EcoScope

Ecocentric management for sustainable fisheries and healthy marine ecosystems

Project Deliverable Report

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1 Executive Summary

The final EcoScope stakeholder engagement events took place in May 2025 in Brussels and included a stakeholder workshop held on 27 May, followed by a dedicated Marine Spatial Planning (MSP) Challenge Simulation game workshop on 28 May. The aim was to showcase the final EcoScope tools and collect the stakeholders' reflections on their value, and how they could be improved further.

The stakeholder workshop was attended by 17 external stakeholders, including policy makers, NGOs, Advisory Councils and scientists, as well as 12 EcoScope consortium members, including three facilitators. This workshop began with a refresher on the EcoScope project, in which project partners highlighted how feedback from the first stakeholder workshop had been integrated, followed by interactive sessions where participants actively discovered the EcoScope tools and provided further feedback.

The MSP Challenge workshop was attended by 20 people: 14 external representatives and 6 from EcoScope. During this half-day session, participants played an MSP Challenge game, creating Marine Spatial Plans and subsequently seeing the results of their actions through the underlying models.

Both workshops were very well received. Participants noted that they really enjoyed the workshops and learned a lot, while the EcoScope team received very valuable feedback, which will help further improve the tools.

2 Introduction

EcoScope is a Horizon 2020 funded project that runs from September 2021 to August 2025 and aims to promote effective ecosystem-based fisheries management (EBFM). To this end, it has developed a series of decision-support tools to support the implementation of EBFM. These tools include: A Platform[1], which combines and visualises a wide array of EBFM-related datasets in a single-entry point; Ecosystem Models for eight case study areas[2] to examine the impact of different management options; a Toolbox[3] with three sustainability scoring system that are based on interdisciplinary and EBFM relevant indicators; and a new Eastern Mediterranean edition of the Maritime Spatial Planning Challenge Simulation game[4], which includes several fisheries features.

Stakeholder engagement and co-creation of the EcoScope tools was an important element of the project. The first stakeholder engagement workshop was held online on 16 February 2022. The aim was to understand stakeholder needs and obtain input for the design of the EcoScope tools. The workshop provided important insights and feedback, which were key in shaping the design of the tools and their outputs.

The final stakeholder workshop was held in-person in Brussels on 27 May 2025. The aim was to showcase the tools, collect stakeholders' reflections on the value of the tools, and identify future projects to develop this work further. On the following day, a dedicated MSP Challenge simulation workshop was held, during which participants played a MSP Challenge game. This workshop was also held in-person in Brussels, and all invitees to the 2nd EcoScope stakeholder workshop were invited to attend.

This deliverable provides a summary of the methodology, results and insights of the second and final EcoScope stakeholder workshop.

3 Participants and methodology

Invitations to attend the second stakeholder workshop were sent to all participants of the first stakeholder workshop, as well as to all stakeholders that signed up to the EcoScope Stakeholder Forum. Moreover, additional key stakeholders identified since the first workshop, were invited. In total, 17 external stakeholders from 12 organisations participated in the workshop (see Annex 1). These stakeholders included policy makers, NGOs, Advisory Councils and scientists. In addition, 9 people from the EcoScope

[1] https://data.ecoscopium.eu/
[2] https://ecoscopium.eu/project-regions
[3] https://ecoscopium.gr/
[4] https://www.mspchallenge.info/

consortium participated, as well as a professional facilitator, and 2 additional facilitators from the European Marine Board.

Figure 1: Participants of the second stakeholder workshop

The professional facilitator, Lizzie Crudgington[5], also facilitated the first EcoScope stakeholder workshop. The content of the workshop (Annex II) was developed by the European Marine Board, together with Lizzie and the relevant EcoScope partners, and consisted of:

1. An opening session, in which the objectives and overview of the day were presented.

[5] https://www.iaf-world.org/site/members/elizabeth-crudgington/284

2. A 'refresher on the EcoScope project' session, in which EcoScope partners highlighted how the stakeholder feedback from the first workshop had been integrated, noting major achievements and challenges for the future. This session consisted of a set of presentations per tool (EcoScope Platform, EcoScope Toolbox, MSP Challenge and models) with Q&A at the end.
3. An 'active exploration of the results of EcoScope's modelling work' session, in which the stakeholders looked into the outputs of some sample scenarios to understand the models' scope and capabilities, while answering some pre-prepared questions (see Annex III, 8.1). This was followed by reflections on what they found most exciting about EcoScope's modelling/ scenario work, who they think needs to know more about this offering, and ways to spread the word. This session was done in small groups, followed by a plenary discussion.
4. A session on 'active exploration of the EcoScope Toolbox, Platform and the Marine Spatial Planning Challenge Simulation', in which participants completed guided tasks (see Annex III, 8.2-8.4) in small groups to explore these online tools at computers in the room. This was followed by participants' reflections on what they like about each tool, who they think each tool would be of greatest interest and value to, and their thoughts on future projects that could pick up and/or further develop this work.
5. A 'stakeholder reflections on EcoScope's offerings' plenary session, in which a debriefing of all tools was made, with opportunities for clarifications and discussion.
6. A closing session, during which the EcoScope partners outlined some of the deep uncertainty work done during the EcoScope project, and highlighted next steps, such as linking up with other projects and the EU DTO, and finding sustainable solutions for the longevity of the Platform.

The MSP Challenge game workshop, held the following day, was attended by 20 participants (14 external people and 6 from EcoScope). This half-day workshop started with an introduction to the MSP Challenge and its main features. Participants then got settled in teams and started developing their marine spatial plans considering national goals and negotiating with other countries if needed. The simulations of those plans including energy, shipping, fishing and ecology, were run during the lunch break, and afterwards the participants explored and interpreted the results. The workshop concluded with questions and observations of the participants, as well as main takeaways (see Annex IV for agenda and Annex V for the results of the simulated marine plans).

4 Stakeholders' reflections and feedback on the EcoScope tools

4.1 Feedback on the modelling/scenarios work

'What do you find most exciting about EcoScope's modelling/scenario work?'

The workshop participants really appreciated how the complex modelling work had been translated into simplified visuals. They noted that the graphics are very informative and make the work more accessible,

which is a big improvement. However, they advised to also add some written explanation of what the graphs show to further improve accessibility, and that some stakeholders might need simpler graphics.

They valued the ability of the models to combine diverse data, including higher and lower trophic levels and biogeochemical data, as well as their ability to cover long-term scenarios (30 years) and provide various indicators as outputs. They noted that it provides a good overview of the situation and a way of predicting the future, particularly for more complicated zones, where a lot of parameters affect the outcomes and there are diverging stakeholder interests. Some stakeholders highlighted, however, that they would like to have more information on where the data came from, to better understand how the models were parametrised and thus increase their trust in the results.

From a policy making perspective, the graphics were seen as an interesting and useful tool to visualise the data and see the interlinkages between species. In some cases, the modelling results confirmed assumptions already made while others were unexpected and thought-provoking. The graphics were therefore seen as a visual aid to trigger conversation and talk about the challenges.

Overall, the modelling/scenario work was seen as having high potential for supporting EBFM, thanks to its usability and implementation potential. Participants appreciated its capacity to combine diverse datasets and indicators to support decision-making and problem analysis.

'Who do you think need to know more about EcoScope's modelling/scenario offering?'

Participants highlighted a number of stakeholder types for which they though EcoScope's modelling work would be relevant, including managers, fisheries organisations, decision-makers, scientific advisory bodies, scientists and students.

At the local level, managers and stakeholders directly involved in fisheries activities, such as fisheries organisations and fishers themselves, were seen as relevant. Participants noted the importance for fisheries organisations to see the impact of different management decisions, while emphasising the need to obtain feedback from them on the modelling results.

At the government level, attendees highlighted that all people involved in fisheries decisions-making are relevant, such as policy makers, governments and national ministries. Within the European Commission, DG MARE's Total Allowance Catches (TACs) and quotas team was specifically highlighted as being very relevant. However, some participants pointed out that even though it will be interesting for DG MARE to see this work, the European Commission will consult their official advisory bodies (e.g. JRC, ICES, STECF and GFCM) for advice to make decisions. This is because there are trust issues with advice coming from other sources, so it would be more useful to target the advisory bodies directly, so they can channel the information to the European Commission. Scientific advisory bodies were therefore highlighted as a key group. It was also noted that scientific advisory bodies are responsible for making sure that the results are based on the best available scientific knowledge and are trust-worthy. Therefore, they would need to have much more technical information on the models, including validation and description, not just the graphs.

