

GES 4 SEAS



PREFACE

This book is part of the Horizon Europe project, **GES4SEAS**, which was funded to inform and guide marine governance in minimizing human pressures and their impacts on marine biodiversity and ecosystem functioning, while maintaining the sustainable delivery of ecosystem services.

GES4SEAS has developed tools to better assess how human activities and climate change affect marine biodiversity, ecosystems, and the services they provide. Through these innovative tools and knowledge, the project will support policy- and decision-makers in making better decisions for a healthier ocean.

The book aims to increase our understanding on how the ocean influence human societies and how we influence the ocean with our actions, revealing the high complexity these relationships. The story begins with the idea of Healthy Seas for Healthy Human Societies, highlighting how an healthy ocean underpins our own well-being (Comic 1). It then explains that this ocean health can be compromised by the multiple Pressures in the Marine Environment: 1 + 1 Is Not Always 2, as pressures accumulate and interact in complex ways (Comics 2 and 3). Because of this, we must ensure that, despite these pressures, the marine environment remains in good condition, introducing the concept of Good Environmental Status and How It Can Affect Your Health and Life (Comic 4). When ecosystems approach or cross Tipping Points: Why It Is Best Not to Reach Them (Comic 5), their stability—and ours—can be put at risk. Managing pressures, avoiding tipping points, and safeguarding environmental status requires an Ecosystem Based Management: Managing the Whole or the Hole approach

(Comics 6 and 7). Finally, the book reflects on how the GES4SEAS project, through its advances and developed tools for a better marine management and recovery, offers reasons for Ocean Optimism: Hope for the Ocean and Societies (Comics 8, 9 and 10). To bring this comic book to life, real examples from different European regional seas, have been selected to illustrate these concepts and tell this story.

As part of this effort, the project has directly engaged with young people to promote ocean literacy, aiming to encourage more sustainable behaviours toward the ocean. Scientists from the GES4SEAS consortium wrote a series of short comics on important marine topics—such as biodiversity, pressures, and management—that were then reviewed by children from different age groups and schools across Europe (Denmark, England, Finland, Greece, Ireland, Portugal, Romania, Spain). Guided by their teachers, the students helped to improve the educational content and layout of the comics to ensure the important messages from GES4SEAS are communicated well. Each comic focuses on a different topic and are now compiled into this book, available in multiple languages (Basque, Catalan, Danish, English, Finish, French, German, Low German, Greek, Italian, Portuguese, Romanian, Slovenian, Spanish, and Turkish). In addition, the book is also available with blank spaces for completion.

The aim is for this book to serve not only as entertainment but also as an educational resource. Teachers can read it in advance and draw inspiration for explaining key concepts to their students, who can then later create either their own comic or complete the blank version with missing panels, creating their own interpretation of the stories. The official version should be shared with students at the end of the activity.

We hope it inspires you to explore, learn and protect our seas!



Acknowledgments

We thank the students and teachers involved in this activity for their cooperation and contribution to this initiative:

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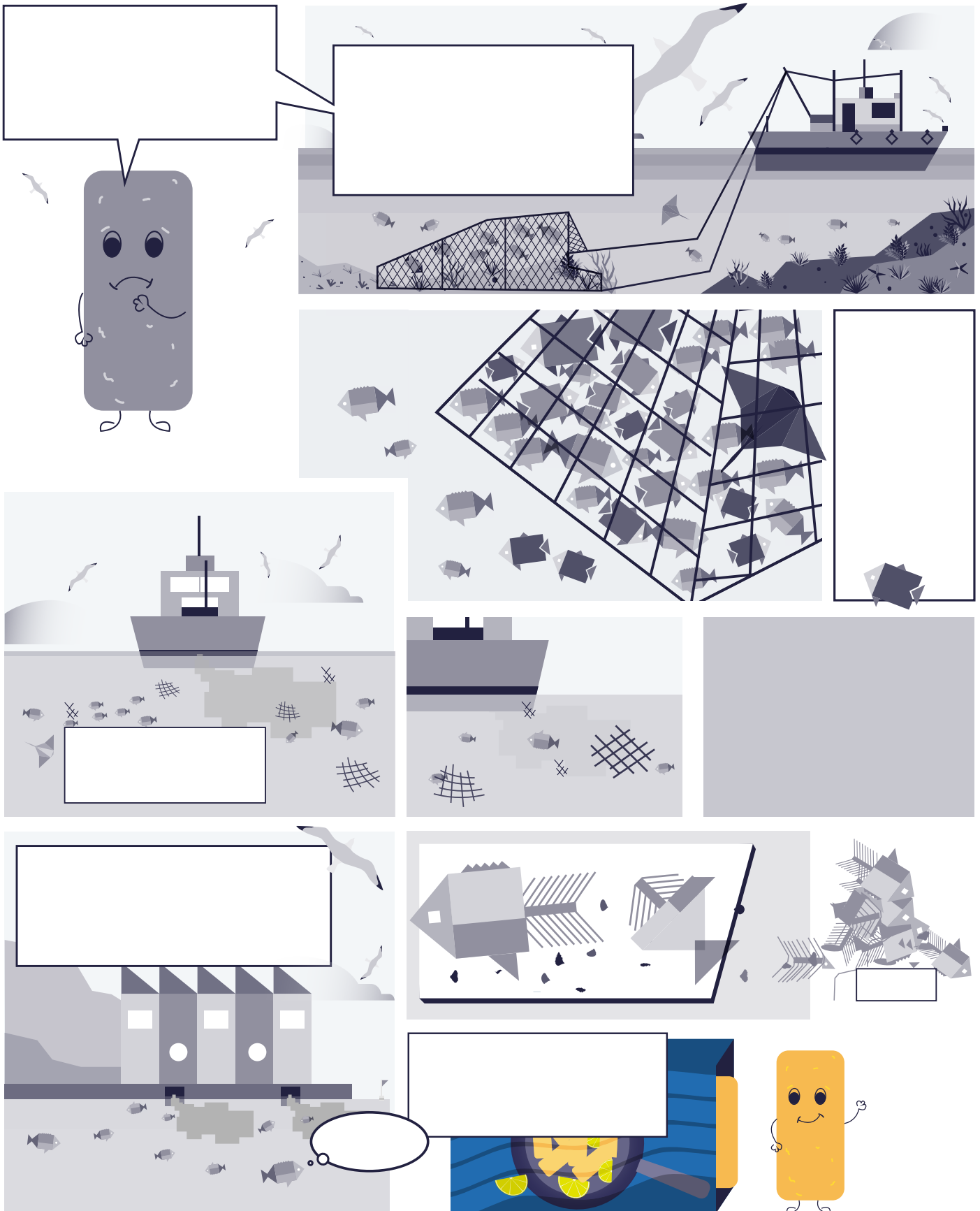
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**WHERE DOES YOUR FISH
FINGER COME FROM?**



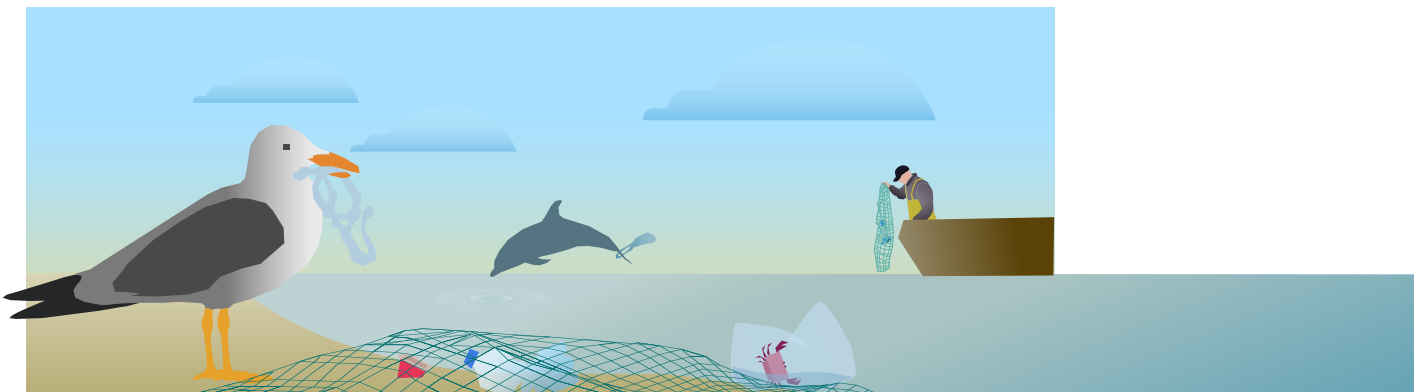
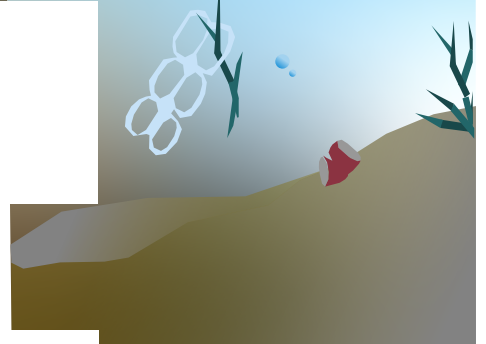
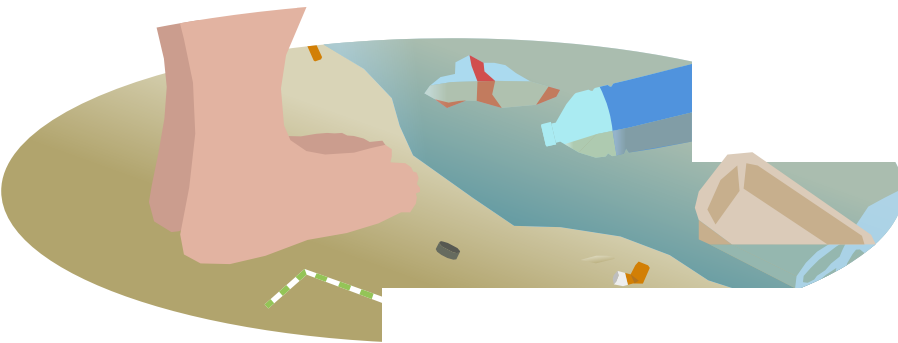
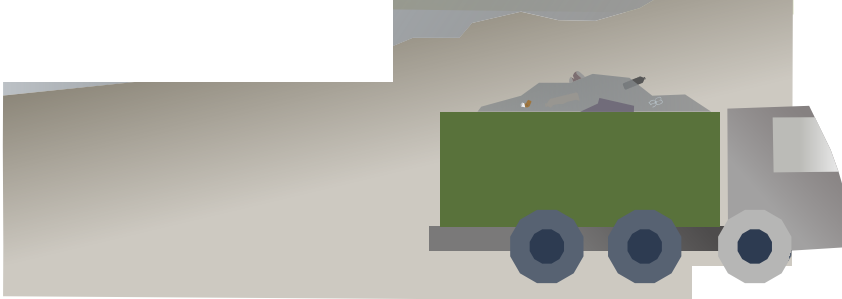
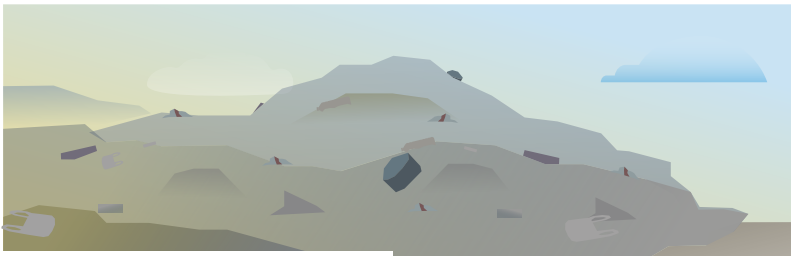


