complex, full of data, thus hard to explain without oversimplifying.

Jargon & Technical Language: Scientific terms can alienate non-experts, making research inaccessible.

Mismatched Timelines: Science takes time — but policy decisions & media demand quick answers.

Public Perception & Misinformation: Low ocean literacy & spread of misinformation hinder understanding.

Media & Message Fatigue: A constant stream of content & negative messages can disengage audiences.

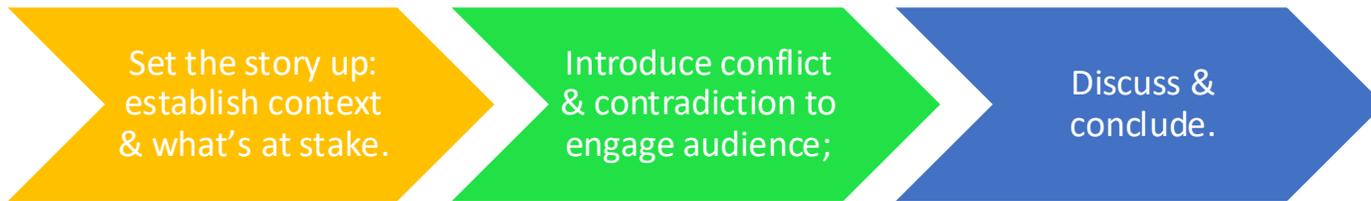
Stakeholder Diversity: Multiple audiences (policymakers, fishers, citizens) require tailored messaging.

Limited Training & Support: Many researchers lack communication skills or incentives to engage.

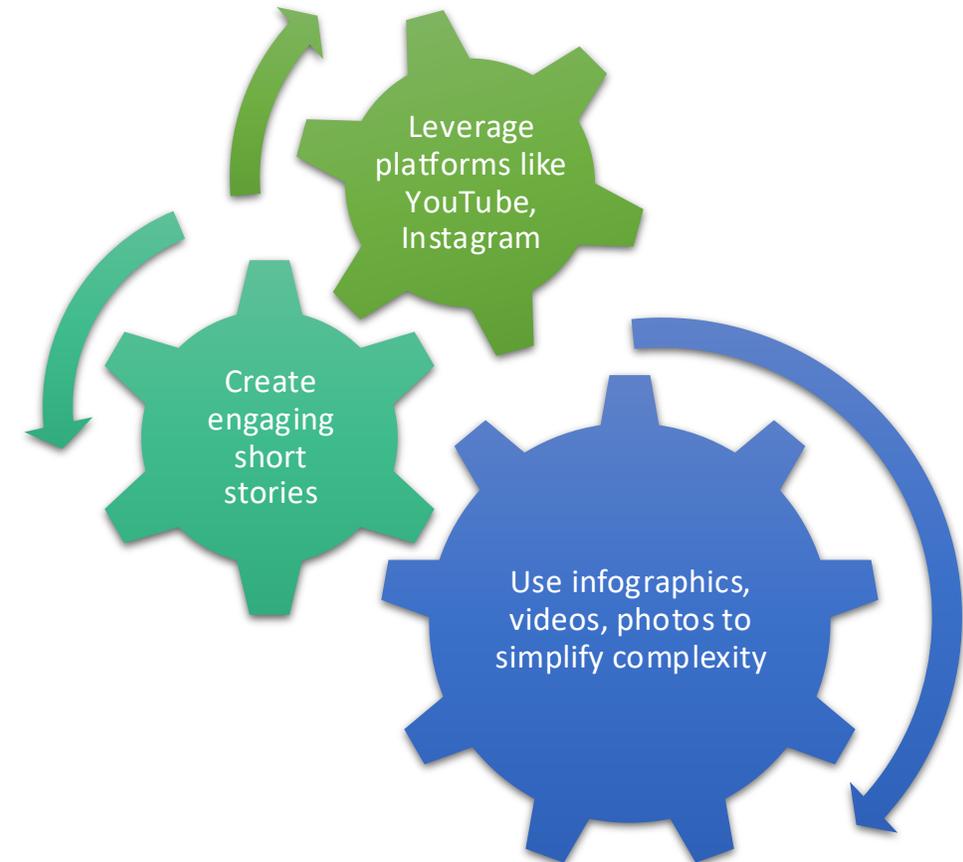
Good Practices:

- Be transparent — explain what is known, unknown, and why.
- Use analogies or visuals to make complexity relatable.
- Avoid false certainty — it can damage credibility later.
- Frame uncertainty as part of the scientific process, not as failure.
- Tailor explanations to different audiences' needs and values.

- Storytelling is increasingly important in today's crowded, digital world.
- A fun and engaging way to communicate what you do
- A good technique is as follows:



👉 Tip: whenever possible in a post, replace the word 'and' with a '**but**' or '**therefore**'. In doing so, **stories with conflicts and conclusions** are built, ensuring greater audience reach and engagement.



Know Your Audience



Frame Your Message

Tailor message to specific groups: policymakers, students, fishers, media.