Researchers, including environmental institutes, fisheries scientists and the Ocean Decade community, were also highlighted as relevant groups which should know more about EcoScope's modelling/scenario work. For fisheries scientists it was noted that specific variables might be of higher interest to them, and that it would be good if they integrate more of this kind of work in their assessments, because much of fisheries scientists' current work is still based on single-stock advice.

Other organisations attendees recommended to promote EcoScope's modelling/scenario work included the Regional Sea Conventions, e.g. HELCOM, OSPAR, RAC/SPA, and NGOs such as Seas at Risk, WWF and the Swedish Society for Nature Conservation. They also noted that the Greater Northern Sea Basin Initiative might be very interested in the North Sea case study area, because they are seeking to implement conservation measures there. Finally, it was noted that university students and those studying relevant topics should be aware of these possibilities, as they will be the future experts.

'What do you think would be some ways to spread the word to these people?'

Participants suggested starting with internal reflection on how different audiences could use the outputs of the modelling/scenario work, including considering the needs of different stakeholders and regions. They recommended to first raise awareness among the target audience about what the models can do, what kind of questions they can answer, and what are the most useful indicators and parameters. Then these stakeholders can reach out when needed.

They further recommended to adapt the process and outputs to the policy-making cycle. For instance, for policy makers it is not relevant to know what will happen in 2100, but they need to know what will happen in the coming year. If the positive outcome of a decision will only be seen after several years, it was suggested to first convince the stakeholders who will be affected by the decision of the value of taking that decision, before encouraging policy-makers to take the decisions. They also noted the importance for stakeholders to know when they will be able to see the first results if decisions are taken now. In addition, they suggested not to offer definitive solutions, but rather show the likely outcome of the different scenarios, as well as to use visuals showing trade-offs.

Regarding specific communication channels, they noted that it might be hard to promote this work on social media, because you need to be able to engage with the materials and their possibilities. Instead, they recommended to reach out to the specific organisations and institutes directly, and to make sure you reach the different groups. For instance, they recommended reaching out to the advisory bodies such as JRC, ICES, FAO, STECF and GFCM so that they can channel relevant information to the European Commission, and contacting EFARO so they can include this in the national advice. For the Advisory Councils, including the fishers in these organisations, they recommended presenting the tools during the General Assembly meetings. Finally, for DG MARE, they advised presenting this work over lunch, or in a workshop like this one.

Additional feedback during the modelling/scenario session

There was some general feedback that emerged during the modelling/scenario exercises, which the EcoScope modelling team should remember if someone commissions some modelling/scenario work. First, participants noted that it would be helpful to have more written information on what the scenarios show. For instance, there were graphs showing the model validation, but it was not clear whether this validation was good or bad. They also advised to include a short narrative explaining the results next to the graphs, and to also add further explanation on what 'Business as usual (BAU)' and 'EBFM' means in the scenario and modelling context. In addition, participants advised that for the 'reader' it would be helpful to have an indication of which sequence to follow when looking at the results: since there is a lot of information, it would be useful to have guidance on the order in which the results should be looked at and what to focus on. The stakeholders also highlighted that there were too many acronyms, that it was not clear what some icons meant, and that it is very important to be clear on the units of the graphs: either write these out fully, or include the information in the short narrative. For instance, in one visual, the unit was 't' and it was not clear whether this referred to tonnes or time. Finally, they noted that the colour scheme was sometimes difficult to interpret, for instance red was associate with good outcomes, even though it is commonly associated with bad outcomes.

The second topic that emerged is that participants wanted more information on how the commissioning process would work, for instance, what would be commissioned, what results they would receive, and who would be the target audience. They also wondered whether the results would be publicly available or restricted, and if so who could access the results. The modelling team clarified that there will be a process with the stakeholders to define what they need, which scenarios to run and what kind of graphics they would need, e.g. just a nice graphic or also numbers, etc. The outputs will then be tailored to the needs of the stakeholders. The modelers also highlighted that one of the hardest tasks of modelling is to condense all the outputs of the models into a number or a figure that makes sense and is meaningful to a non-modeler, thus it would be an iterative process. In response, a participant noted that it would be very helpful if the EcoScope team could prepare some guidance on how one could use the EcoScope modelling and scenario work for instance in the government, including how much it would cost and what the process would be.

The third general feedback was that it is very important to use the language of the targeted stakeholders when discussing the outputs. For instance, when discussing this with DG ENV it would need to indicate how and if this will help e.g. descriptor 1 of the Marine Strategy Framework Directive, but DG MARE and JRC will be interested in other policy drivers. Therefore, if you want to be useful for the European Commission, you need to integrate the language of the legislation in your outputs (e.g. Good Environmental Status, Favourable Conservation Status, stocks, etc.). For instance, it was noted that 'European Hake' is not enough information for DG MARE – it would be better to include information on specific stocks of European Hake (*Merluccius merluccius*).

Finally, to help increase trust in the models it would be important to mention the sources of the data that were used to parametrise the models (e.g. fisheries dependent or fisheries independent surveys, etc.).

Figure 2: Plenary session during the stakeholder workshop

4.2 Feedback on the EcoScope Platform

'What do you like about the EcoScope Platform?'

Attendees appreciated the wide range of features, such as automatic coastline selection and area measurement, and valued the ability to see many variables in a single space, as well as to obtain graphs with timelines. Some participants noted that if you have a bit of background in these systems, the Platform is relatively easy to use (particularly with instructions). They appreciated that the Platform has many features and said that once you know the tool it can be very helpful, but they also noted that in order to understand the full functionality you need training and time, which are limited resources.

Participants also identified some areas for improvement. They highlighted the need to clearly distinguish between observational and modelled data, as that makes a difference, and suggested more clarification on the parameters used to generate the data, ideally linked to scientific papers. They also suggested that the Platform could integrate other datasets than just from the Sea Around Us, like MEDITS or ICES server data. In addition, they noted that the names of datasets in the Platform are unclear, and needed to be changed to something understandable. Furthermore, they highlighted that not displaying the units makes it difficult to compare results and suggested to always include units in all graphs.

Some stakeholders found the Platform difficult to understand at times, and differences in usability between Windows and Mac systems were noted, as some controls were not intuitive across both systems. They therefore recommended having more tutorials (e.g. YouTube videos) to support users in navigating the Platform. Participants also highlighted that once datasets are selected, the name of the dataset disappears from the title, which they recommended to change. They also noted that it would be very useful to enable searching for species using common names in addition to the Latin names. However, the EcoScope team replied that there are many different common names for the same species across countries, and Latin names are more consistent. Finally, it was suggested to provide a feedback options and add disclaimers (e.g. like they do in Global Fishing Watch).

'Who do you think would benefit most from using the EcoScope Platform?'

The EcoScope Platform was seen to be most valuable for the research community, because it is useful for scientists to have all relevant data in one platform, and they would be willing to invest time in understanding the Platform if they believe it will be valuable to their work. Participants noted that policy makers are unlikely to use the Platform due to lack of time, but that it might be interesting for consultants who are asked to give advice, or for lower-level staff in policy or local governance, if there is relevant expertise in the team.

'What are your thoughts on future projects that could build on or further develop this work?'

Participants noted that there is a lot of potential for the Platform, but that there is a need to align it with legal frameworks. They advised to speak to the advisory bodies of policy makers (e.g. JRC, ICES, GFCM, etc.) to link the Platform with their work and include the data they use, since policy makers will always refer back to that. The participants further suggested that future developments should include ecosystem services and socio-ecological features to increase the Platform's relevance. For long-term sustainability and wider uptake, the EcoScope Platform should be integrated with existing systems like EMODnet, Copernicus and the EU DTO to avoid duplicating effort.

4.3 Feedback on the EcoScope Toolbox

'What do you like about the EcoScope Toolbox?'

Participants appreciated the simpleness of the EcoScope Toolbox, highlighting the visually nice presentation of the information and its user-friendliness for stakeholders. They noted that it is easier to play with than for instance the EcoScope Platform or the MSP Challenge, and that although there is less information, it is easier to understand. They also appreciated the feature to standardise the catch, which provides a good indication of the sustainability of the catch.

A few improvements were recommended. The stakeholders advised to make the sustainability wheel more interactive, so that users can click on the individual parameters to view their corresponding graphs. They also requested making the labelling and individual values clearer, for instance by allowing users to hover over the individual parameters to view values and full names, instead of having to find it in separate plots and menus. In addition, they advised to replace the acronyms of the sustainability wheel with full terms to improve understanding.