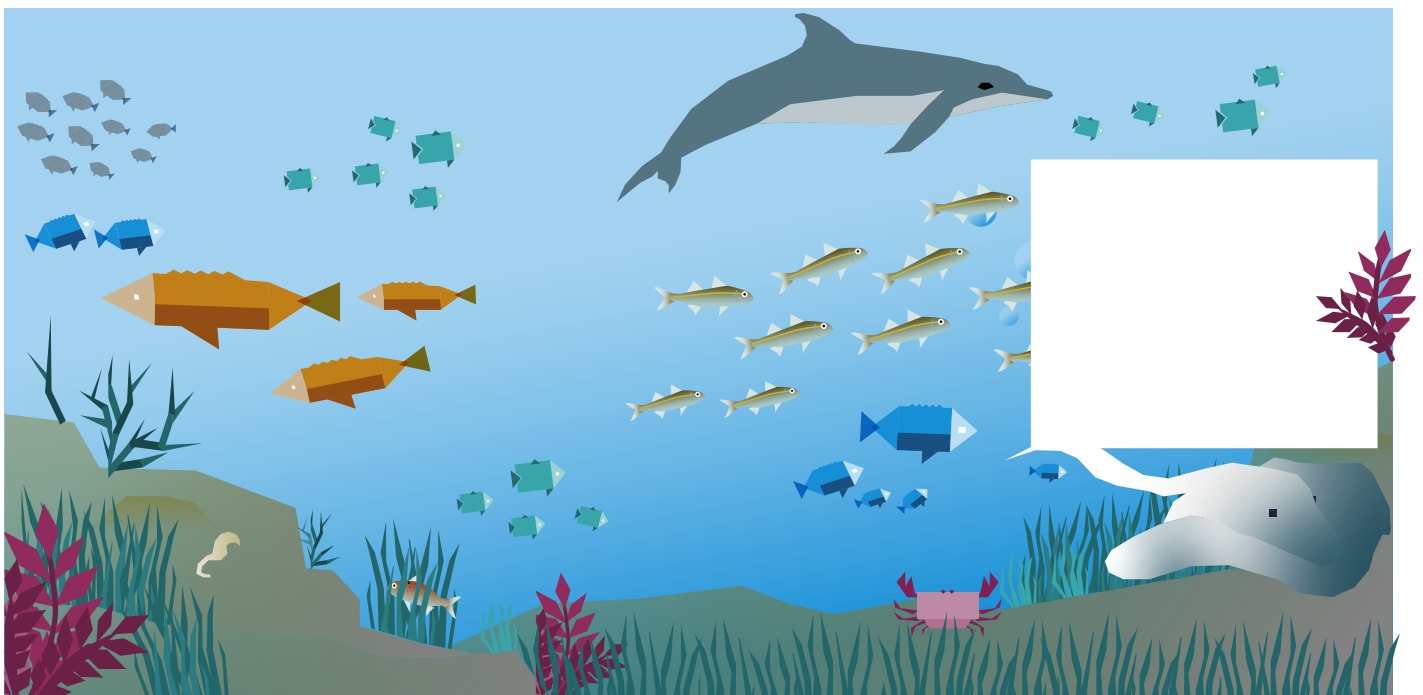
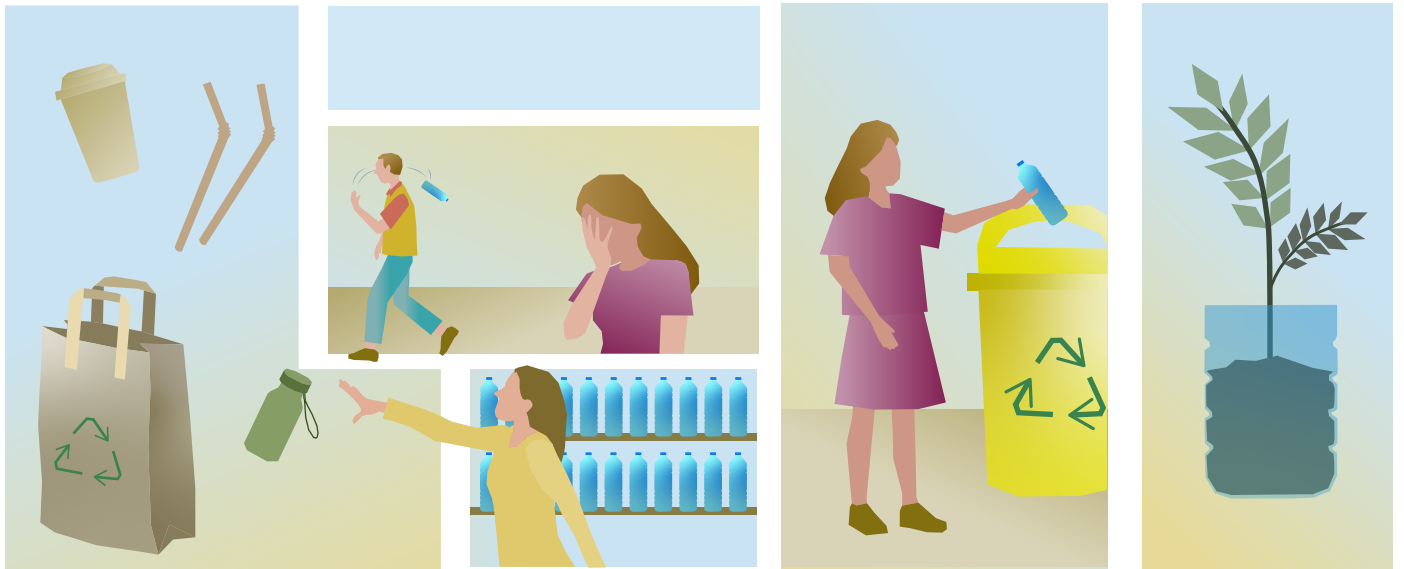


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PLASTICS IN OUR SEA: A GROWING THREAT TO MARINE LIFE!





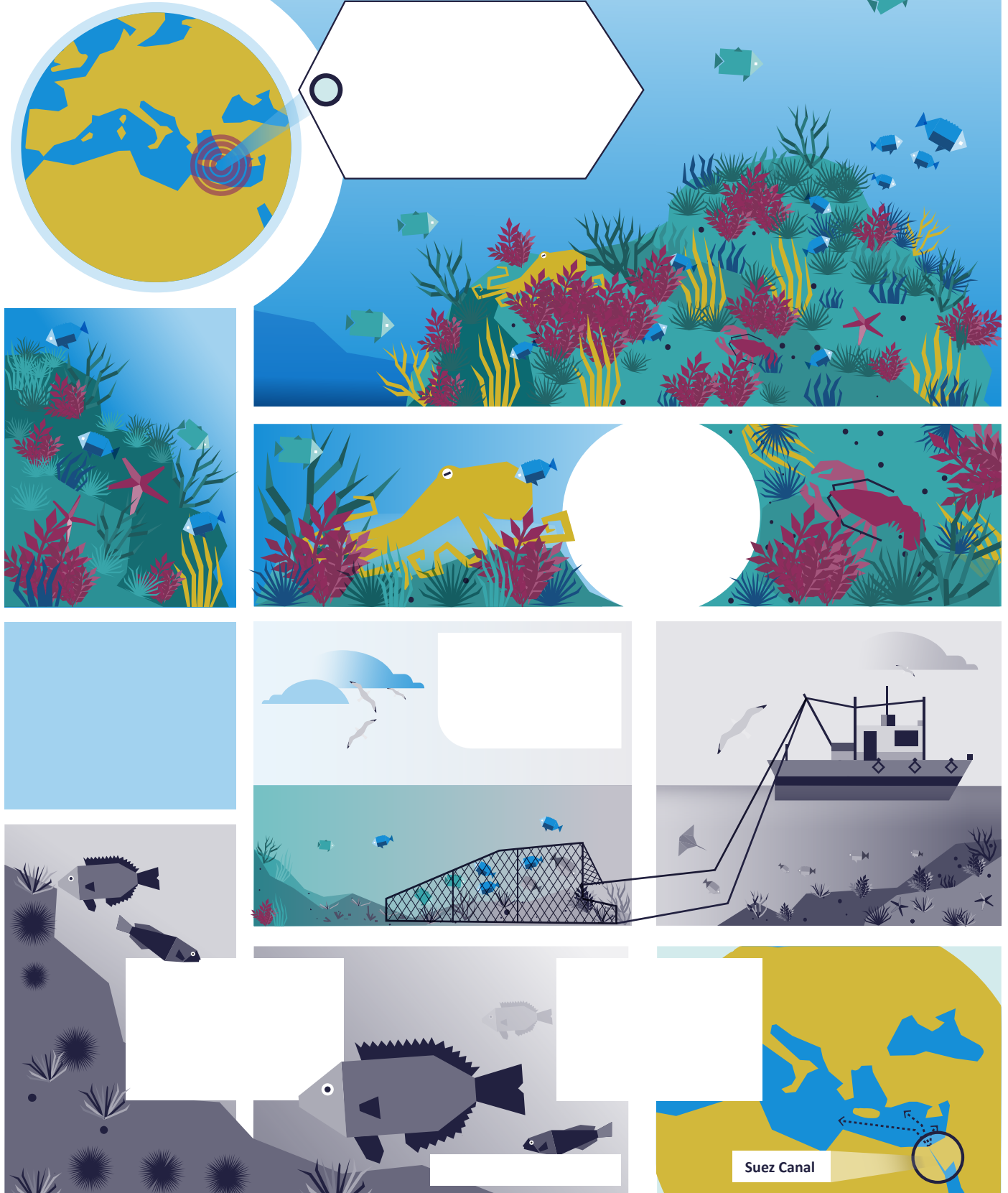


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REEFS UNDER THREAT



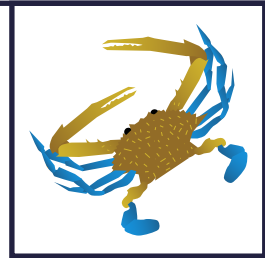
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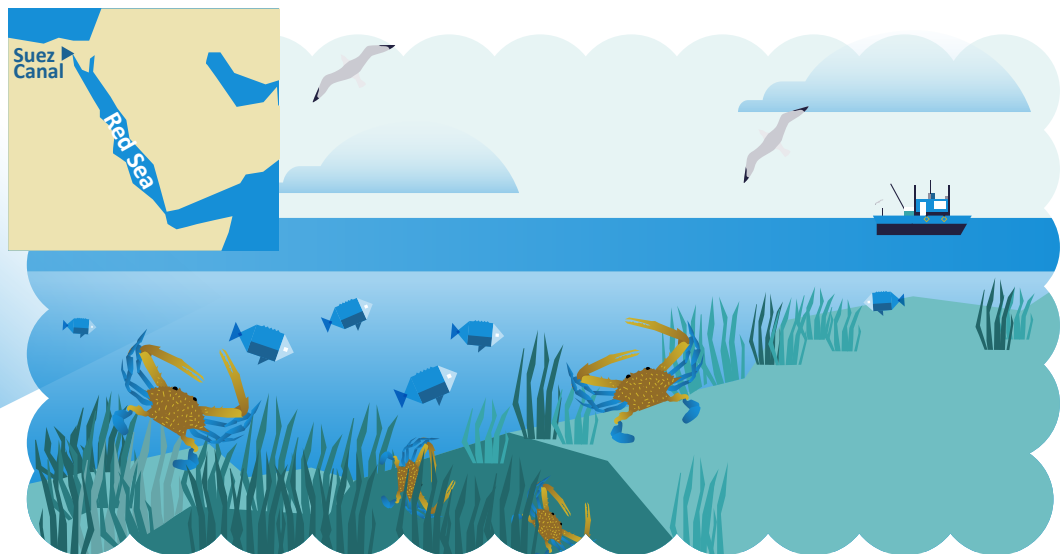
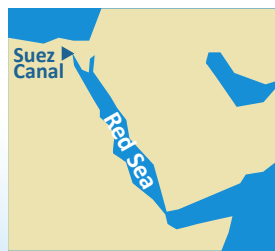