Use **appropriate language** and examples

Consider **values, beliefs,** and **knowledge** levels

Narratives:
Tell stories, not just facts

Metaphors:
e.g. 'Ocean as the heartbeat of the planet'

Emotion:
Inspire concern, hope & responsibility

Promote **urgency**, not panic

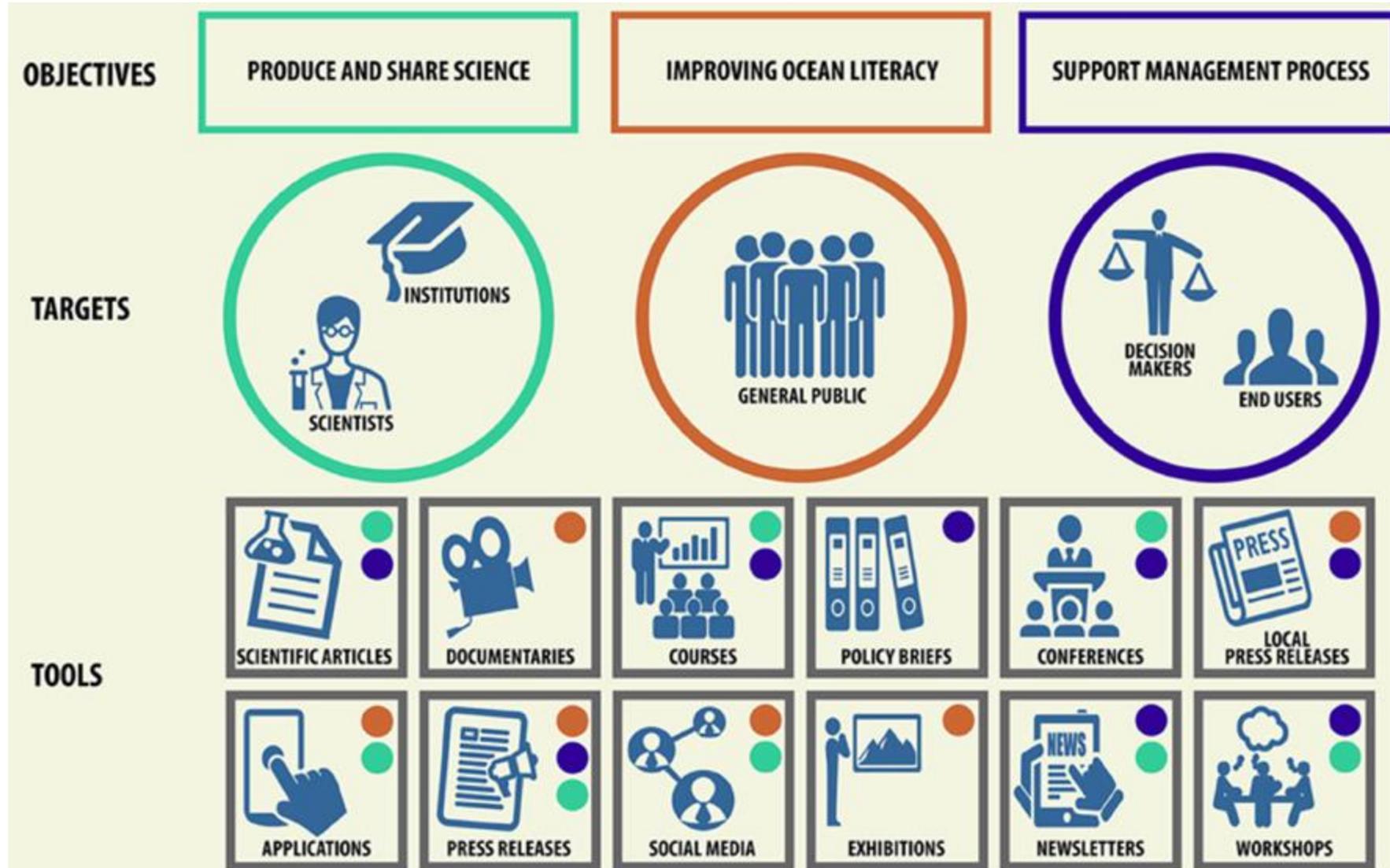


- Social media: real-time, broad reach, 24hr operation!
- Country/region, societal and cultural context must be considered.
- Data on social media usage, internet availability etc. important to consider as it can work advantageously.
- **Cultural & social context** to be explored (smartphone/computer usage etc.).
- Consider alternative methods of engagement for stakeholders who do not use social media.

Suggested strategies



STAKEHOLDER-TAILORED COMMUNICATION TOOLS



COMMUNICATING BLACK SEA MARINE SCIENCE

360 Degree Communication under BRIDGE-BS

WEBSITE



SOCIAL MEDIA



SCIENTIFIC ARTICLES



AWARENESS RAISING ACTIVITIES



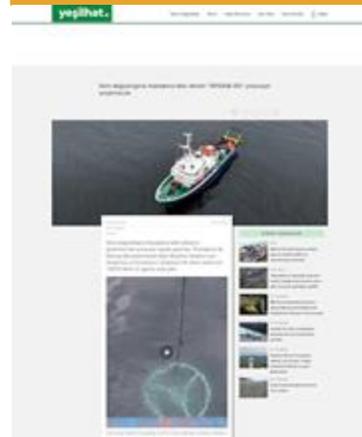
TRAININGS



EVENTS



MASS MEDIA



VISUALS - PRINTED MATERIALS



SCIENCE-POLICY DOCUMENTS



360 Degree Communication

- A fully integrated, multi-channel approach to deliver consistent and engaging messages across all relevant touchpoints — ensuring the audience receives and interacts with information from every possible direction.

How so?

The **BRIDGE-BS project** practices 360-degree communication by:

- Combining **scientific outputs** with **storytelling** through *videos, social media reels, and articles*.
- Engaging **different audiences** — scientists, policymakers, youth, and the public — through *events, webinars, and networks* like the *Black Sea Young Ambassadors*.
- Using **digital tools** (website, social media), **on-site activities** (beach clean-ups, festivals), and **educational content** (summer schools, MOOC) to communicate the same core vision:

“A sustainable, resilient, and well-understood Black Sea.”



Videos simplify complex science through storytelling, visuals, and expert voices.



What is the aim?