The stakeholders asked for better visualisations on who benefits or loses in the different scenarios by improving the ability to compare them. They noted that this could be done by having toggle bars, or by displaying them in side-by-side tabs (without needing to make print-screens). Another suggestion was to provide summary tables, ideally with some interpretation support (e.g. like Chat GPT). In addition, they suggested to have either a built-in function to calculate differences between scenarios, or a simpler way to export data to Excel for further analysis.

Additional improvements requested included adding a reset option to the graphs and addressing inconsistencies in the graphs and values of the biodiversity index, which participants spotted. One participant also noted that it would be nice to understand why some values, which you would expect to change between scenarios, remained constant over time. The stakeholders also highlighted the need of a clearer guidance on how to upload their own custom data. In response to this, the EcoScope Toolbox team explained that they will prepare a user guide with all indicators, including their meaning, weight, and step-by-step instructions on how to upload datasets. Finally, the potential misuse of data was discussed with the suggestion that perhaps having a pop-up with a warning could help.

'Who do you think would benefit most from using the EcoScope Toolbox?'

Participants suggested that the Toolbox could be valuable for managers, decision makers and EU Member States, if they can input their own data. They noted that for these stakeholders as a learning experience, it might be interesting to play with different stock numbers and see how the indicators change over time.

'What are your thoughts on future projects that could build on or further develop this work?'

The stakeholders said that the Toolbox has lots of potential, but that it is important to align it with legal frameworks. This could be done by using indicators which policy makers use and which reflect the language in relevant legislations. In addition, it was reiterated that policymakers tend to rely on their advisory bodies, therefore maintaining a link with these groups is important. Participants also described the Toolbox as especially useful for stakeholders' engagement.

4.4 Feedback on the MSP Challenge Simulation Platform

'What do you like about the MSP Platform?'

The stakeholders said that the MSP Platform is a great tool, and that it is very nice to see the effects of the actions in different areas. They also appreciated the ability to visualise different layers and all the modelling involved in the background, noting that this tool is more complex, but that it also allows you to go into more detail. However, they advised that before meaningful use, it is very important to also display uncertainty, be clearer on the assumptions behind the models, and provide information on the source of data and how it was validated and calibrated. They said that it is important to understand what causes the results, for instance, why there is a biomass increase. They noted that understanding these changes and not having a 'black box' will be critical if the tool is to be used for decision-making. The EcoScope partners clarified that the MSP Challenge Platform already provides information on all data and models used in the knowledge base pages (https://knowledge.mspchallenge.info) and community wiki (https://community.mspchallenge.info).

On the visualisation, it was noted that it can be a bit overwhelming when all elements are displayed at once. It was suggested to have the option to, for instance, first click on the MPAs and only see the impact of those, and then add complexity if needed. It was also noted that it would be nice to be able to expand individual graphs to see them in full screen and to hover over the plots to see precise numbers. Some

participants also found it confusing that sometimes the colours of the graphs were the same as the colour of a particular country, but the results were unrelated to that country (e.g. there were green graphs that were unrelated to the green team).

Other comments were that sometimes it is difficult to know what the different icons mean, and that the usability in selecting the time range could be improved. It was also noted that it was not immediately clear during the exercise that there was no increase/decrease in the values between 2020-2030, because the graphic showed the average for those years, and they suggested that this could be explained better upfront.

Overall, participants advised creating more tutorials to support users in navigating the features and layers of the MSP Challenge Platform, given its complexity, and they also suggested to provide a feedback option and adding disclaimers (like is done in Global Fishing Watch).

'Who do you think would benefit most from using the MSP Platform?'

Participants described the MSP platform as valuable for marine spatial planners at both regional and national levels, as well as for Member State authorities who are required to update their MSP plans under frameworks like the Ocean Pact and the MSP Directive. They also noted it could support the European Commission in implementing policy and guiding countries through MSP updates. In addition, it was noted that the MSP platform may benefit students and experts from various fields, especially as a tool to facilitate communication in meetings. Furthermore, participants highlighted the platform as a great opportunity for collaboration between northern and southern Europe in marine spatial planning activities.

Overall, participants saw the MSP Platform as a great tool for education and stakeholder engagement but not advanced enough for it be used in real decision-making. They reiterated that including uncertainty and being able to understand what is causing the results is critical for it to be used in decision-making.

'What are your thoughts on future projects that could build on or further develop this work?'

Participants noted that the MSP Challenge could be very valuable for developing sea basin strategies, which are increasingly being prioritised by the European Commission over individual country plans. For instance, the MSP Challenge could assist the Greater North Sea Basin Initiative (GNSBI) in creating a sea basin plan for the North Sea, considering fisheries, windfarms and MPAs. In addition, the stakeholders suggested that the MSP Challenge tool could be valuable for MPA design, and highlighted the benefits of involving organisations like ICES and its Framework for Ecosystem-Informed Science and Advice (FEISA). The stakeholders suggested that holding dedicated workshops would help managers become familiar with and begin using the tool effectively. However, the stakeholders questioned whether the results would be trustworthy enough to be used in real-case scenarios. The EcoScope team clarified that one can look at real data behind the scenarios (although it might not be the most up to date) by using the information icon. After the simulation one sees the simulated results. A final question was whether the MSP Challenge

will also be available as a web application and the EcoScope team clarified that, for now, that will not be the case.

Figure 3: MSP Challenge Simulation game workshop

5 Conclusion and next steps

Overall, the workshop and the EcoScope tools were very well received by the workshop participants. The stakeholders noted that they learned a lot about the tools, and the EcoScope team received very valuable feedback. This feedback will now be implemented as much as possible by the developers of the tools.

One general question from the participants was who will take care of the tools after the EcoScope project finishes. The EcoScope team clarified that the EcoScope Toolbox and the Academy [6] (EcoScope's educational pillar with self-study courses on EBFM) will remain active for at least five years. However, EcoScope still needs to find a solution for the longevity of the EcoScope Platform. As for the models, each modeller retains ownership, and they are shared through Ecopath. The MSP Challenge Platform will remain available for download at https://community.mspchallenge.info including all materials from the knowledge base. All features developed for EcoScope in the MSP Challenge Platform will be maintained also in further developments of the platform.

[6] https://ecoscope.getlearnworlds.com/

6 Annex I – Workshop participants

Name:	Organisation:	Country of residence:
Sara Söderström	Baltic Sea Centre, Stockholm University	Sweden
Daniel Mitchell	BirdLife Europe & Central Asia	Belgium
Noel Holmgren	EFARO	Sweden
Céline Frank	European Commission - DG MARE	Belgium
Isabella Hannen	European Commission - DG MARE	Belgium
Nicolas Sturaro	European Commission - DG MARE	Belgium
Riccardo But	European Commission - DG MARE	Belgium
Zoi Konstantinou	European Commission - DG MARE	Belgium
Nikos Zampoukas	European Commission - DG RTD	Belgium
Chiara Piroddi	European Commission - Joint Research Centre	Italy
Michael Gras	European Commission - Joint Research Centre	Italy
Jordi Ribera-Altimir	ICATMAR / ICM-CSIC	Spain
Guy Rubinstein	Israeli Ministry of Agriculture and Food Security	Israel
Juan Ronco Zapatero	KULEUVEN	Belgium
Kateryna Urbanovych	North Sea Advisory Council	The Netherlands
Josephine Woronoff	Pew Charitable Trusts	Belgium
Yosr Ammar	Swedish Museum of Natural History	Sweden
Athanassios Tsikliras	EcoScope	Greece
Gideon Gal	EcoScope	Israel
Hillevi Boerboom	EcoScope	The Netherlands
Magali Gonçalves	EcoScope	The Netherlands
Marcela Nascimento	EcoScope	Germany
Santiago de la Puente	EcoScope	Norway
Sheila Heymans	EcoScope	Belgium
Ana Rodriguez	EcoScope	Belgium
Fernanda Bayo Ruiz	EcoScope	Belgium
Lizzie Crudgington	Blue Minds Design (Professional Facilitator)	Switzerland
Ángel Muñiz Piniella	European Marine Board (Facilitator)	Belgium
Paula Kellett	European Marine Board (Facilitator)	Belgium

7 Annex II – Workshop agenda

EcoScope 2nd Stakeholder Workshop Agenda

Tuesday, 27 May 2025

Panorama room, KBR venue (Mont des Arts 28, 1000 Brussels)