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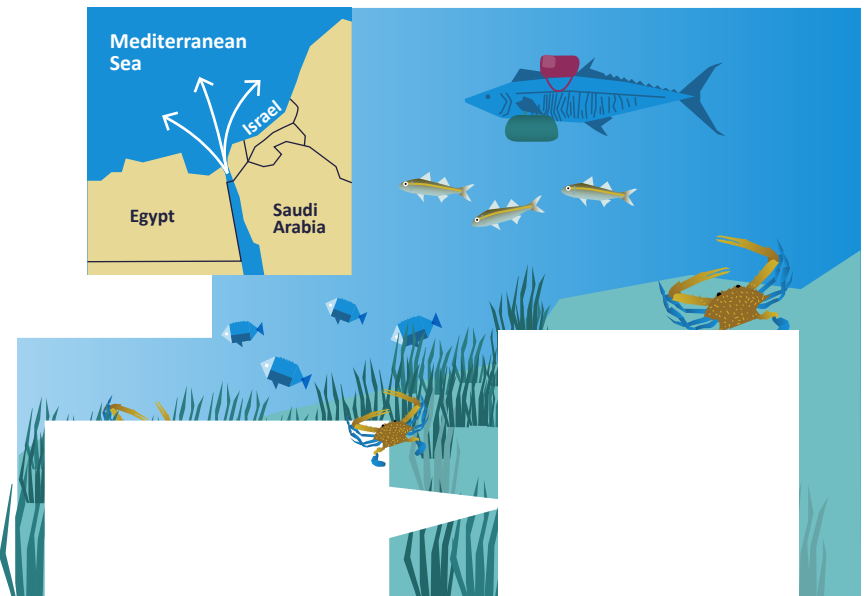
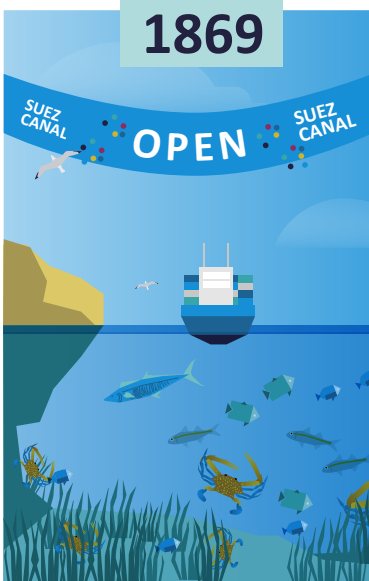
THE TRAVELS OF THE BLUE CRAB



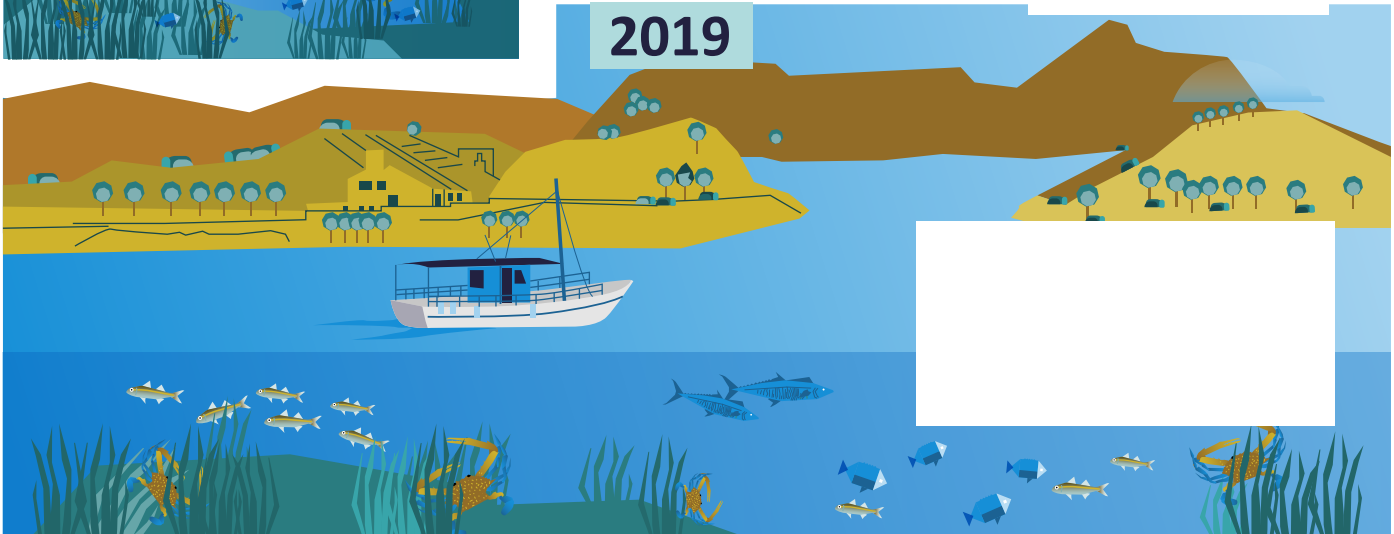
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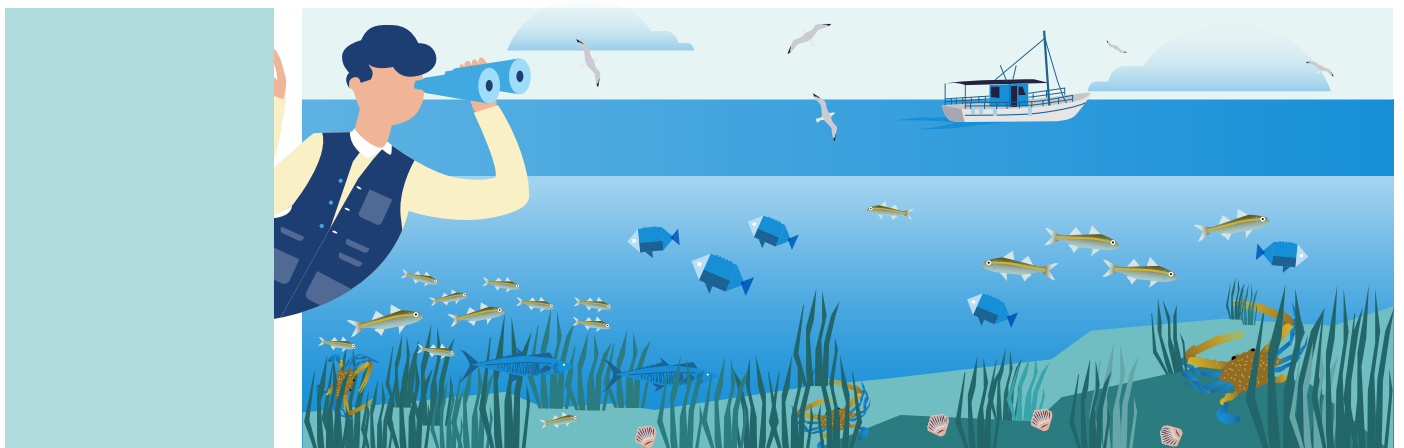
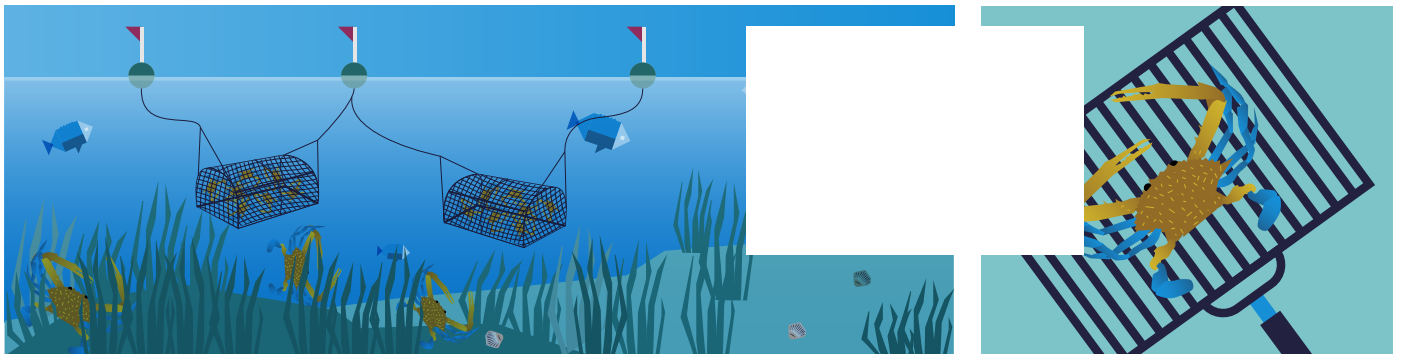
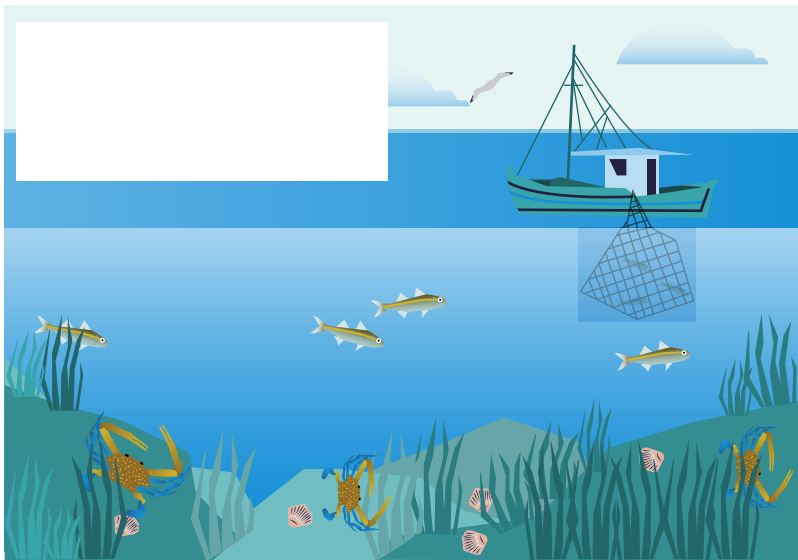
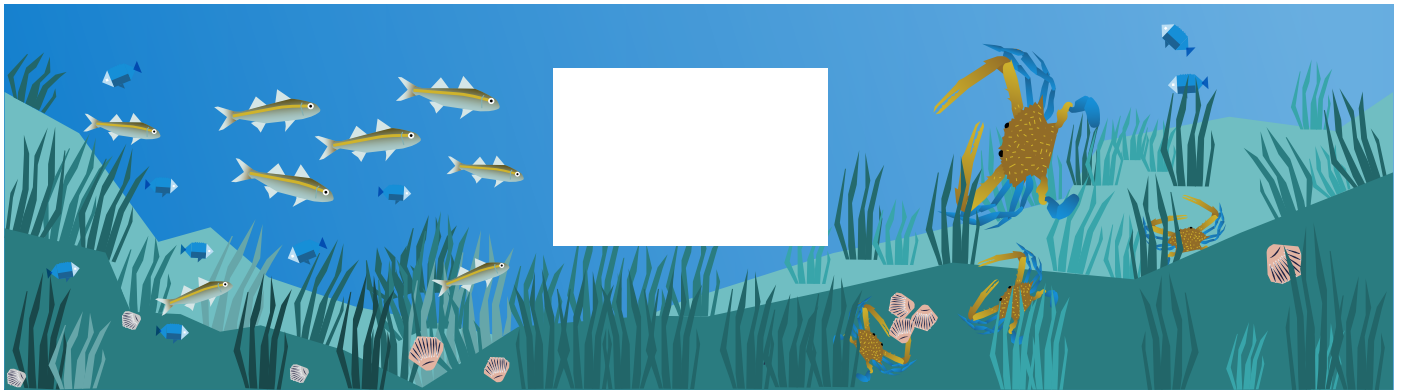