To turn viewers into active contributors by monitoring, spreading awareness, or supporting policy.



Habitat Destruction



Climate Change



Overfishing



Invasive species



Mineral extraction



BLACK SEA YOUNG AMBASSADORS



SOCIAL MEDIA CAMPAIGNS



AWARENESS RAISING CAMPAIGNS



Who are they?

- Black Sea Young Ambassadors: Flagship youth network engaging in communication, advocacy, and more.

EVENTS



WORKSHOPS



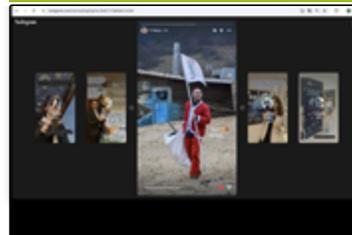
The Role of Youth in SciComm?

- Fresh Perspectives & Relatability: Bridge between science & society
- Amplified Outreach & Visibility: Youth-led channels (Instagram reels, webinars) and peer outreach
- Long-term Behaviour Change and Engagement: Supporting sustained literacy and actions
- Policy and Innovation Linkage: Supports linking SciComm to policy, innovation and sustainability

SCIENTIFIC ARTICLES



REELS



SCIENCE – POLICY ENGAGEMENT



How to do?

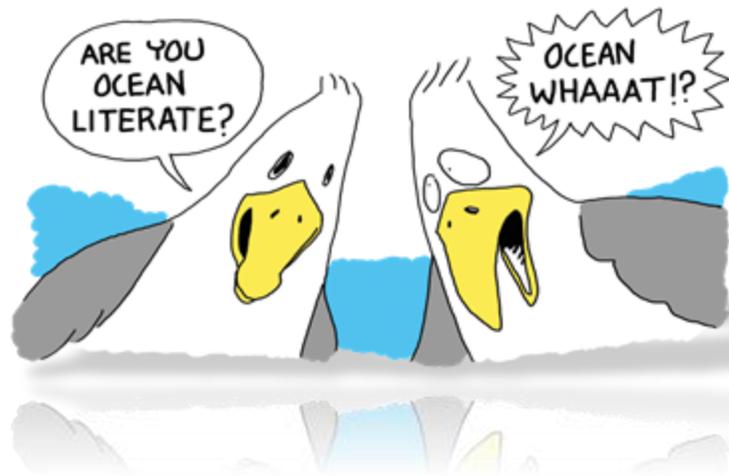
- Stakeholder-tailored comm, including awareness-raising campaigns, online and social media outreach, and active participation in events from public to high-level, publishing scientific articles and many more.

2. OCEAN LITERACY FOUNDATION FOR MARINE COMMUNICATION

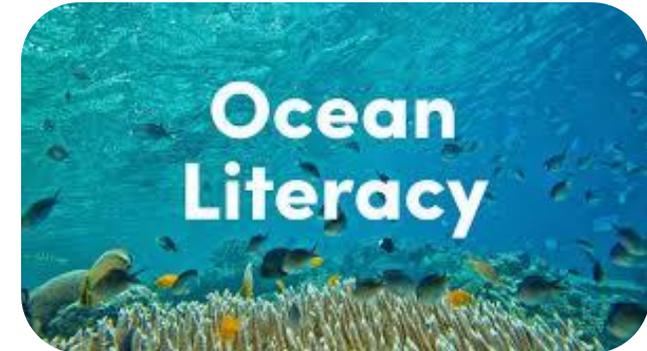
INTRODUCTION TO OCEAN LITERACY

What do we mean by Ocean Literacy?

The **definition of Ocean Literacy**: An understanding of the Ocean's influence on you and your influence on the ocean.



Ocean Literacy Leaflet, Sea Change Project



An Ocean-Literate person:

- ✓ Understands the importance of the ocean to humankind
- ✓ Can communicate about it in a meaningful way
- ✓ Is able to make informed and responsible decisions regarding the ocean and its resources