09:00 - 09:30	Arrivals and welcome coffee
09:30 - 09:45	**Opening welcome,** objectives and overview for the day
09:45 - 10:45	**A refresher on the EcoScope project**, integration of feedback received since the first stakeholder workshop, major achievements and challenges for the future (presentations with Q&A)
10:45 - 11:15	Coffee break
11:15 - 12:30	**Active exploration of the results of Ecoscope's modelling work** - looking into the outputs of some sample scenarios to understand the models' scope and capabilities (small group discussion and plenary discussion) - reflecting on (a) What you find most exciting about EcoScope's modelling / scenario work; (b) who you think needs to know more about EcoScope's modelling / scenario offering; and (c) ways to spread the word.
12:30 - 13:30	Group photo and lunch break
13:30 - 15:30	**Active exploration of the Ecoscope Toolbox, Platform and the Marine Spatial Planning Challenge Simulation** - completing guided tasks to explore these online tools at computers in the room (small group work and plenary discussion) - reflecting on (a) What you like about each tool; (b) who you think each tool would be of greatest interest and value to; and (c) thoughts on future projects that could pick up and/or further develop this work.
15:30 - 15:45	Coffee break
15:45 - 16:10	**Stakeholder reflections on Ecoscope's offerings** Debriefing the tools, clarifications and discussion
16:10 - 16:30	**Thanks, next steps, and closing** - including deep uncertainty, linking up with other projects / (E)DTO and sustainable solutions for the longevity of the Platform
16:30 - 16:45	Departures

8 Annex III – Discovery activities questions & answers

8.1 Modelling scenarios results questions & answers

Modelling work

Access the slides with selected modelling scenario work results via:
https://drive.google.com/file/d/17ogvPtT1kQhOT7LpXtiTo5KstNBxH3IO/view?usp=drive_link

No.	**Slide number**	**Question**	**Answer**
1.	**2**	Which fishing policy has the greatest impact on Cod biomass and is also not sustainable under climate change?	• Business as usual
2.	**4**	Which species is projected to crash under CC regardless of fisheries policy?	• Herring
3.	**5**	Which is the most indirectly affected species by overfishing on herring?	• Harbour porpoises
4.	**8**	Under which future conditions will Angelfish catch decline the most?	• Scenarios 6 & 9 (50% reduction in fisheries)
5.	**12**	Which group is impacted by CC?	• Climate change suppresses native invertebrates but does not affect the aliens.
6.	**14**	In which area did the MPAs have the greatest positive impact on Herring?	• In the south-east region
7.	**18**	Which group will benefit most from the MPAs	• Large pelagic fish
8.	**19**	The catch of which group will increase most? Under which two scenarios will it increase most?	• Shrimps • It will increase most with the Greek and Greek+turkey MPAs
9.	**20**	In which regions do we see the largest increase in biomass?	• South-west and north-east areas
10.	**22**	Can you assess the importance of connectivity of MPAs from the results?	• From scenario 2 it seems to play an important role

8.2 EcoScope Platform Discovery Activity

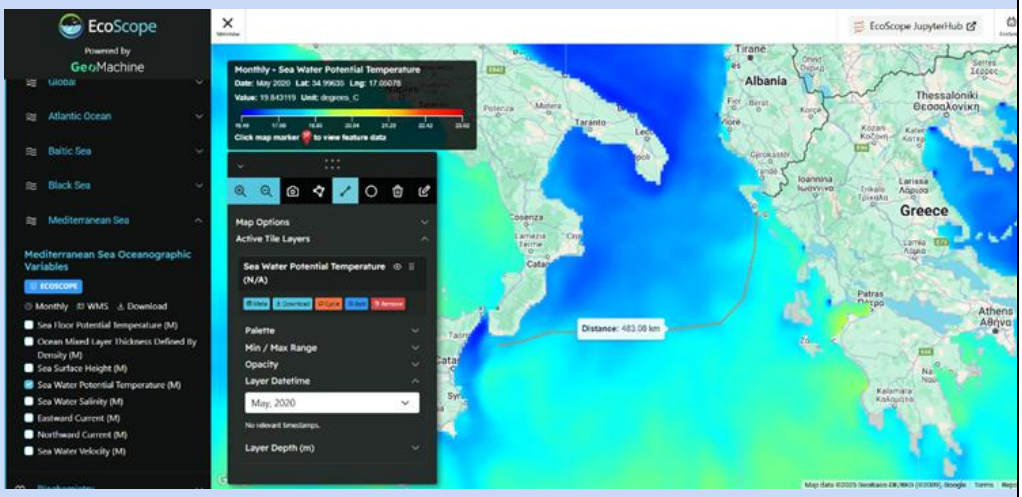
EcoScope Platform

Please time 20 minutes for this part

Access the Platform via: https://data.ecoscopium.eu/

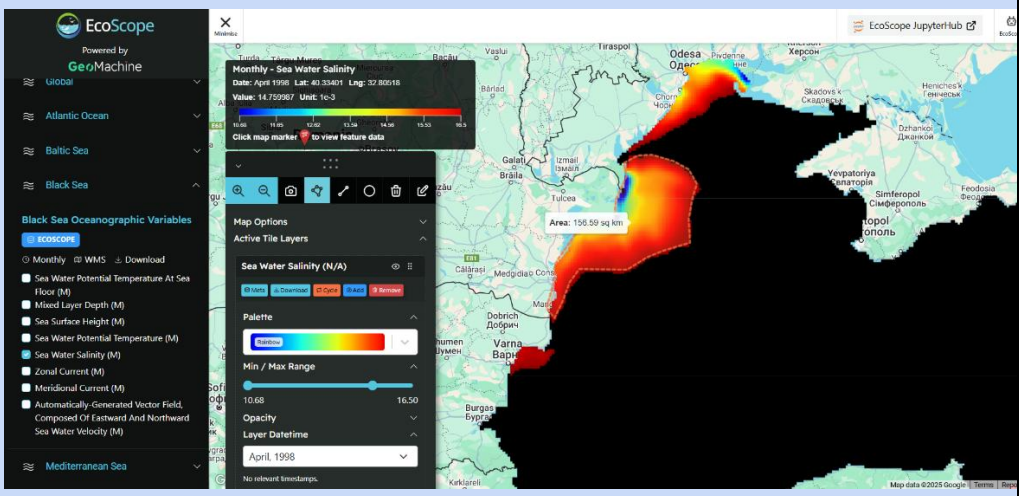
Exercise 1:

Hydrography: Thermal Ocean Fronts in the Mediterranean Sea	
Thermal ocean fronts are areas with strong temperature gradients, i.e., changes in sea surface temperature along a line. In May 2020, a thermal front was formed between the warmer south-eastern Mediterranean and the cooler north-western area. These thermal fronts are important for fisheries, because many fish species (such as tuna, sardines and anchovies) actively seek out these fronts due to enhanced biological productivity.	
Question 1	**How long (in Km) is the thermal ocean front between the southern Adriatic and Levantine Seas?** **(ANSWER: approx. 480 - 500 km)**
To answer this question	Map the spatial distribution of sea surface temperature, identify the frontal zone, measure its length, - take a screenshot of the map and upload your screenshot - along with your answer - to your team's google doc.
Steps:	1. Zoom in/out and drag the map so that the Mediterranean Sea is visible. Note: You can zoom in and out with the scroll of the mouse and change the location shown in the map by clicking on any point and moving the mouse. 2. From the Menu, please select **Physics** -> **Mediterranean Sea** -> in the oceanographic variables' menu, please choose **Sea Water Potential Temperature**. 3. The sea surface temperature distribution map is shown. From the **Map Manager** please select the **Active Tile Layers** -> **Sea Water Potential Temperature** -> **Layer Datetime**. Select the date to illustrate the parameter of interest -> **May 2020**. Note: You can move the window of the Map

	manager by clicking on the top of the window and dragging it with the mouse. 4. Now **zoom into the Adriatic Sea**. The front appears between the dark blue and the light blue colour, from Sicily to Corfu (between the southern Adriatic and Levantine Seas). To measure the frontal length -> From the Toolbox of the Map Manager please select the **LINE button** -> draw the line along the frontal zone and double click at the final point -> to measure the frontal zone length hover the mouse over the line. 5. Optional: You can now change the date to December 2019 to see the difference in temperature and thermal front formation.
Result	 **ANSWER: approx. 480 - 500 km**