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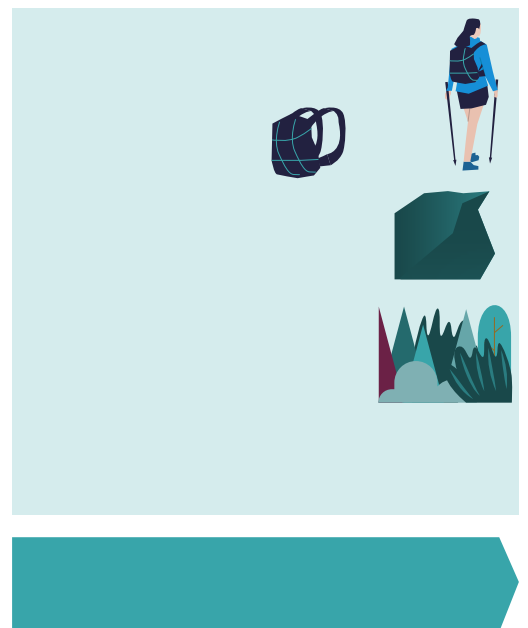


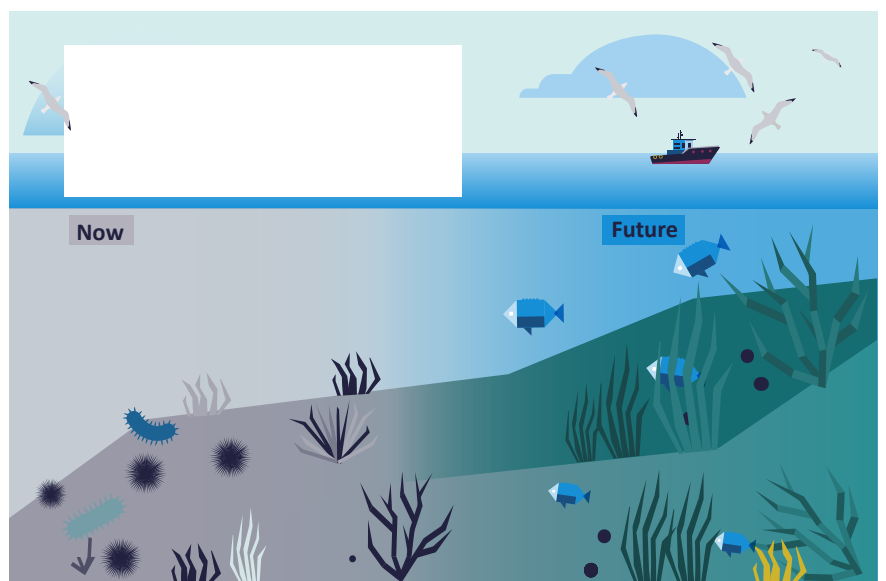
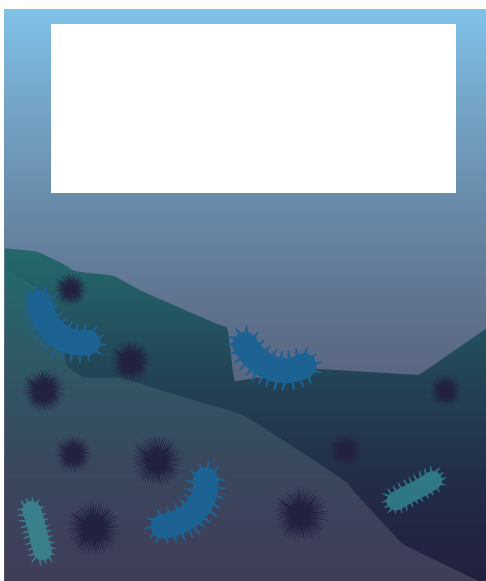
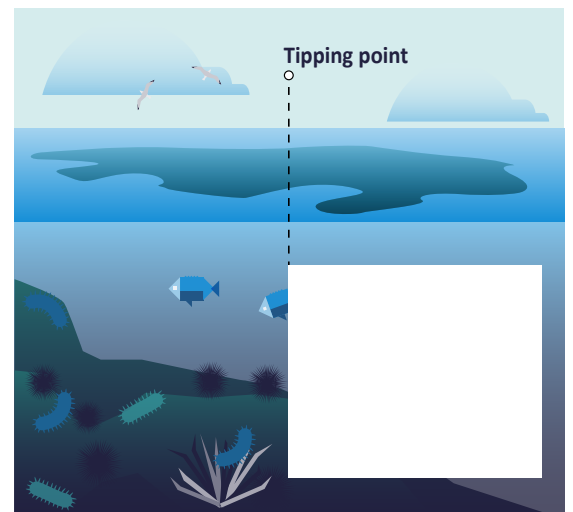
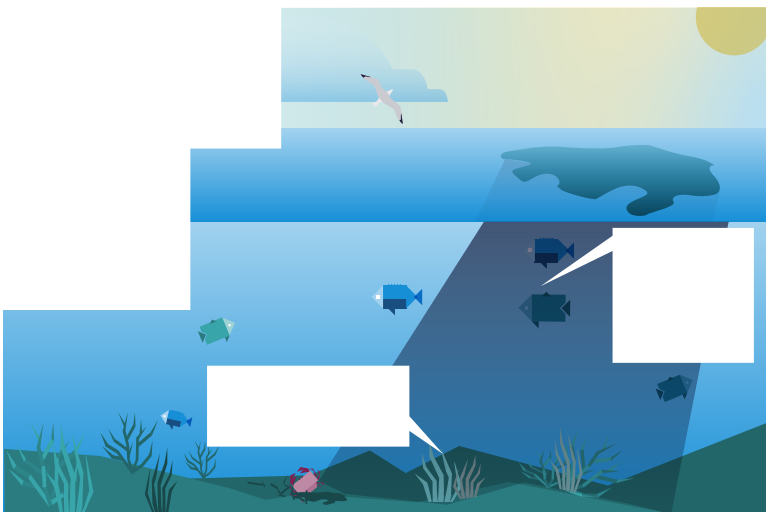
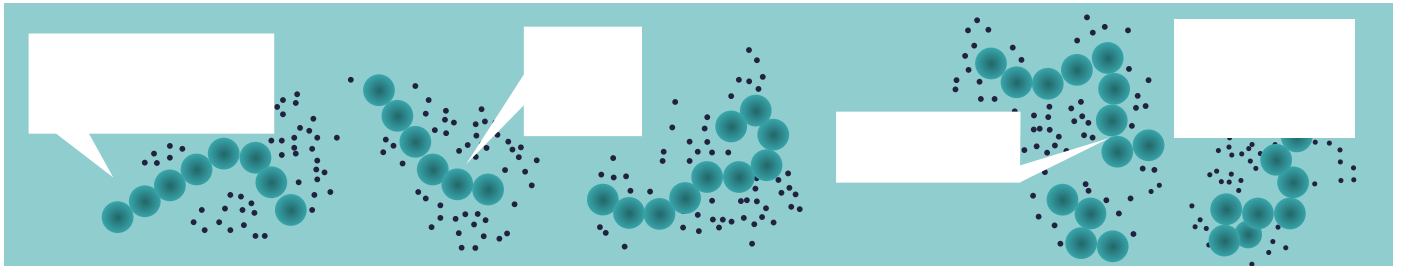
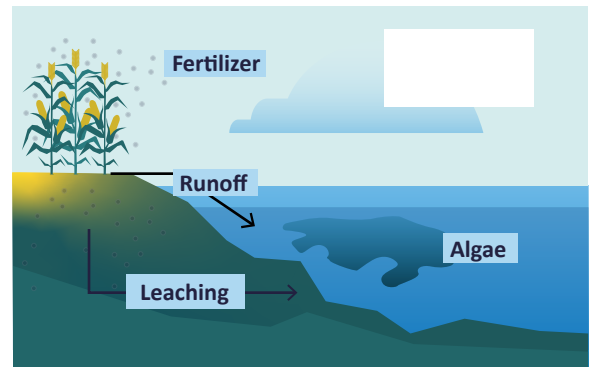
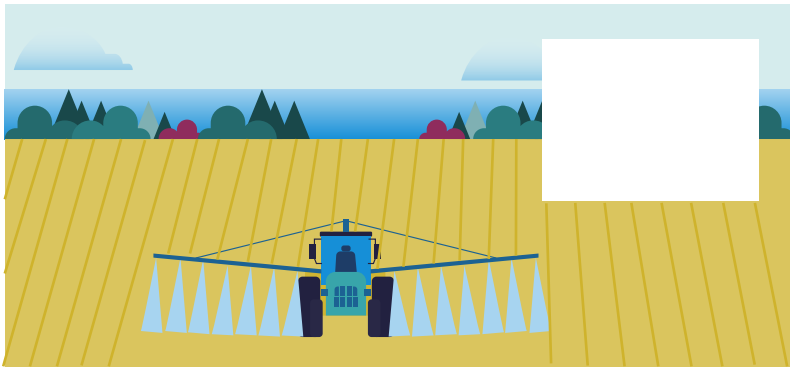