OCEAN LITERACY

THE ESSENTIAL PRINCIPLES OF OCEAN LITERACY

1 The Earth has **one big ocean** with many features.



2 The ocean and life in the ocean **shape the features** of Earth.



3 The ocean is a major influence **on weather and climate.**



4 The ocean made Earth **habitable.**



5 The ocean supports a great **diversity of life** and ecosystems.



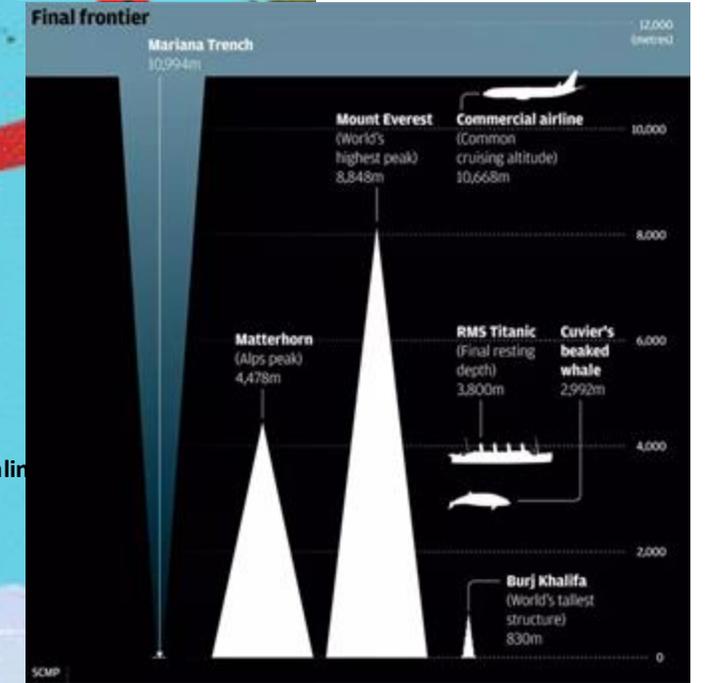
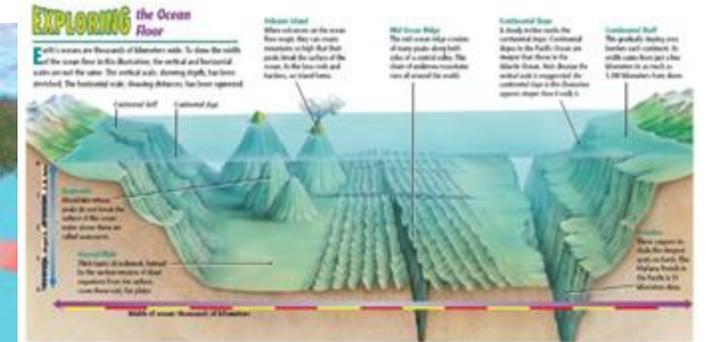
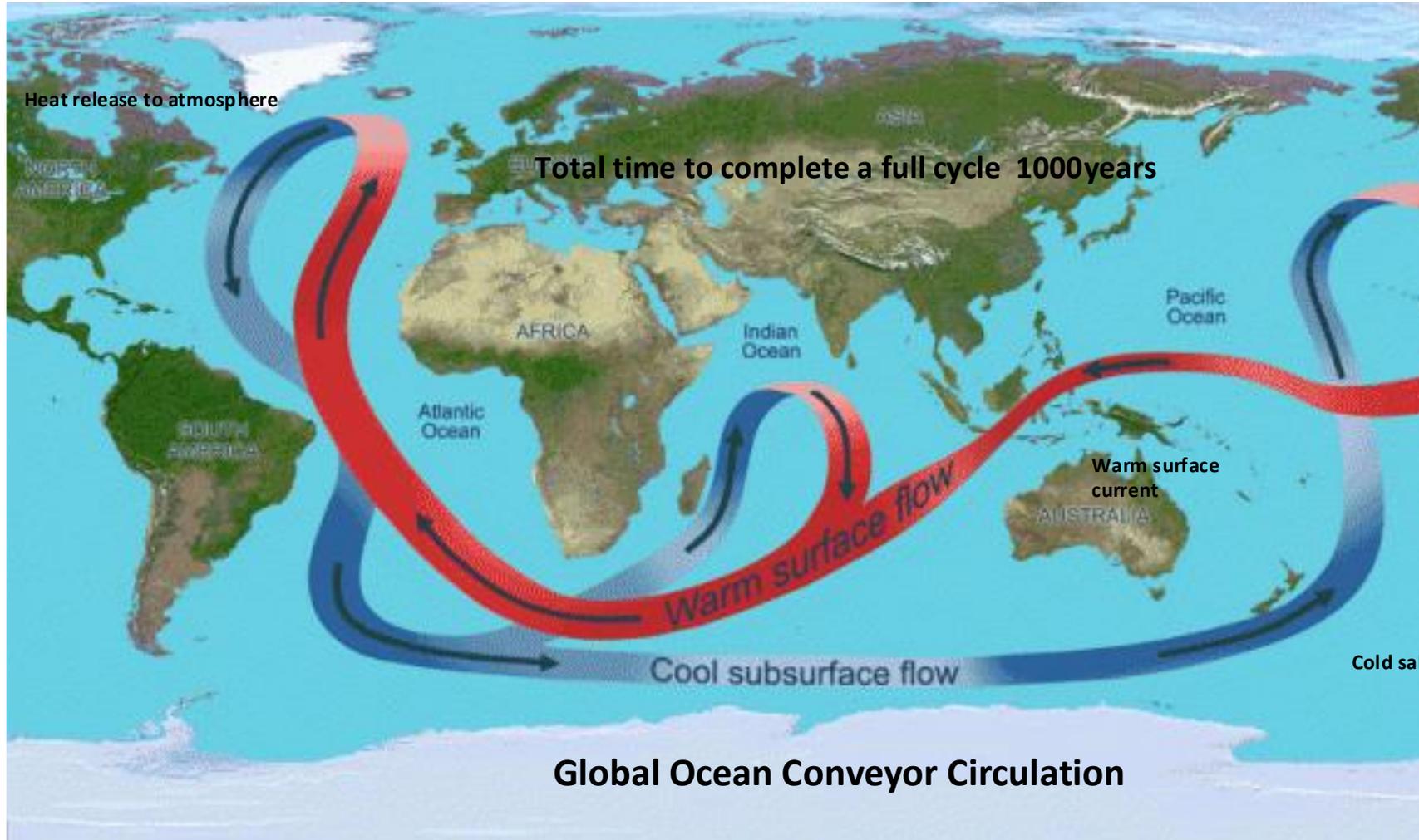
6 The ocean and humans are **inextricably interconnected.**