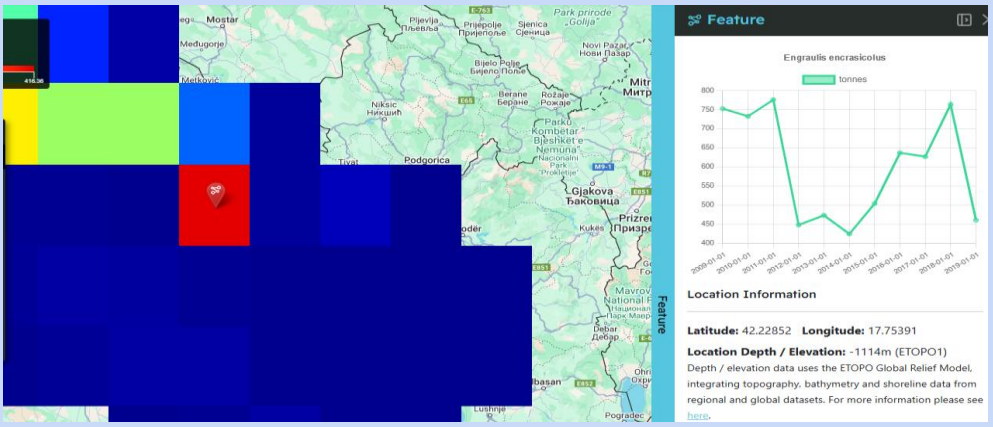
Exercise 2:

Hydrography: The Danube River Plume Area in the Black Sea	
River plumes are areas where freshwater spreads over seawater. Plumes induce strong salinity gradients and can also attract commercial fish. The Danube river plume is important for fisheries because of its nutrient-rich waters, and because it provides ideal conditions for spawning and juvenile development, and it is an important migratory route for species such as the sturgeon.	
Question 2	**What was the area (in square km) of the river plume zone of the Danube (with salinity values between 10.68 to 16.50 psu) in the NW Black Sea in April 1998?** **(ANSWER: Approx. 160 square km)**
To answer this question	Map the spatial salinity distribution, identify the river plume area, take a screenshot of the map and upload your screenshot - along with your answer - to your team's google doc.
Steps	1. **Refresh the page** by clicking enter in the URL field to remove the previous layers. 2. Zoom in/out and drag the map so that the Black Sea is visible. 3. From the Menu, please select **Physics** -> **Black Sea** -> in the oceanographic variables' menu, please choose **Sea Water Salinity**. The sea surface salinity distribution map is shown 4. **Zoom into the northern part of the Black Sea.** The Danube plume is visible along the border of Romania and Ukraine. 5. From the **Map Manager** please select the **Active Tile Layers** -> **Sea Water Salinity** -> **Layer Datetime**. Select the date to illustrate the parameter of interest -> **April 1998**. The plume of water appears bordered by the yellow zone. 6. To focus on the plume area -> From the **Toolbox of the Map Manager** please select the **Min/Max Range option** -> limit **salinity values** between **10.68 to 16.50 psu** -> Areas with salinity values outside this range are turned into black -> to measure the area covered by the plume zone of the Danube river select the **AREA** button from Toolbox of the map manager and delineate the

	plume zone -> when finished, double click at the final point -> The plume's area is shown when hovering the mouse over the area.
Result	 **ANSWER: Approx. 160 square km**

Exercise 3:

Fisheries: The temporal variability of anchovy catches in the Adriatic Sea	
Studying the temporal change in the catches of European anchovy populations is important to improve the robustness of stock assessment and sustainable exploitation.	
Question 3	**What was the change in anchovy catch in the Adriatic Sea (at coordinates Lat 42.2 and Lon 17.7) between 2018 and 2019?** **(Answer: ~300 tonnes)**
To answer this question	Map the spatial distribution of the European anchovy (*Engraulis encrasicolus*) in the Adriatic Sea, produce a graph showing the temporal variability of fish catches at the

	specified location, take a screenshot of the map and upload your screenshot - along with your answer - to your team's google doc.
Steps	1. Refresh the page 2. Zoom in/out and drag the map to see the Adriatic Sea. 3. From the Menu, please type on the **Machine Search Bar** the species of interest -> ***Engraulis encrasicolus*** -> Please select the **Sea Around Us Catches per Species for Mediterranean** dataset and click on the ***Engraulis encrasicolus*** button. 4. The spatial distribution of the species catches in the area of interest appears on the screen. **Zoom into the red quadrat** showing the highest catch **in the Adriatic Sea** and click in the middle of the quadrat. Click again on the selected point to see the time series of the catch. 5. Hover over the catch values of 2018 and 2019 to calculate the difference in catch between the two years.
Result	 **Answer: ~300 tonnes**

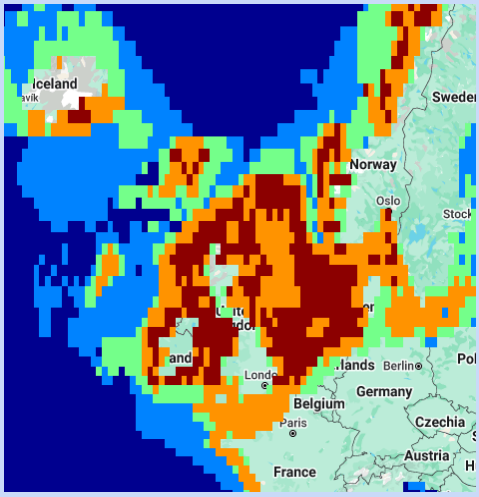
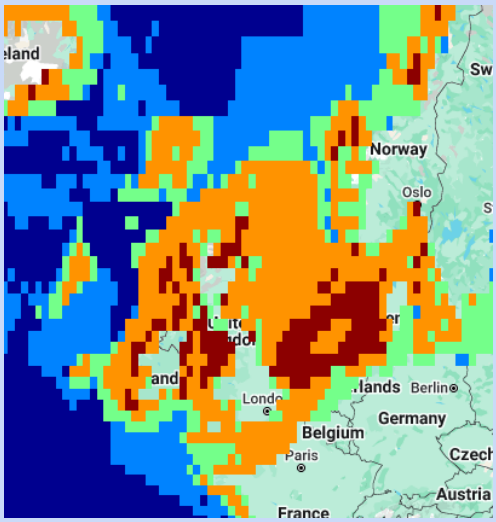
Exercise 4:

Fisheries: Expected changes in distribution of the sandeel in the North Sea with climate change (RCP 8.5 scenario)

Sand eels (*Ammodytes marinus*) are fished commercially in the North Sea, but they are also an important food source for commercial fish stocks, seabirds, and marine mammals, thus playing a key role in both fisheries and ecosystem health.

The climate change RCP 8.5 scenario is the business as usual/worst case scenario, which assumes continued growth in greenhouse gas emissions with no significant mitigation

Question 4	**How is the distribution of the sand eel in the North Sea expected to change under the climate change assuming business as usual/worst case scenario (also known as scenario RCP 8.5)?** Note: The visualisations show how many models predict that the species will be present. **(Answer: It is likely that sand eel will be less present in the northern half of the North Sea with that climate change scenario: less models predict that it will be present there.)**
To answer this question	Map the historical distribution of the sand eel and the predicted one with climate change RCP 8.5 scenario, take a screenshot of each distribution in the North Sea and upload your screenshot - along with your answer - to your team's Google doc.
Steps	1. Refresh the page 2. Zoom in/out and drag the map to see the North Sea 3. On the **Machine Search Bar** -> please type the species of interest (***Ammodytes marinus***) -> Please select the following two datasets: **CNR ENMLR Ensemble Historical Fish** (to see the historical distribution) and **CNR ENMLR Ensemble RCP 85 Fish** (to see the predicted distribution with that climate change scenario)**.** For each dataset, click on the ***Ammodytes marinus*** button. 4. In the Map Options menu click on the **Meta button** of each layer to see the metadata and which layer was which. 5. You can toggle between the two layers by **clicking on the layer view/hide button**: the eye next to the layer's name.