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**TIPPING POINTS: ONCE YOU FALL,
IT IS VERY HARD TO COME BACK UP**



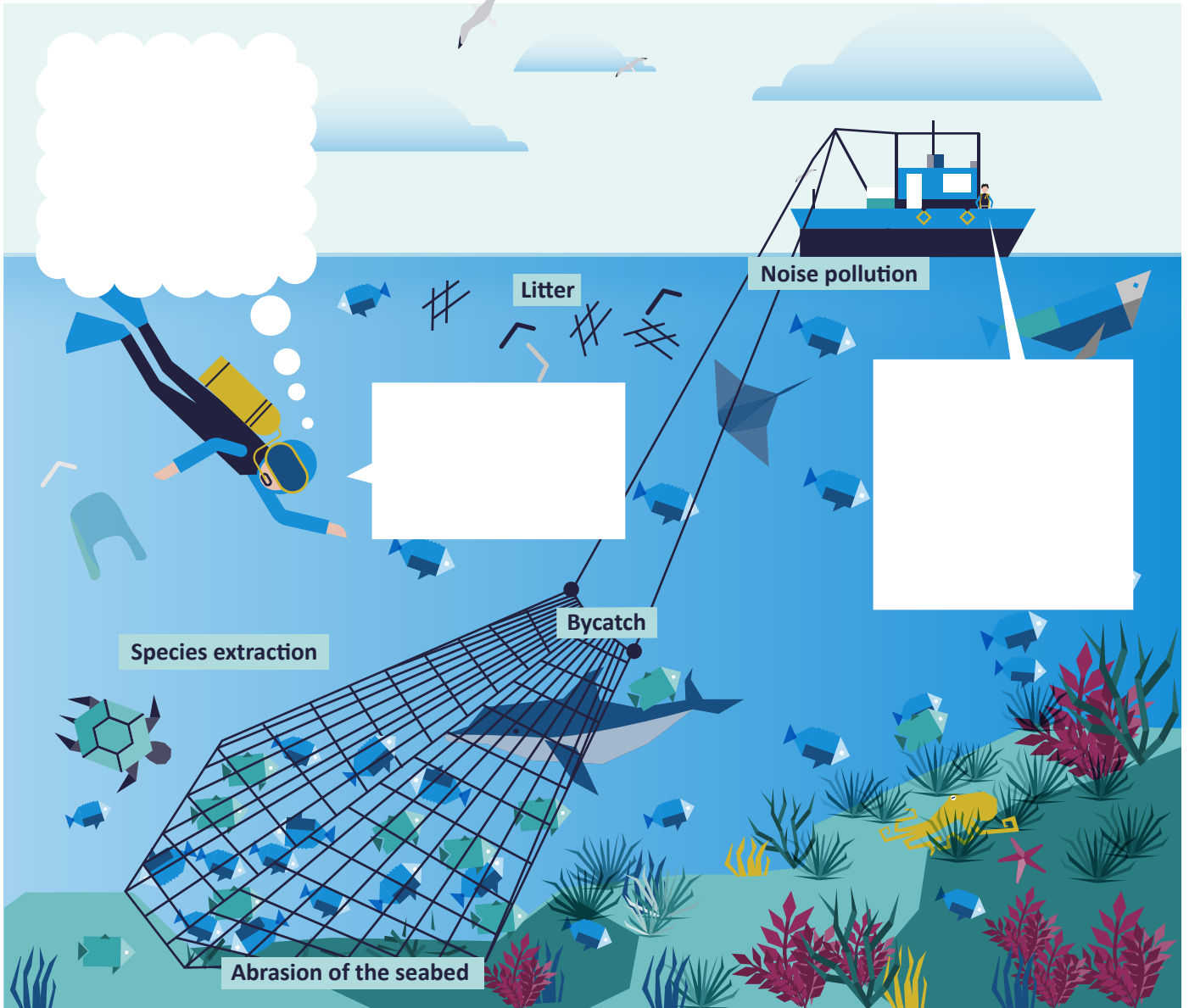
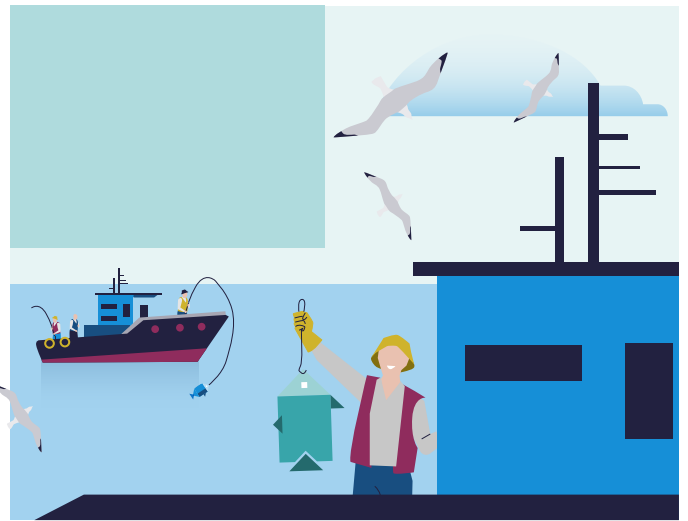




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ECOSYSTEM BASED MANAGEMENT

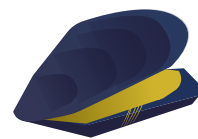


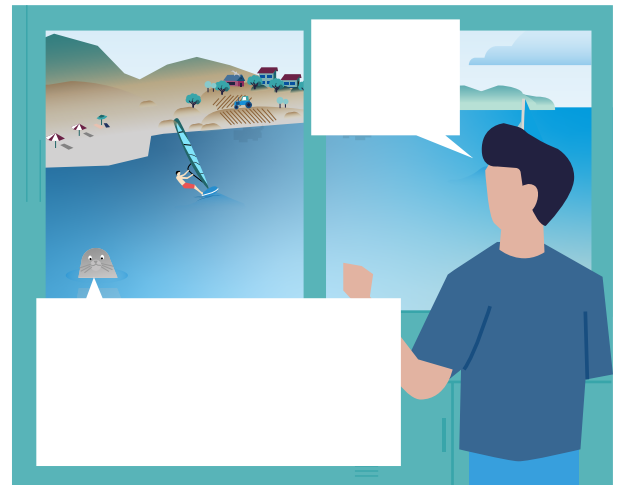
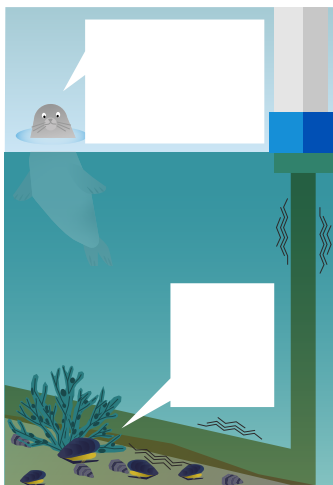
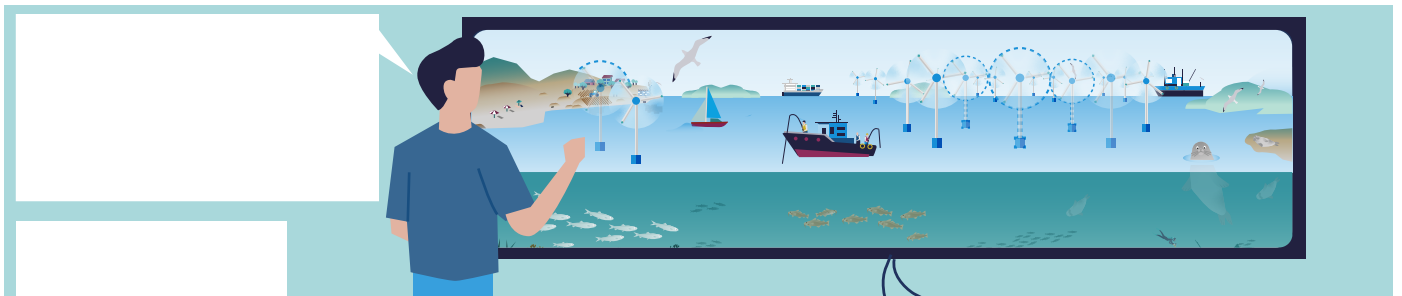
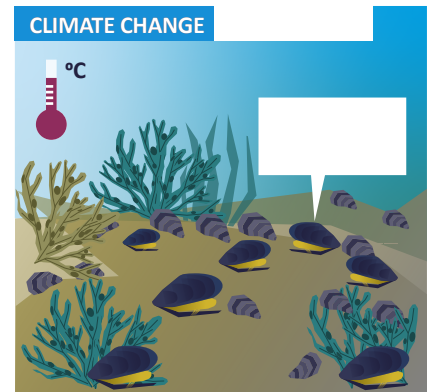
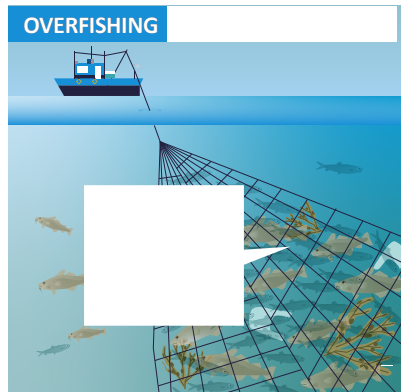
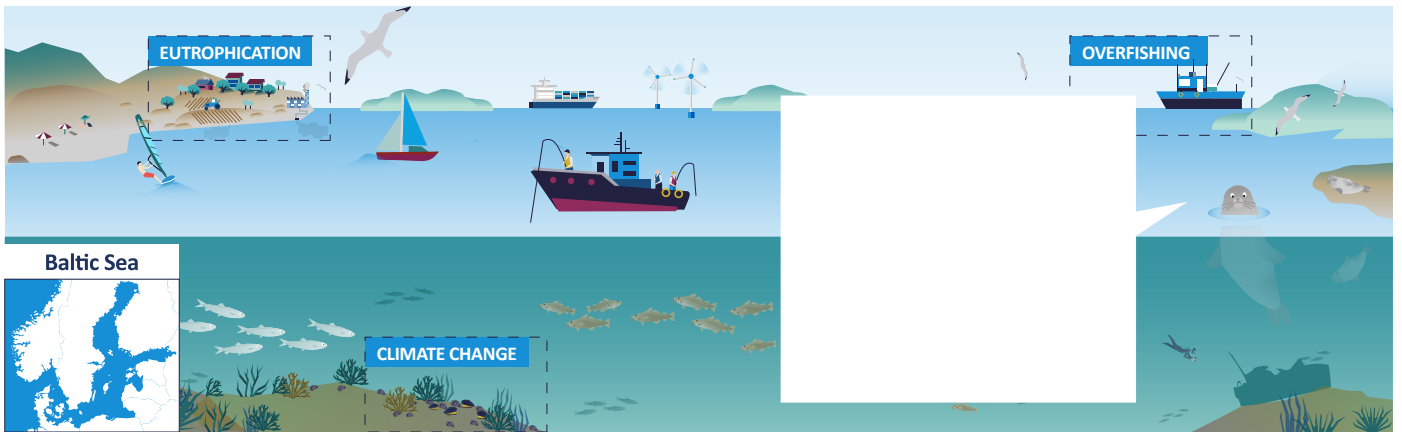