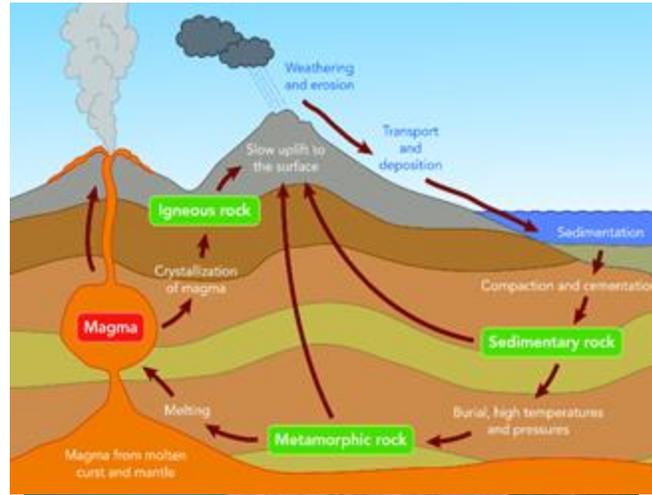
7 The ocean is largely **unexplored.**



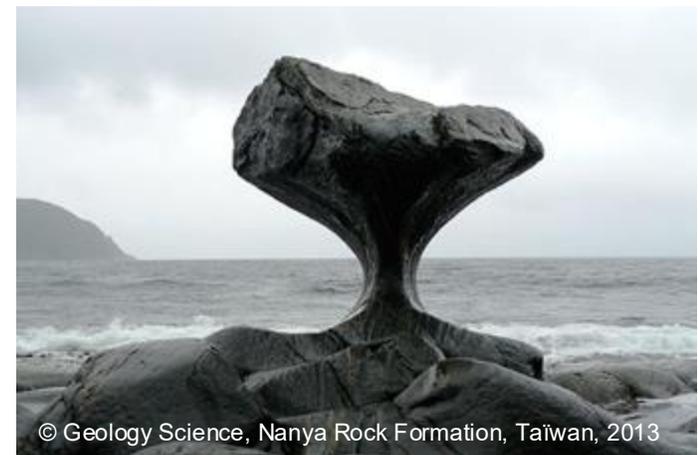
1. The Earth has One big ocean with many features



Did you know the origin of Vesuvius Is oceanic?



© 2014 International Union for Conservation of Nature and Natural Resources





Hawaiian Seaweed Makes Cows 90% Less Gassy



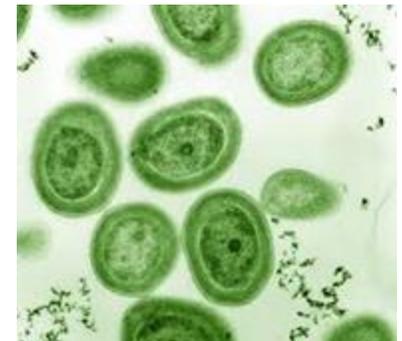


**“Great job also today guys:
We pumped carbon and produced
50%-80% of oxygen in our
atmosphere!”**



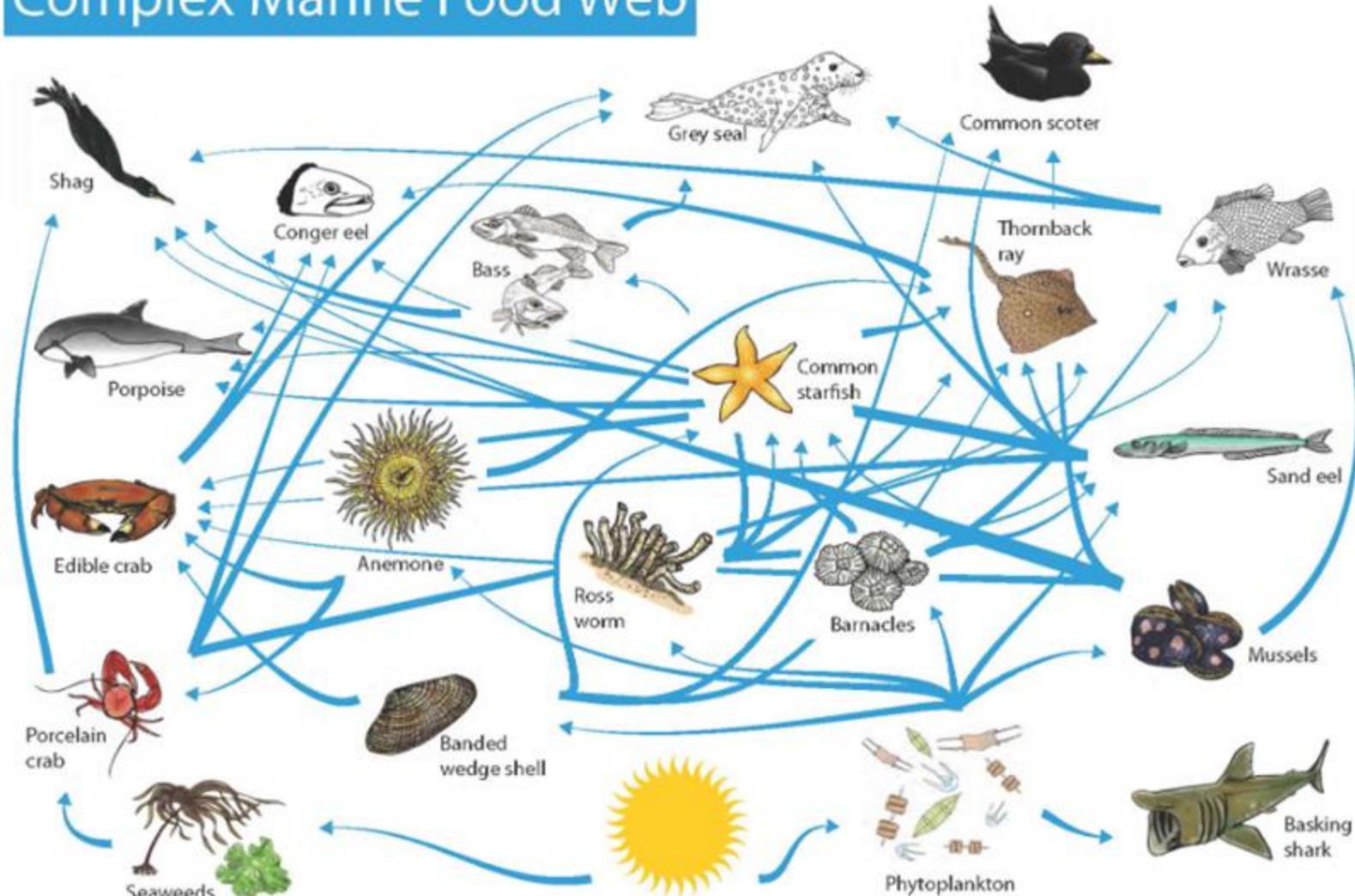
Plankton

**“Hey, I might be
the smallest
photosynthetic
organism on Earth but I
provide the oxygen for
one in every five
breaths you humans
take!”**