	(Note: the distributions can also be compared by creating a dashboard but in the interest of time we will not do that in this exercise)
Results	Historical distribution:  Distribution with worst case climate change scenario:  **Answer: It is likely that sand eel will be less present in the northern half of the North Sea with that climate change scenario: less models predict that it will be present there.**

8.3 EcoScope Toolbox Discovery Activity

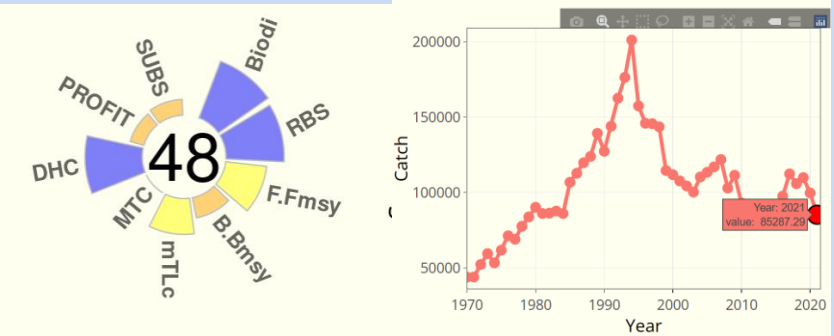
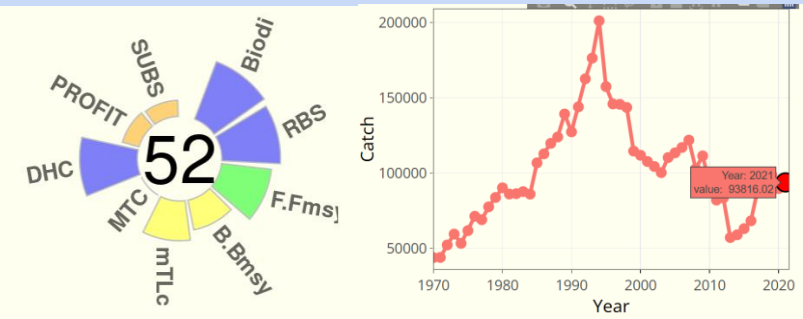
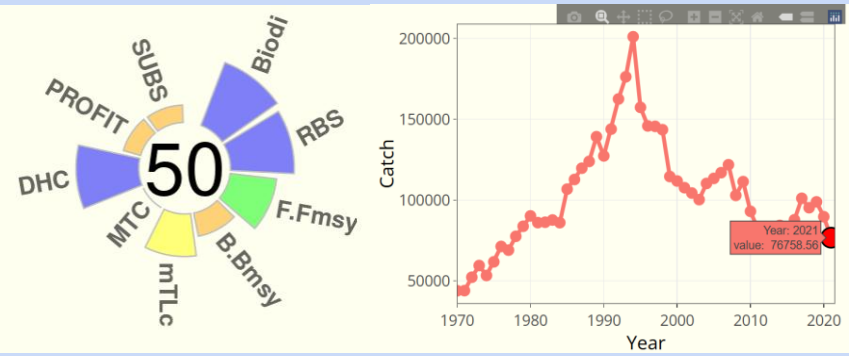
EcoScope Toolbox

Please time 20 minutes for this part

Access the EcoScope Toolbox with the pre-loaded scenarios via this link:
https://marefishlab.shinyapps.io/ECOSCOPE_MESSI-Scenarios/

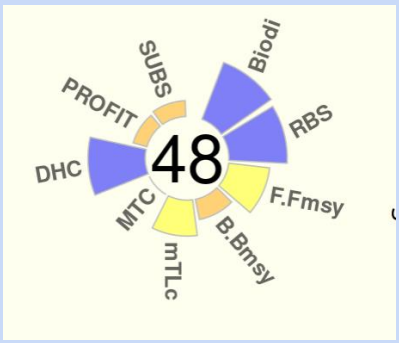
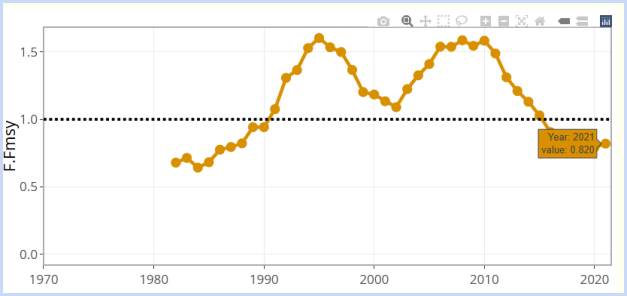
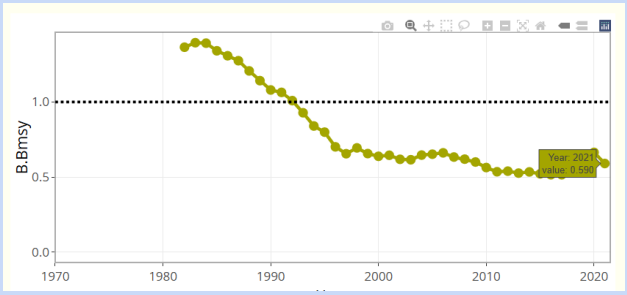
Exercise 1:

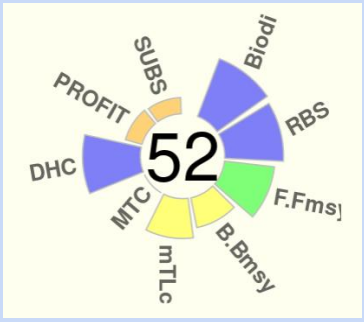
Management aim: improving catch while ensuring a healthier ecosystem	
Question 5	**Which scenario (between sc 1 and 2) does better at improving catch while ensuring a healthy ecosystem, compared to the business as usual scenario (sc 0)?** **(Answer: scenario 1, i.e. reducing fishing effort, does the best: it has the highest MESSI score and the highest catch).**
To answer this question	Compare the sustainability wheel (MESSI) scores and the catch of both scenarios with the baseline scenario, take a screenshot of each and upload it - together with your answer - to your team's google doc
Steps	1. In the **Inspect input** tap, select **Scenario 0** 2. Click on the **score plot tap** and check (i) the total catch from the **Catch/Landings graph** in 2021, and (ii) the sustainability scoring wheel (**Index score**) below. Take screenshots of both and paste it into your team's google doc along with the values for 2021. 3. Note: The score in the middle of the wheel represents the **Marine Ecosystem Sustainability Scoring Index** (**MESSI** - more info on MESSI is given on the left column of the page). For more information on the individual indicators, you can click on the **Time series plots** tap. 4. Do the same for scenario 1 and 2 (select them in the score plot tap and take a screenshot and note of the catch and sustainability scoring index in 2021).

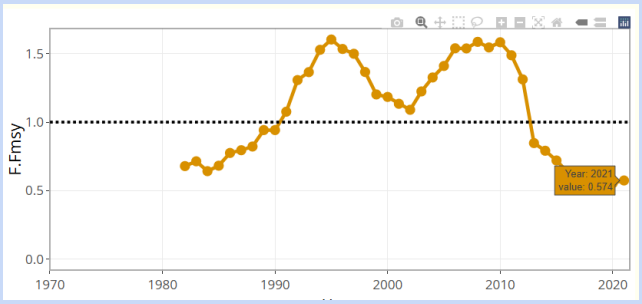
	5. Compare the catch and MESSI scores of the three scenarios to answer the question.
Results	**Answer scenario 1, i.e. reducing fishing effort, does the best: it has the highest MESSI score and the highest catch.** Scenario 0: score 48, catch: 85,287 tonnes  Scenario 1: score 52, catch: 93,816 tonnes  Scenario 2: score 50, catch: 76,758 tonnes 

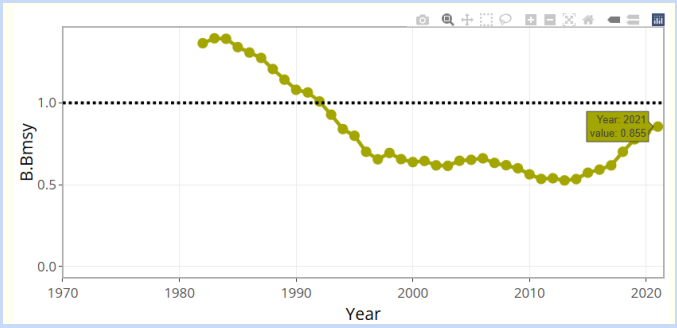
Exercise 2:

Taking a closer look at the indicators of the sustainability wheel	
Questions 6 & 7	**In exercise 1, you identified which scenario (from 0-2) had the highest MESSI score. Now have a closer look at the indicators in the sustainability wheel.** **Q6: Which two indicators improved the most in scenario 1 compared to scenario 0 and what were their values?** **(Answer: The indicators that improved most are F.Fmsy and B.Bmsy. F.Fmsy in sc0 was 0.82 and in sc1 0.574. B.Bmsy was 0.59 in sc0 and 0.855 in sc1)** **Q7: What do these values mean?** **(Answer: F/FMSY values lower than 1 indicate sustainable fishing, so in both cases the fishing was sustainable, but in sc1 it was more sustainable than in sc0. B/BMSY assesses the stock biomass as a proxy of the health of a stock. B/BMSY values higher than 1 indicate good stock status (stock biomass capable of producing MSY), values around 1 indicate a stock at optimum sustainable level, and values lower than 1 indicate bad stock status, potentially overfished. In both cases the values were below 1, but in sc1 it was closer to 1, meaning that the biomass was better).**
To answer this question	Compare the indicators of both sustainability scoring wheels, check the specific values of these indicators in the time series plots tap, read the description of the indicators to understand their meaning, and upload the screenshots - together with your answers - into your team's google doc.
Steps	1. In the **Score plot tap**: Compare the individual indicators of the sustainability wheels in scenario 0 and scenario 1 and identify the two that have improved most (change in colour). 2. In the **Time series plots tap**: go to the respective indicator time series and find the values of those indicators in 2021 by hovering over the line.