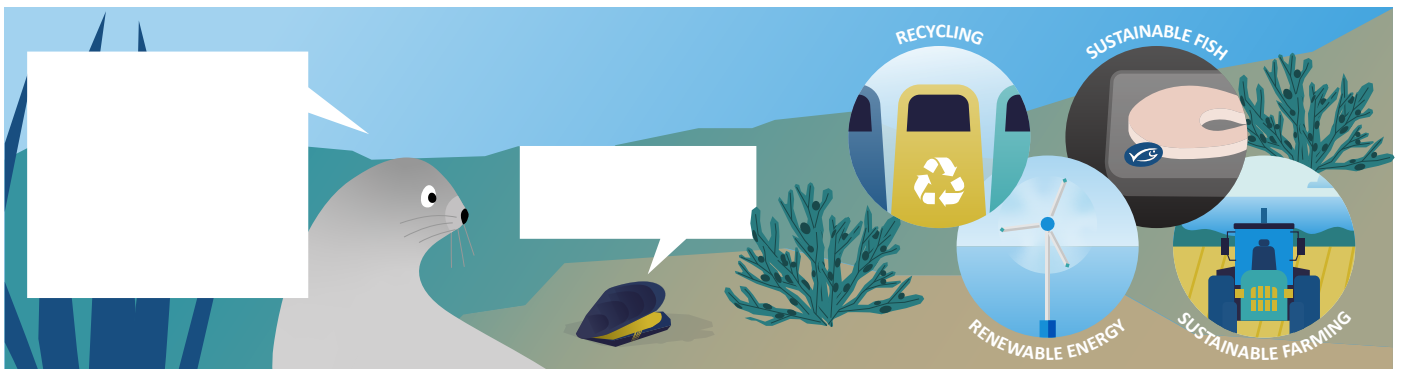
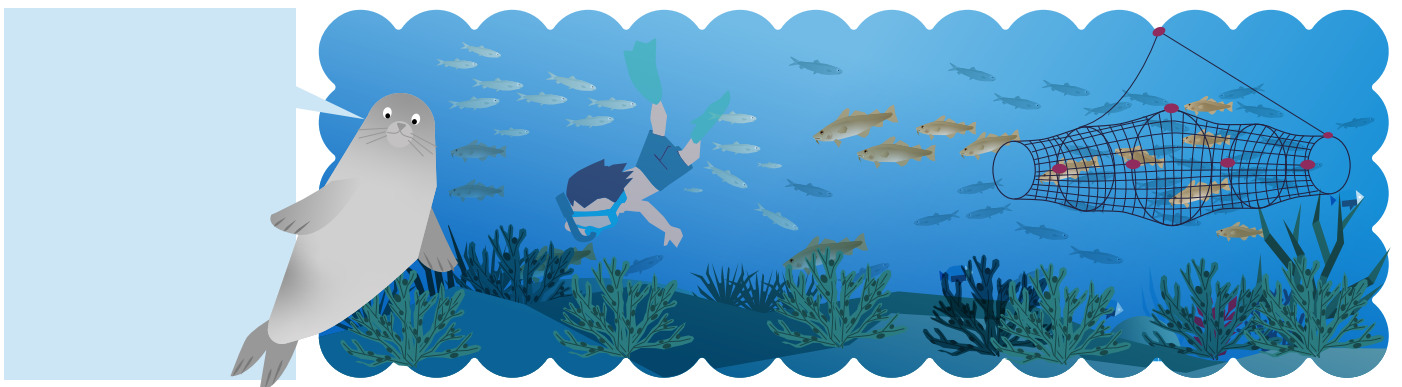
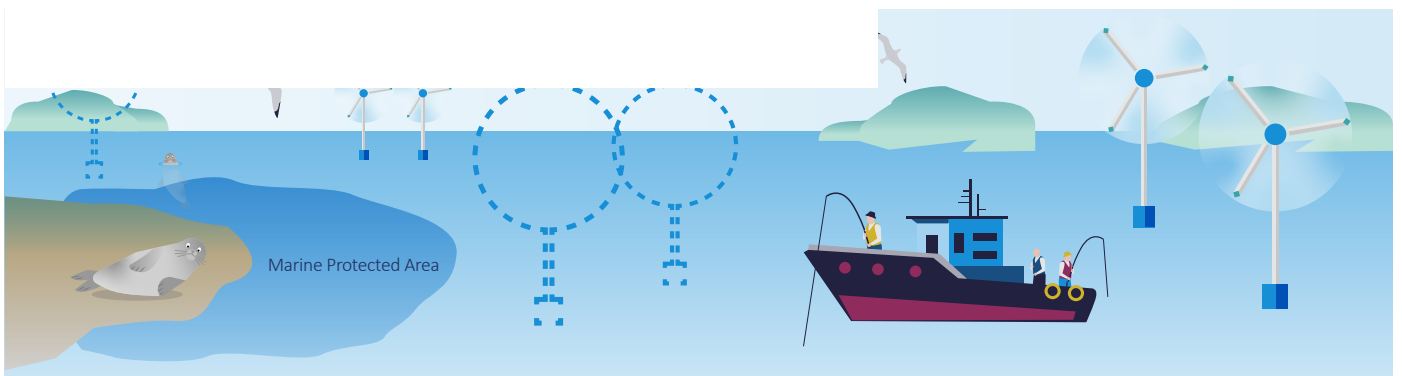
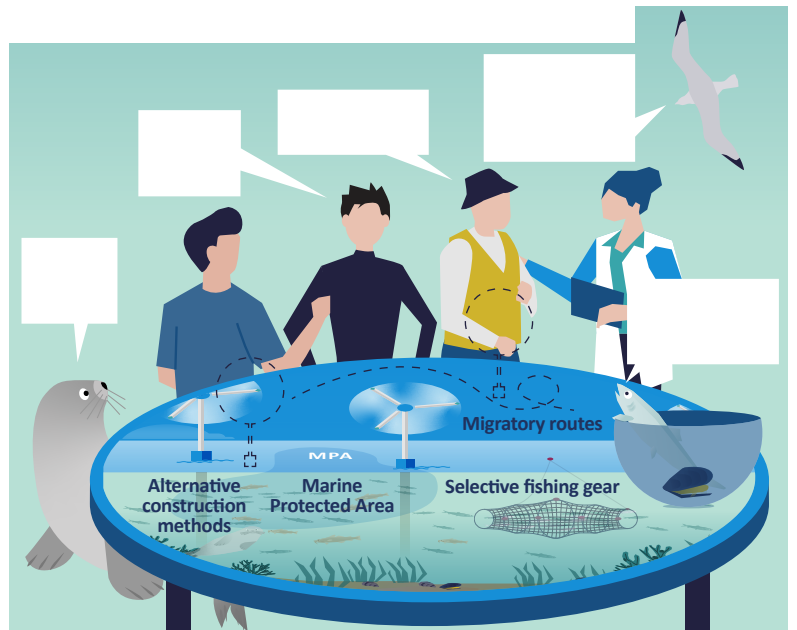
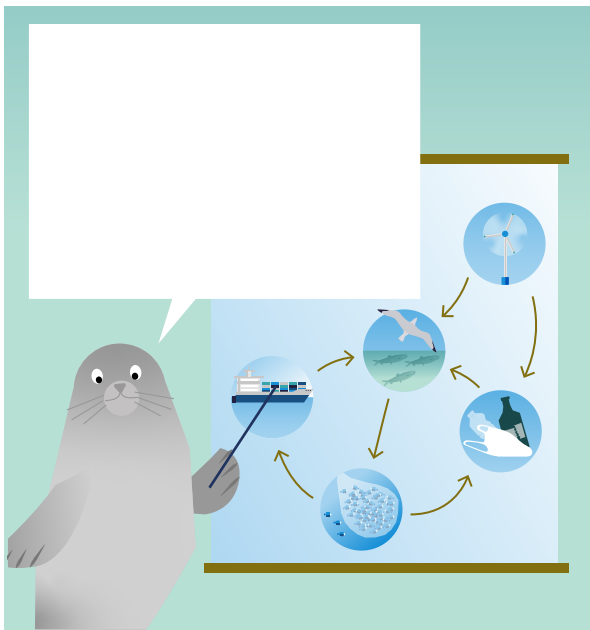


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**BALANCING THE BALTIC SEA -
ECOSYSTEM BASED MANAGEMENT
FOR PROMOTING BIODIVERSITY
AND SUPPORTING LIVELIHOODS**