Prochlorococcus

Complex Marine Food Web



6. The ocean and humans are inextricably interconnected



Anti-cancer sponges



Anti-cancer Bluebell tunicates

© Markus Muttenthaler

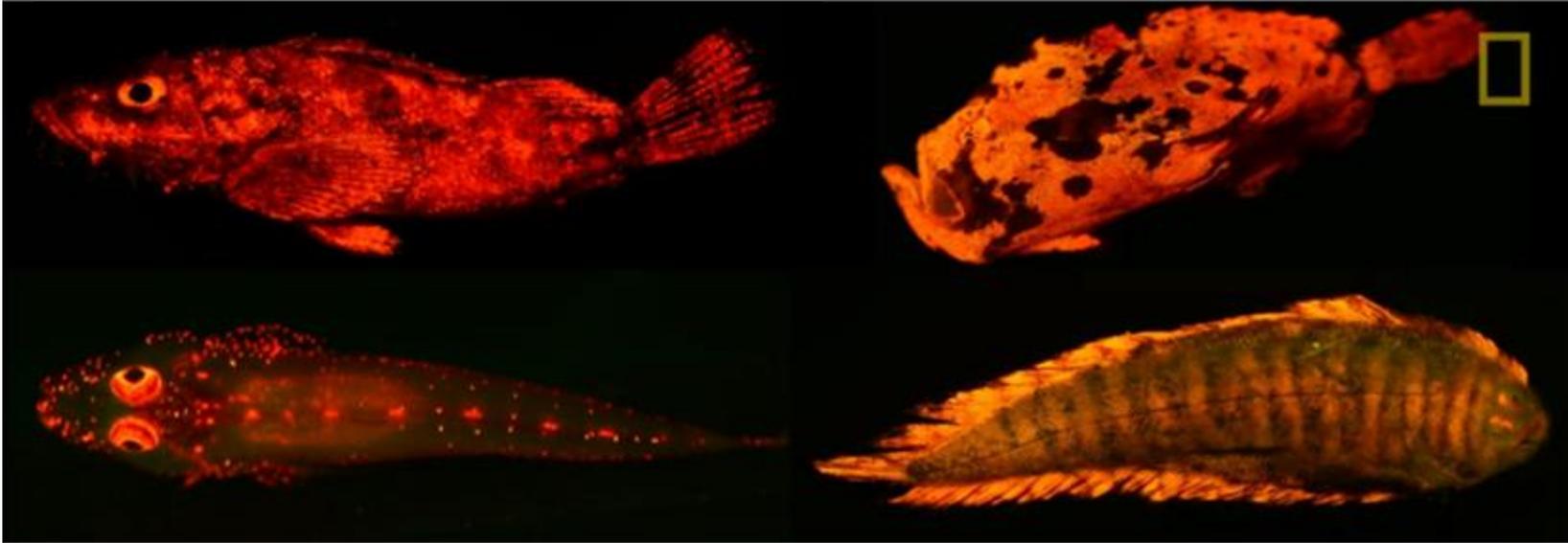


Pain relief from Cone snail

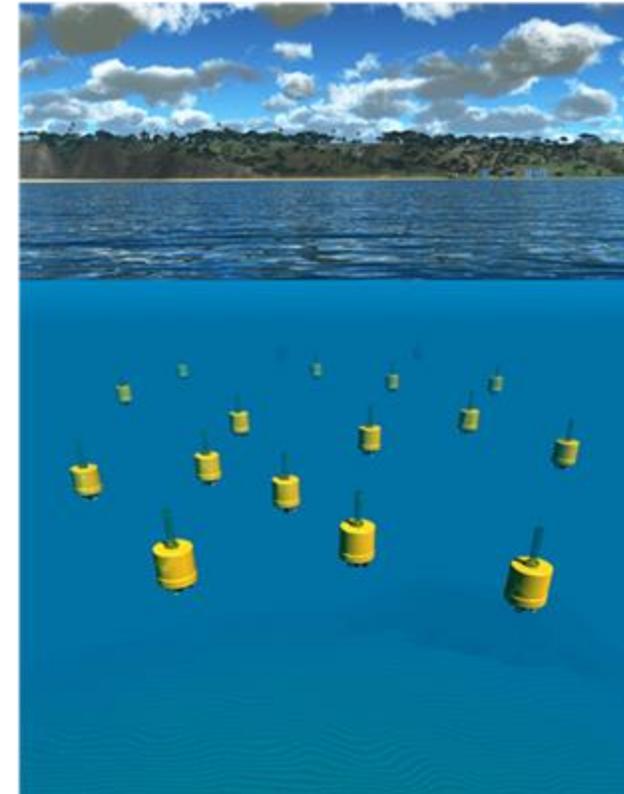
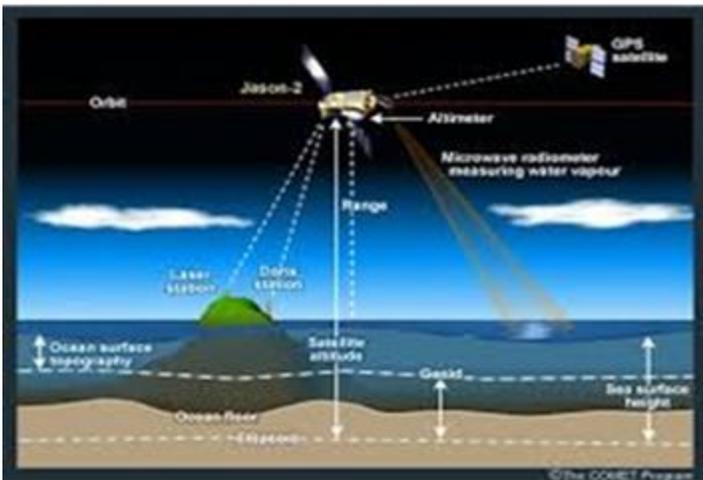