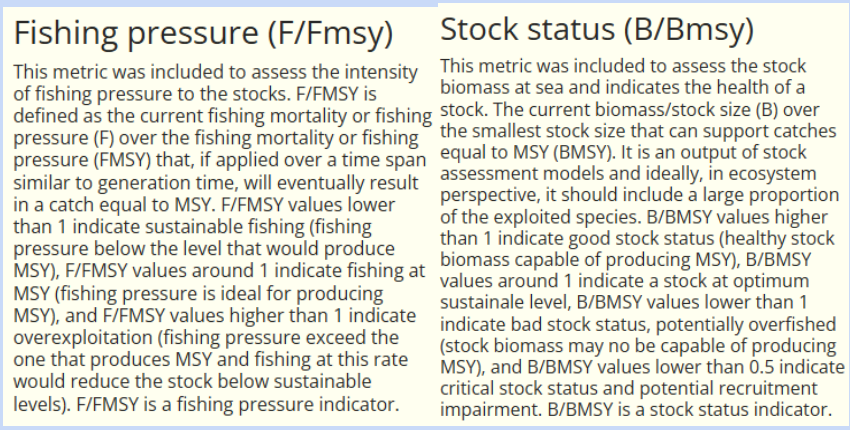
	3. Read the description of the indicators in the time series plots tap to understand what the values mean.
Results	**Answer Question 2: The indicators that improved most are F.Fmsy and B.Bmsy. F.Fmsy in sc0 was 0.82 and in sc1 0.574. B.Bmsy was 0.59 in sc0 and 0.855 in sc1.** Scenario 0: F.Fmsy: 0.82; B.Bmsy: 0.590    Scenario 1: F.Fmsy: 0.574; B.Bmsy: 0.855





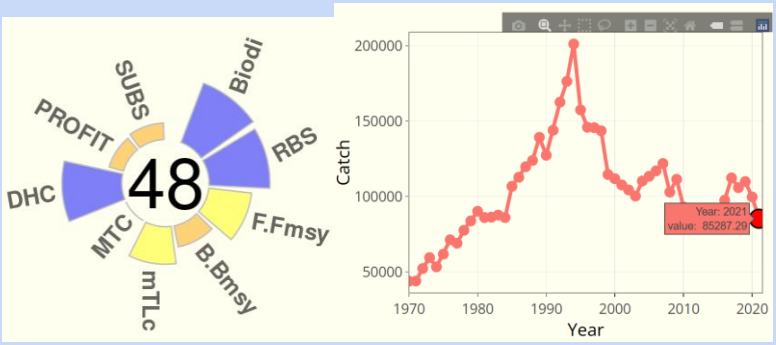
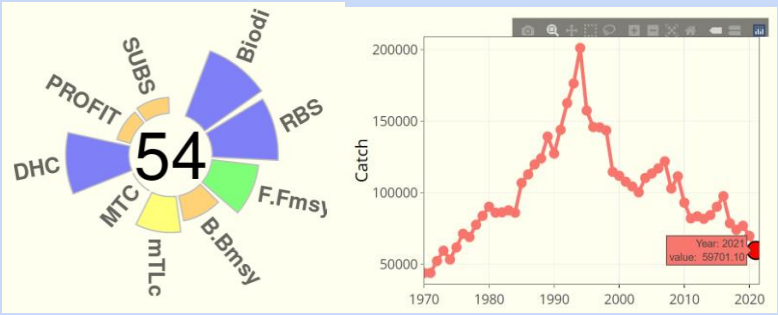


Understanding meaning of values:

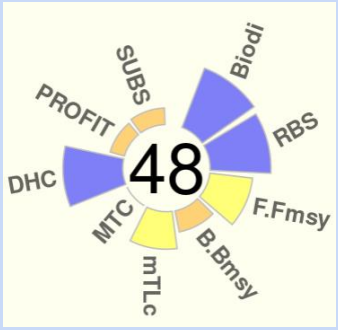
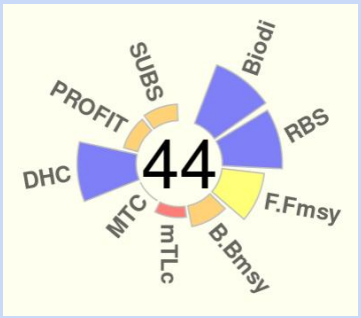
	 **Answer Question 3:** **F/FMSY values lower than 1 indicate sustainable fishing, so in both cases the fishing was sustainable, but in sc1 it was more sustainable than in sc0.** **B/BMSY assesses the stock biomass as a proxy of the health of a stock. B/BMSY values higher than 1 indicate good stock status (stock biomass capable of producing MSY), values around 1 indicate a stock at optimum sustainable level, and values lower than 1 indicate bad stock status, potentially overfished. In both cases the values were below 1, but in sc1 it was closer to 1, meaning that the biomass was better.**

Exercise 3:

Assessing the effect of banning bottom trawling on the ecosystem	
Question 8	**What is the effect of banning bottom trawling on the ecosystem?** **(Answer: The ecosystem status improves, but the catch declines)**

To answer this question	Compare the MESSI score of scenario 3 with the baseline scenario, take screenshots and upload it - together with your answer - to your team's google doc
Steps video	1. In the **Inspect input** tap, select **Scenario 3** 2. Click on the **score plot tap** and check (i) the total catch from the **Catch/Landings graph**, and (ii) MESSI score (**Index score**) below. Take screenshots of both and paste it into your team's google doc along with the values for 2021. 3. Compare these values with the ones for scenario 0 obtained in the previous question
Results	**Answer: The ecosystem status improves, but the catch declines** Scenario 0: score 48, catch: 85,287 tonnes  Scenario 3: score 54, catch: 59,071 

Exercise 4:

Impact of increased sea surface temperature	
Question 9	**What is the main impact of increased sea surface temperature?** **(Answer: The biggest impact is that the indicator mean trophic level of the catch worsens meaning that the average size of species being caught is decreasing).**
To answer this question	Compare the indicators of the sustainability wheel score of scenario 5 with the baseline scenario, take screenshots and upload it - together with your answer - to your team's google doc
Steps	1. In the **Inspect input** tap, select **Scenario 5** 2. Click on the **score plot tap** and make a screenshot of the sustainability scoring wheel (**Index score**). Paste it into your team's google doc. 3. Paste the index score for scenario 0 below 4. **Compare** the state of the individual indicators in both scenarios to assess the main consequences of the temperature increase.
Results	**Answer: The biggest impact is that the indicator mean trophic level of the catch worsens meaning that the average size of species being caught is decreasing.** Scenario 0:  Scenario 5: 

8.4 Marine Spatial Planning Challenge Simulation Discovery Activity

Marine Spatial Planning Challenge Simulation

Please time 30 minutes for this part

Briefing

Your role today	(1) First **watch a** short video (2 minutes) explaining what the country teams (Greece - green and Cyprus - orange) have been doing in the MSP Challenge Simulation Platform. (2) Then **go into** the MSP Challenge Simulation Platform (https://www.mspchallenge.info/), and respond to a series of questions (see below) by following the prompts provided, and reflect on how well the team is progressing in achieving their objectives.

How well are the country teams progressing with achieving their objectives? Go into the MSP Challenge Simulation Platform to find out.

Part A: The first objective given to the country teams was: "As a country, increase the number of Marine Protected Areas (MPA) in your country / EEZ to reach 30% MPA coverage in your EEZ (including 10% strictly protected coverage (no fishing or other activities)) **by 2030".**

Let's look at the countries are doing collectively. Note: The Eastern Mediterranean Sea region is approx. 750'000 KM2, therefore 30% MPA coverage would be approx 225'000 KM2.