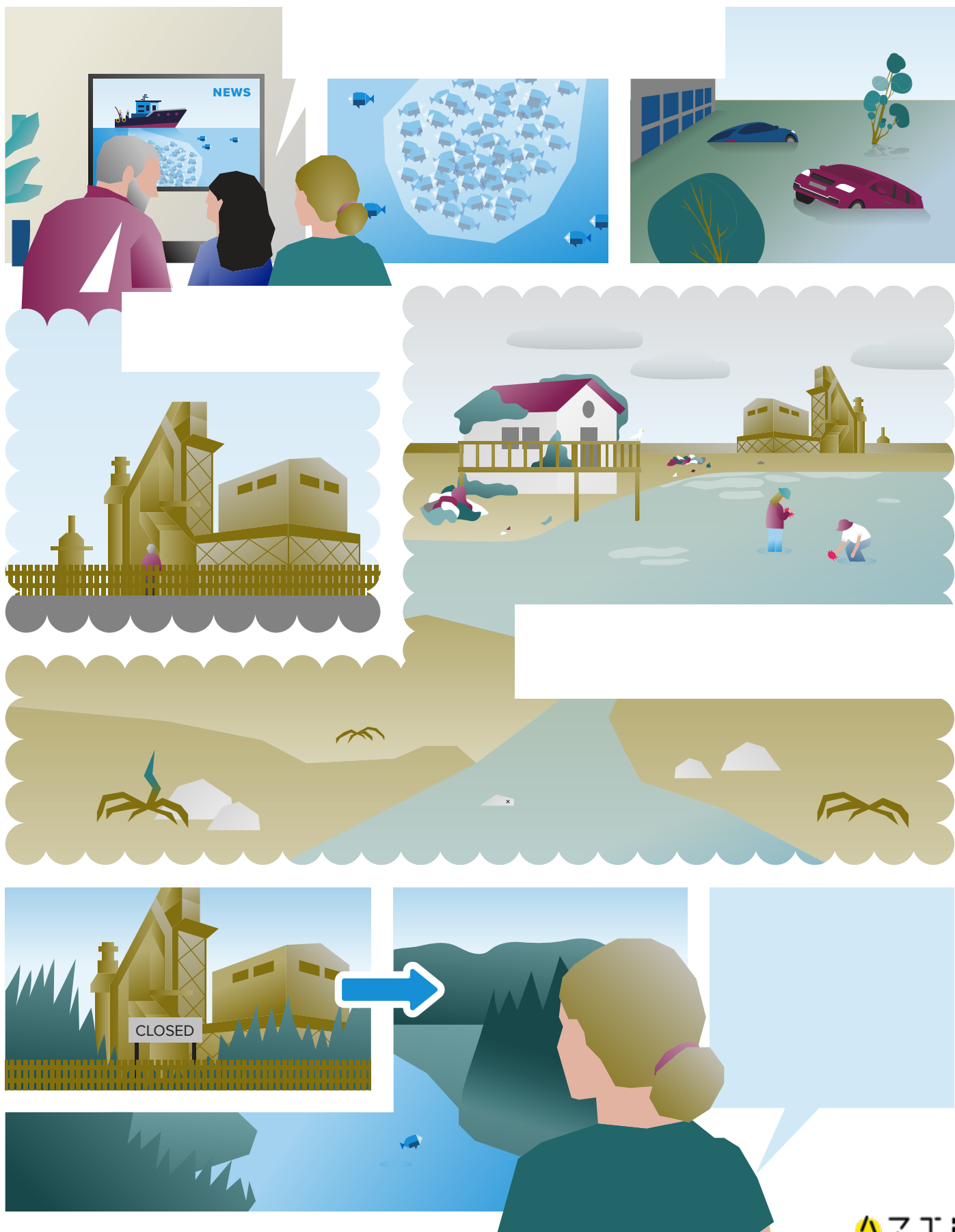


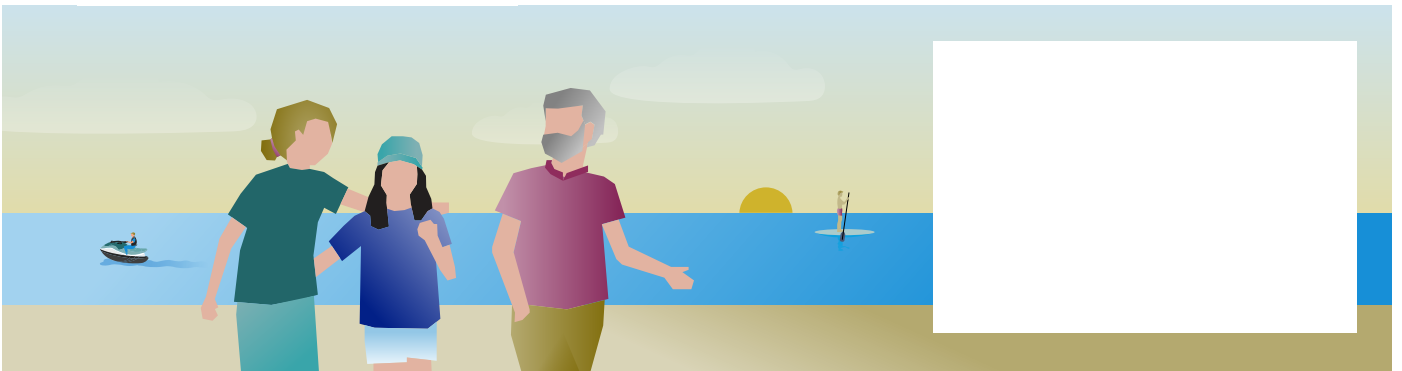
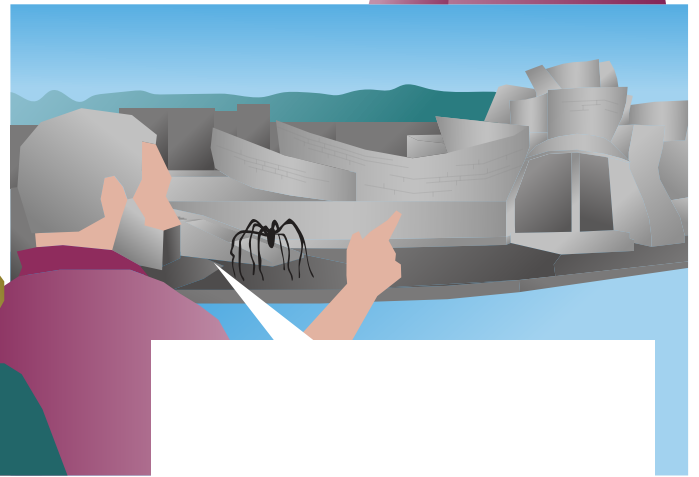
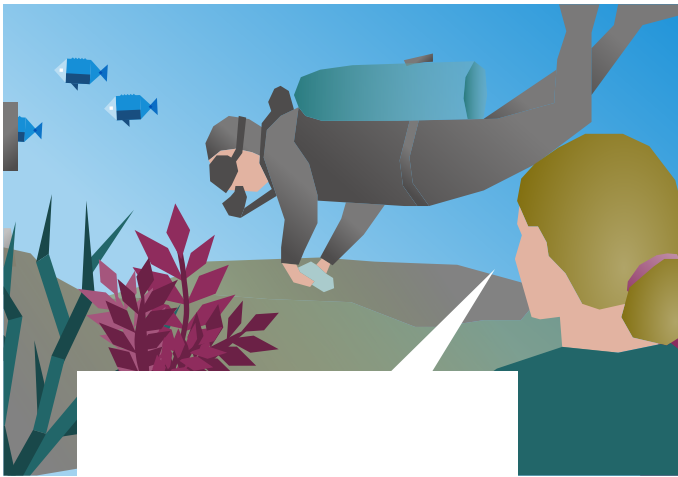
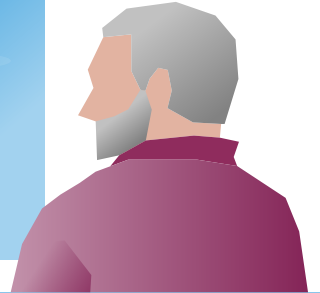
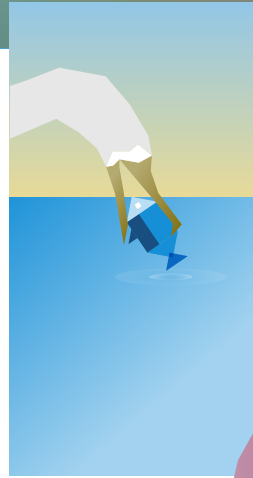
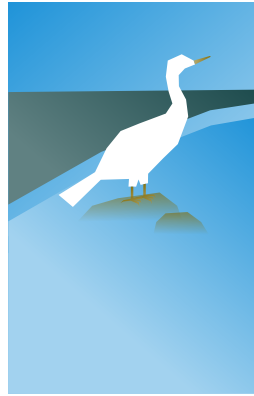
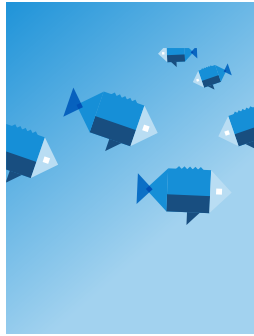
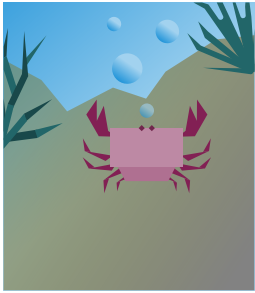


8

THE RECOVERY OF “BILBAO BLUE” COLOUR

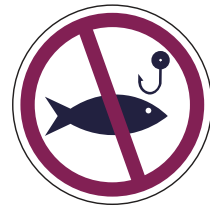


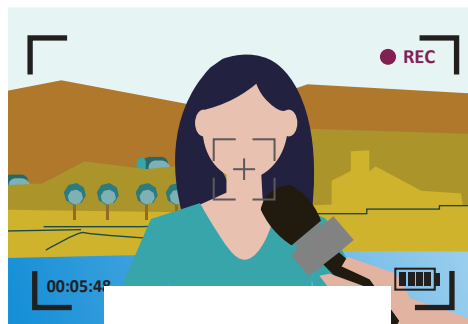
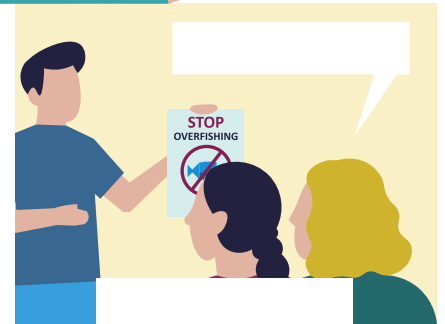
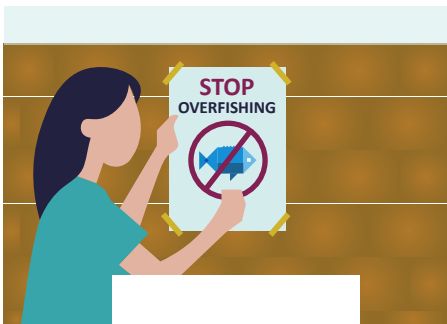
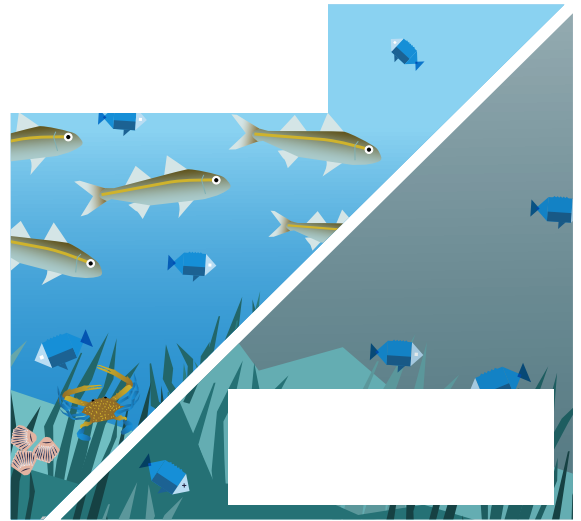
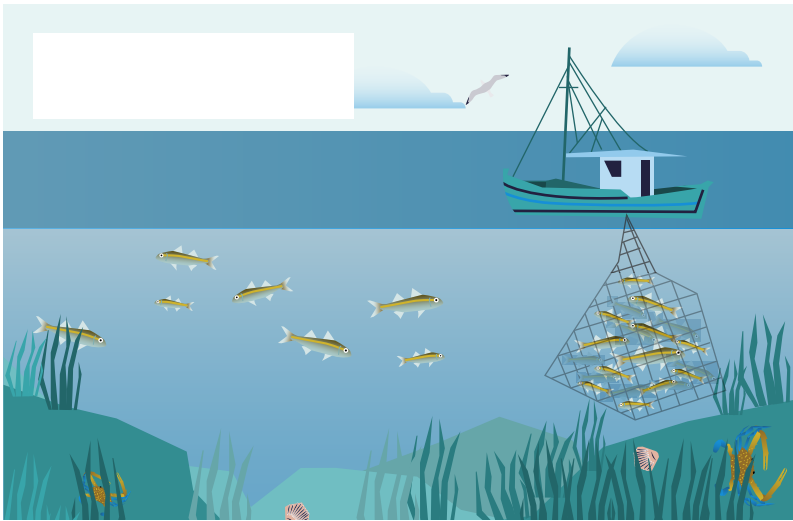




9

THE POWER OF THE OCEAN







10

WAVES OF OPTIMISM



NEWS ROOM

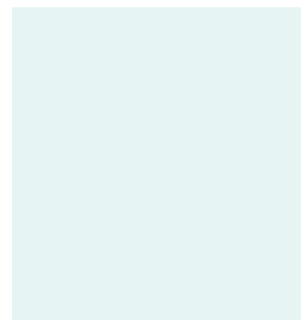
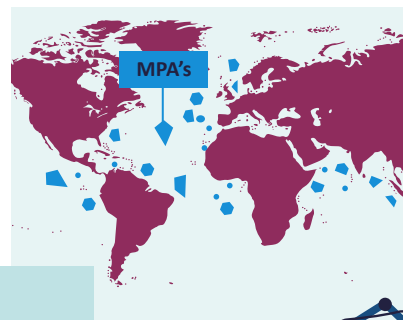
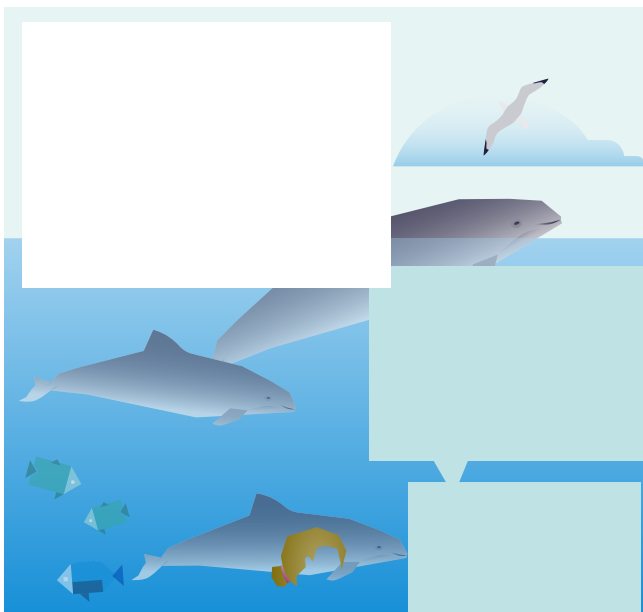
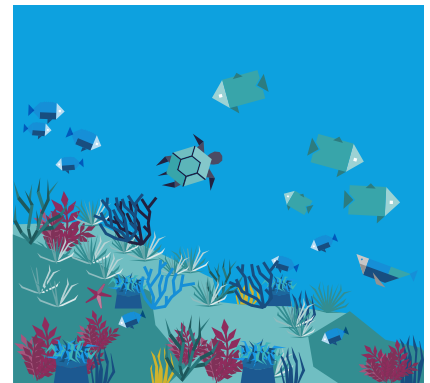
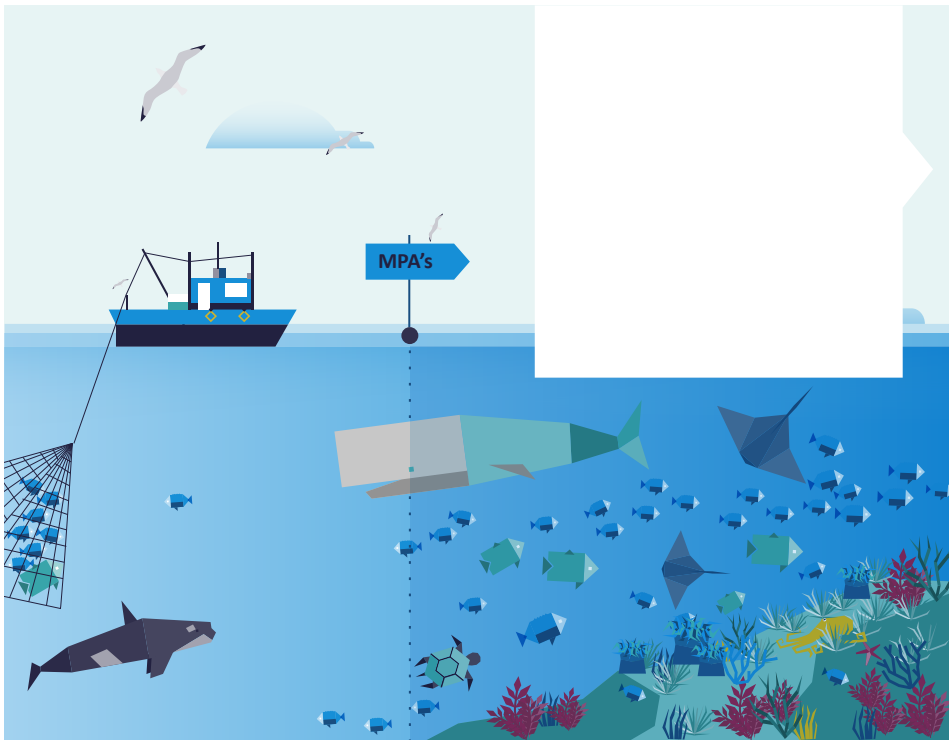
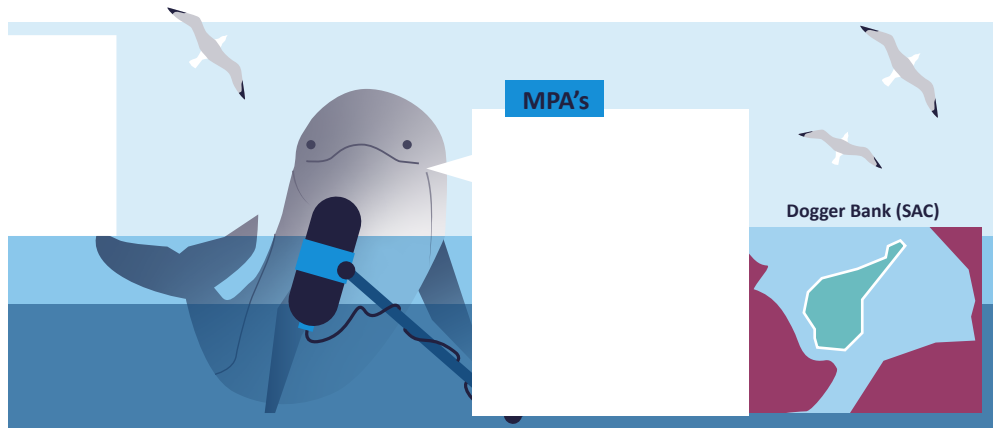
GOOD NEWS Doom & Gloom raincloud · Doom & Gloom raincloud ·