scientists have built a camera that approximates how sharks see each other in the big depths, revealing how they glow through biofluorescence



grapefruit-sized devices act like plankton measuring water temperature





OCEAN LITERACY

What could scientists do for Ocean-Literate societies?

Scientists can contribute to ocean literacy in a number of ways:

- 1. Conducting research and gathering data** on the ocean and its various processes and systems. This helps to increase our understanding of the ocean and its role in the earth's climate and ecosystem.
- 2. Sharing their research findings with the public** through scientific papers, talks, and other forms of communication. This can help to increase public awareness and understanding of the ocean and its importance.
- 3. Working with policymakers and decision-makers** to help inform policy and decision-making that affects the ocean.
- 4. Participating in educational outreach** and working with educators to develop educational materials and programs that promote ocean literacy.
- 5. Engaging with the public through social media and other platforms** to share information about the ocean and its importance.

Overall, scientists can play a crucial role in promoting ocean literacy by sharing their expertise and knowledge about the ocean and its significance with the public.

3. FROM KNOWLEDGE TO ACTION: PRACTICES FOR CREATING BLACK SEA LITERATE SOCIETIES

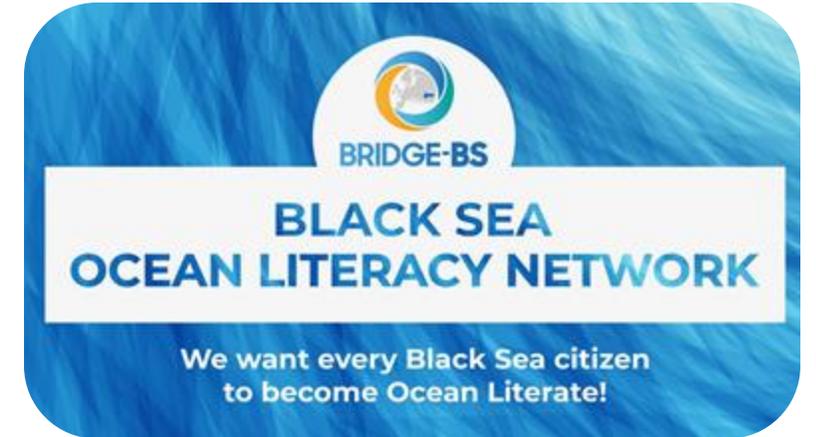


Functions as a knowledge hub for anyone curious about the Black Sea



Hosts an [Online Directory of Ocean Literacy](#)

[Initiative](#)



[Learn more and join us today](#)

Now, let's discover practical strategies we have been implemented the Black Sea region.

3 main actors in Black Sea Literacy:

- ❑ The topic (Black Sea ecosystems)
- ❑ The audience (coastal communities)
- ❑ Communication tools (examples from BRIDGE-BS project)



WHY BLACK SEA LITERACY, NOT JUST OCEAN LITERACY?

Black Sea has its own peculiarities in terms of oceanography and biodiversity as well as threats.



BSL projects and initiatives identified by
BRIDGE-BS

Links are also available in your course notes:

<https://bridgeblacksea.org/index.php/ocean-literacy-network/>

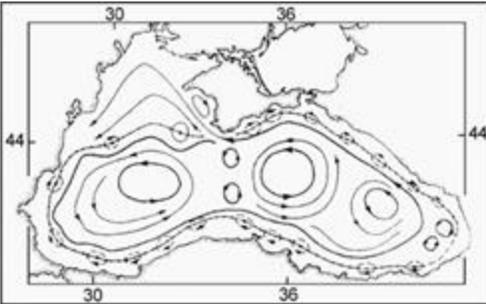
<https://www.linkedin.com/showcase/emsea-black-sea/about/>



BRIDGE-BS

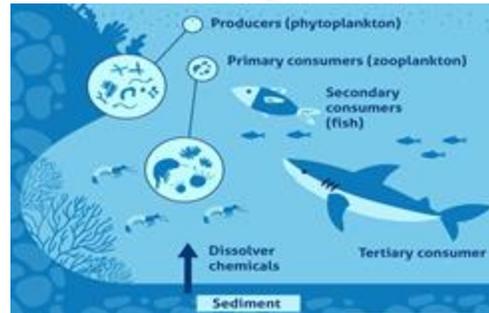
FROM OCEAN LITERACY TO BLACK SEA LITERACY

Peculiarities of the Black Sea



Black Sea basin

A closed system with high dependency on “fresh” current from Mediterranean Sea.



BS biodiversity

Its uniqueness: low biodiversity, high productivity, notable invasive species.