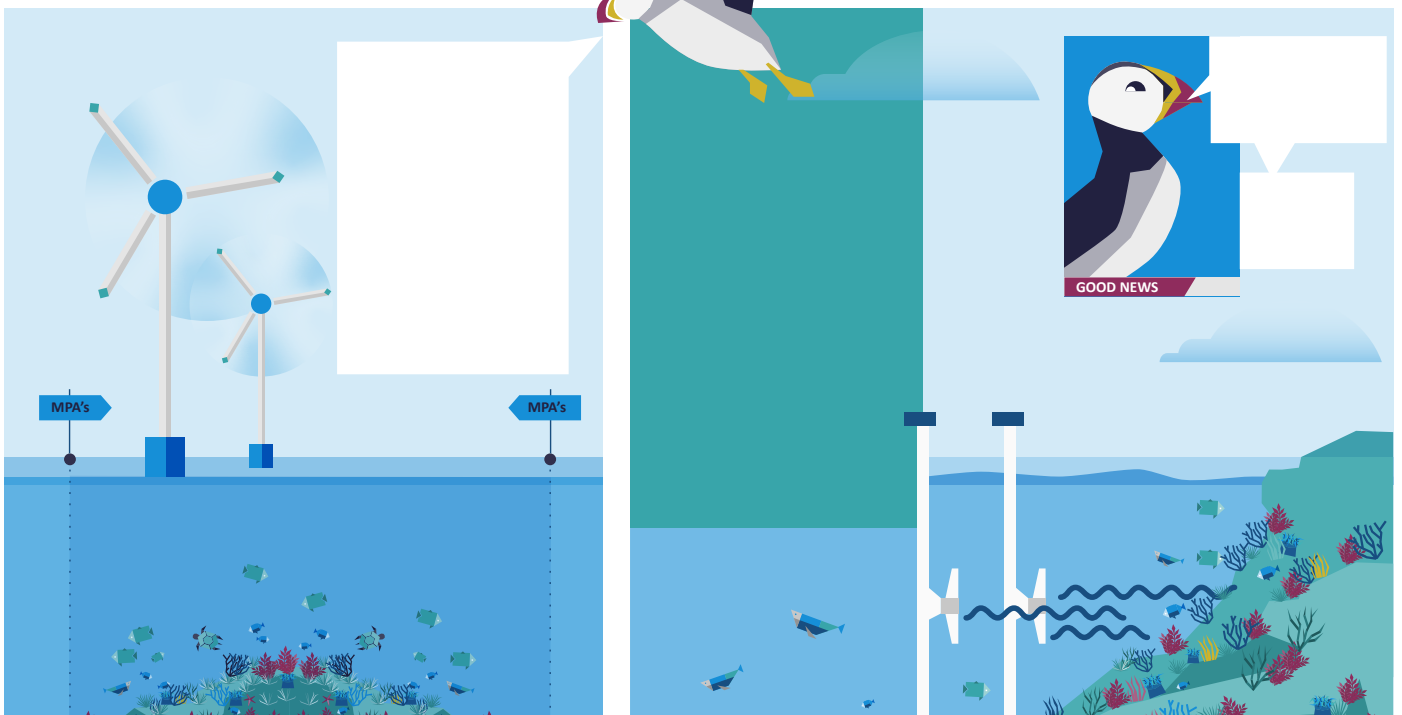
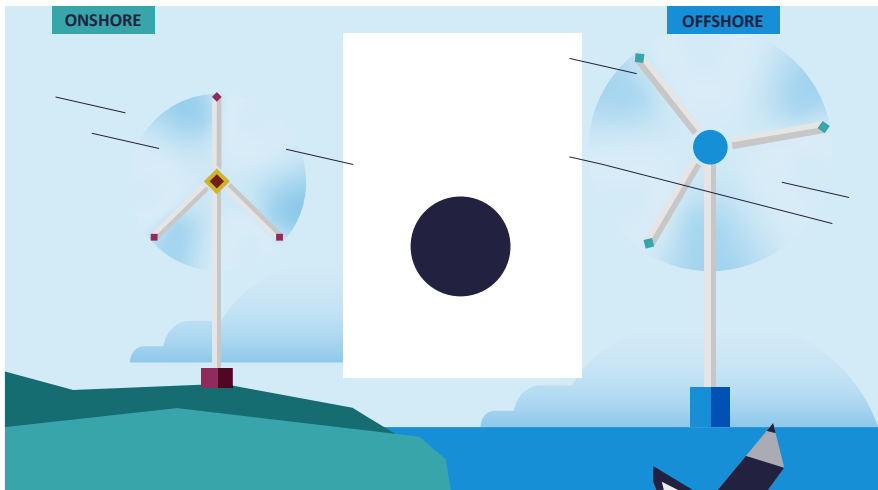
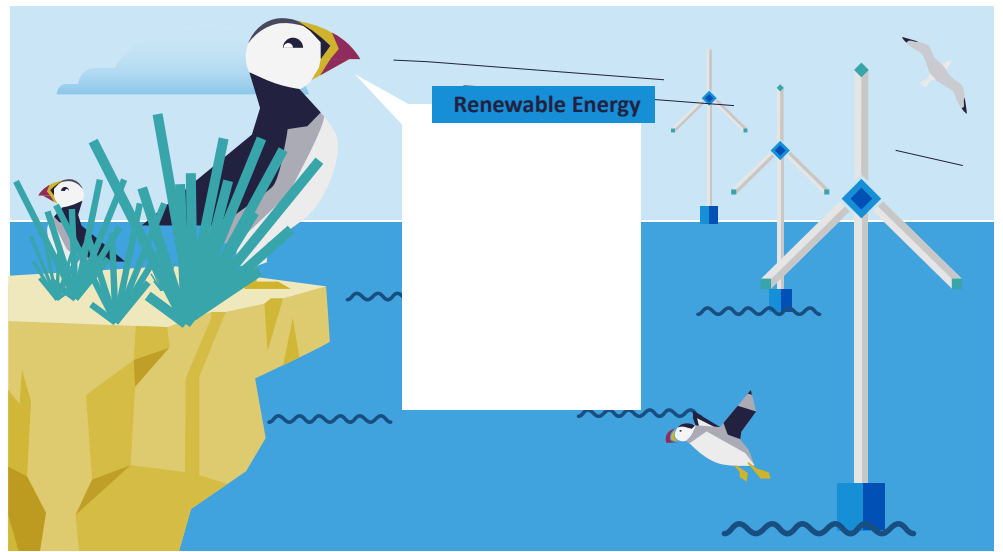
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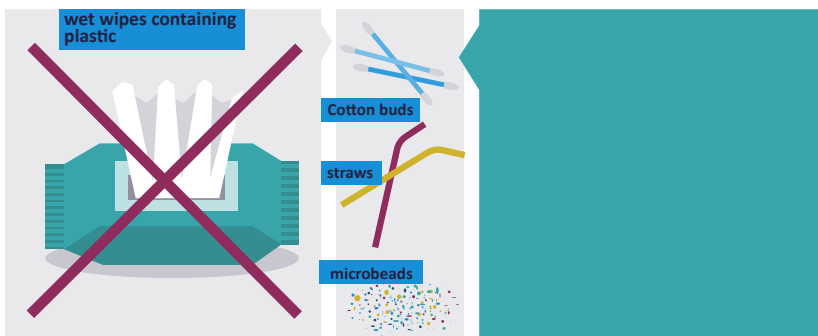
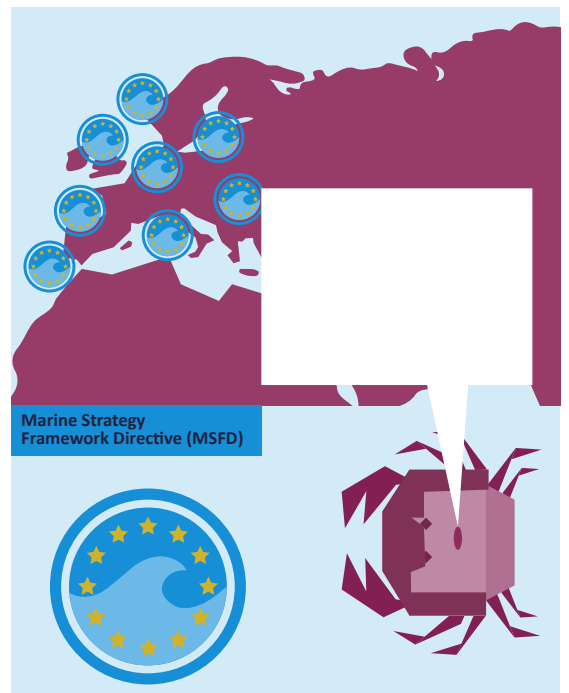
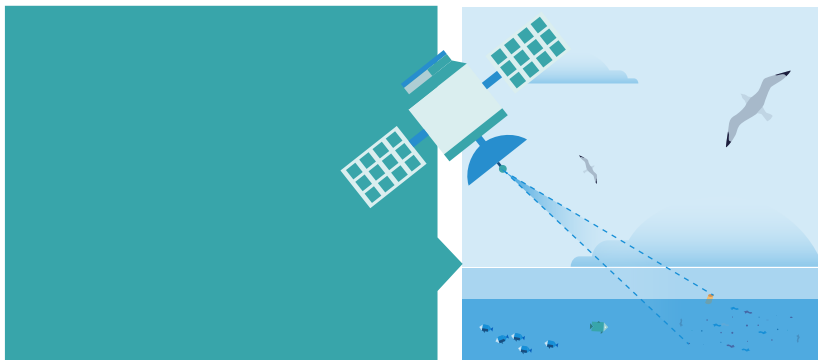
Habitat Restoration

30,000

200 l of water







resilience and hope beneath the ocean surface · ocean optimism · protect our seas ·

GES4SEAS



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U.K. Research and Innovation Project Reference
10040226

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and predict integrated impacts of cumulative
direct and indirect stressors on coastal and
marine biodiversity, ecosystems and their
services".

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