BS service dynamics

Its marine life stocks, economy, tourism



Threats

Fisheries, habitat destruction, pollution, invasive alien species, political conflicts

COASTAL COMMUNITIES OF THE BLACK SEA

Know your audience!

Black Sea coastal communities:

- ❑ Heavily rely on fisheries
- ❑ Have diverse cultures
- ❑ Have sea-immersed lives (cuisine, weather, transportation, accessibility, climate, etc.)



EDUCATION AND HANDS-ON PRACTICES

Education is the best way to integrate behavioural change into society; either through formal education, informal education or citizen participation efforts.

Some examples carried out within BRIDGE-BS project

- ❑ Beach-clean up activities with school children
- ❑ Art installations with marine litter
- ❑ Lectures in schools as well as Youth Centers
- ❑ Dolphin watch cruises for students with experts
- ❑ Scientific diving course for young marine researchers
- ❑ Summer schools with university students
- ❑ [Blue Career Centre](#)
- ❑ This MOOC, and other formal & informal education efforts.





BRIDGE-BS Scientific Diving Course

The event provided hands-on experiences for young marine researchers; in-site research with real case studies, learning through both theoretically and experimentally.

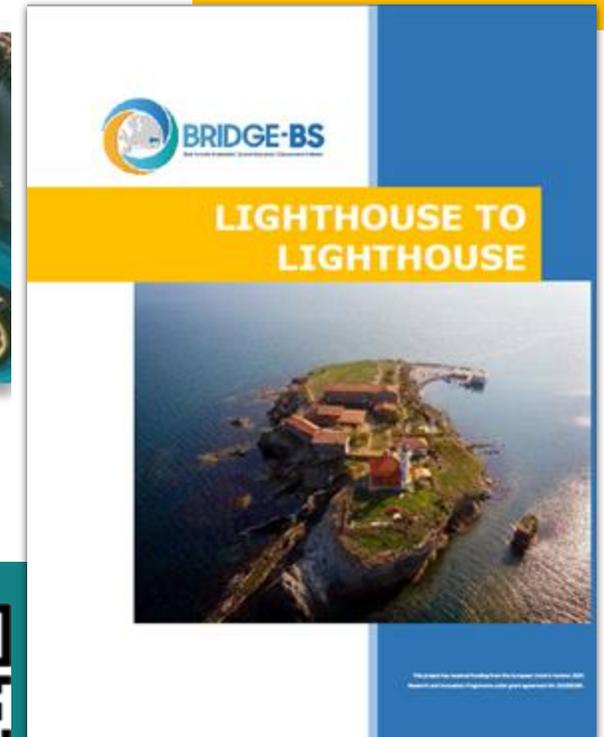


HOW ABOUT CITIZEN ENGAGEMENT?

- Great way to embrace the knowledge and adapt new behaviours
- Specific topics should be selected to attract citizens and to effectively deliver messages.

Examples from the BRIDGE-BS Project:

- Local festivals,
- Seminars and workshops,
- Responsible Consumption Campaign and From Lighthouse to Lighthouse Campaigns
- Local and regional activities organised by Black Sea Young Ambassadors
- Experience the Black Sea



HOW CAN YOUTH CONTRIBUTE TO BLACK SEA LITERACY?

- translate scientific knowledge into accessible communication for schools, communities, and more — a key element of ocean literacy.
- work as liaisons between researchers and the public, using storytelling, visual media, and outreach campaigns to explain issues like marine pollution, climate impacts, and sustainable blue economy.

Some examples:

- ❑ Local and basin-wide ocean literacy campaigns, such as clean-ups with the general public, hands-on activities with kids, and workshops with blue economy stakeholders
- ❑ “Visual Storytelling of the Black Sea: Different Shores, Different Reflections, and One Sea” through photography and media



PHOTO CONTEST
VISUAL STORYTELLING
OF THE BLACK SEA

BLACK SEA AMBASSADORS

DIFFERENT SHORES
DIFFERENT REFLECTIONS
AND ONE SEA

APPLY HERE!

WHO ► PHOTOGRAPHERS FROM ALL AGES CAN ATTEND
WHEN ► APPLY UNTIL 6 SEPTEMBER 2022 AT MIDNIGHT (GMT+3)
HOW ► ENTRIES SHOULD BE SUBMITTED TO THE BLACK SEA CONNECT WEBSITE

SURPRISE PRIZES

MARINE SCIENCE COMMUNICATION AND OCEAN LITERACY

Take-Home Message

To achieve a **sustainable and resilient Black Sea**, science must be **communicated effectively, understood widely, internalized and translated into collective action**. Building **Black Sea literate societies** means empowering people, from scientists to citizens, to understand, care for, and act on behalf of the marine environment.

Effective communication is key to marine conservation.

- Marine science communication bridges the gap between research, policy, and society.
- Clear, transparent, and audience-tailored communication builds trust and promotes evidence-based decisions.
- Using visuals, storytelling, and digital platforms increases engagement and impact.

Ocean literacy empowers informed and responsible action

- Understanding the ocean's role in Earth's systems and human life fosters stewardship.
- Scientists play a central role by sharing knowledge, engaging with the public, and influencing policy.
- Ocean literacy is not only about knowledge but also about shaping attitudes and behaviours toward sustainability.

Black Sea Literacy translates global principles into regional action.

- The Black Sea's unique ecological and socio-political context requires tailored literacy approaches.
- Engaging local communities, youth, and stakeholders through education, citizen science, and participatory initiatives strengthens connection to the sea.
- BRIDGE-BS initiatives, such as youth ambassador programs, clean-ups, festivals, and educational activities, turn awareness into tangible, local action.



THANK YOU!



STAY TUNED!

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