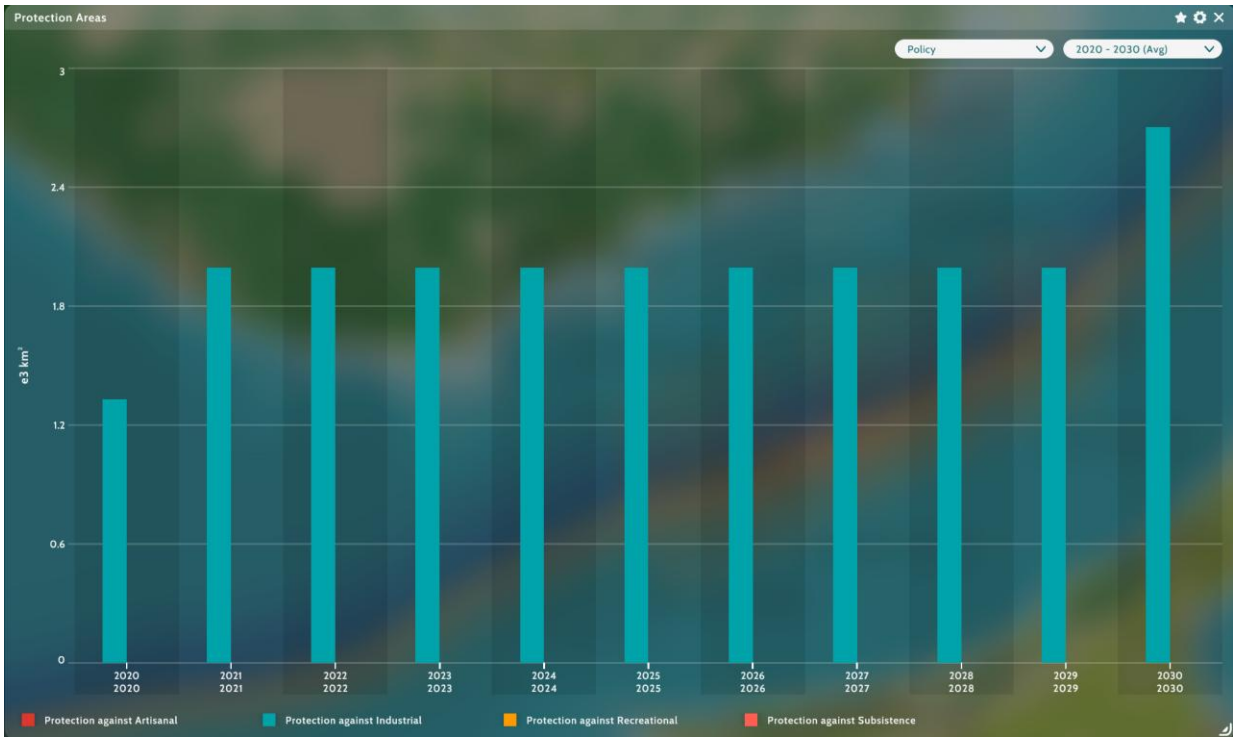
Question 10: Have the plans made by the country teams enabled them to collectively achieve 30% MPA coverage for the Eastern Mediterranean Sea region?

Steps to answer the question:

1. Open the **dashboard**
2. Go to the **ecology tab** in the dashboard (fish icon)
3. Locate the "**Protection Areas**" graph
4. Deselect the policy types "**SPA (Special Protection Areas)**", "**SCI (Special Conservation Interest)**" and "**Both SPA and SCI**"
5. Close each menu by clicking again on the arrow:

6. Move the slider from "Latest / Last 12 months" to "Range" and drag the end of the period marker to the right extreme.
7. Finally move the slider across from months to years.

Take a screenshot of the resulting graph:



What does this tell us about whether the plans made by the country teams enabled them to collectively achieve 30% MPA coverage (approx. 225'000 KM2) for the Eastern Mediterranean Sea region?

[Our answer:

The graph shows that, in 2030, MPA yearly average coverage is around 2.7 e3 km2 (= 27'000 KM2) . This is way under 225'000 KM2 objective (30%).

It is worth noting also that this figure for 2030 may change. We are viewing the yearly average of MPA in KM2 and the simulation is in July 2030 (see the clock in the top right showing the month and year we are seeing the simulation) - halfway through the year.

There is a **seasonal ban** in the buffer zone (counting as MPA for some months of the year) but the year has not ended, and when the ban lifts the MPA area will reduce. Accordingly, the average KM2 for

2030 will also reduce by the end of the year.

Note also that there are only bans for industrial fleets (not other vessel types). As such there are no "strictly protected areas"]

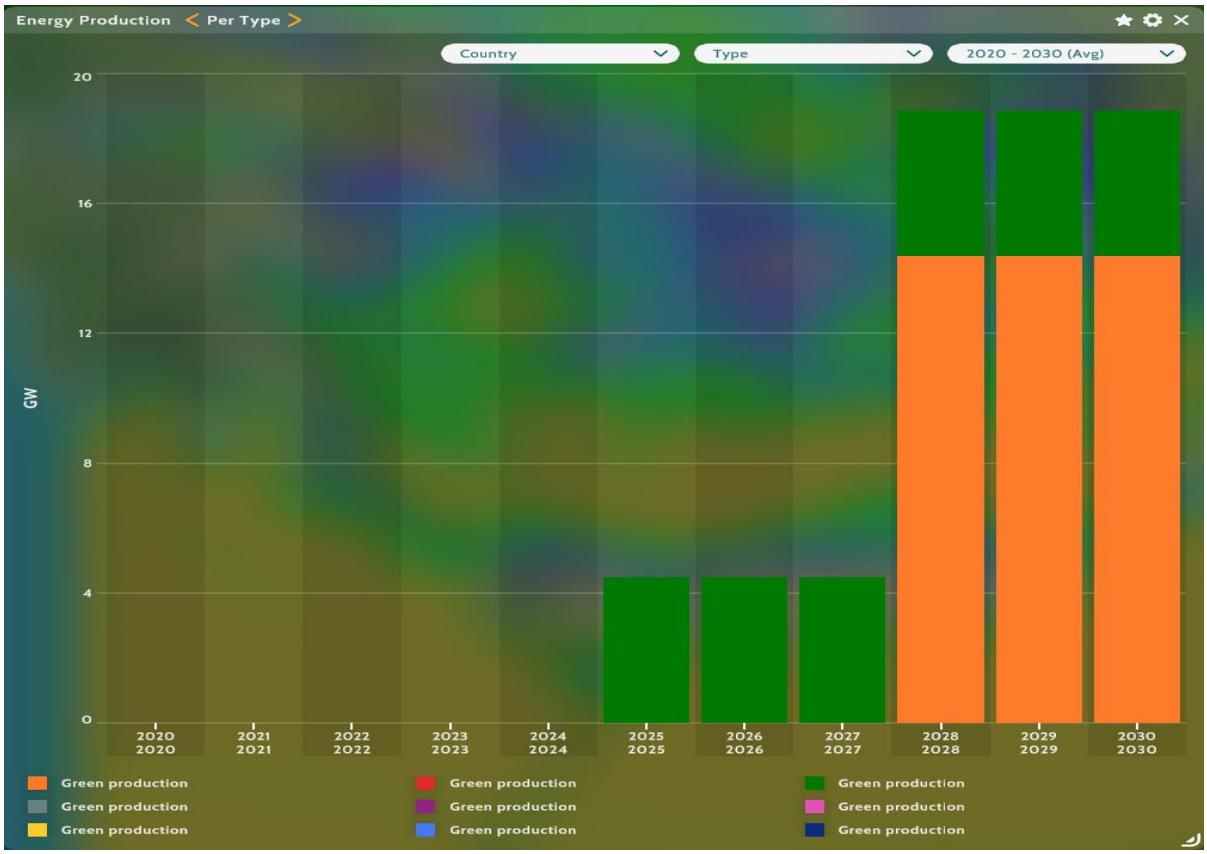
Part B: The second objective given to the country teams was: "To increase offshore windfarm production in your country's waters / EEZ so that, in collaboration with all other countries in the region, you reach 60GW production (per year) for the eastern Mediterranean region by 2030"

Question 11: Have the plans made by the country teams enabled them to collectively reach the 60GW offshore windfarm production target for the eastern Mediterranean region?

Steps to answer the question:

1. Open the dashboard
2. Go to the energy tab in the dashboard (lightning icon)
3. Locate the "Energy Production" graph
4. Keep all countries selected, but under "Type" select "Green Production"
5. Change from "Latest / Last 12 months" to "Range" and drag the end of the period marker to the right extreme.
6. Move the slider from months to years
7. Stack the graphs to see the total energy produced by selecting:

Take a screenshot of the resulting graph:



What does this tell us about whether or not the plans made by the country teams enabled them to reach the 60GW offshore windfarm production target for the eastern Mediterranean region?

[Our answer: Remember the goal was 60GW for the whole region. The graph shows less than 20GW, so the goal for the region was not achieved. However, at this point, only two countries in the simulation had made wind farm plans: the Orange team (Cyprus) and the Green team (Greece). As the simulation goes on and others make plans, this should change.]

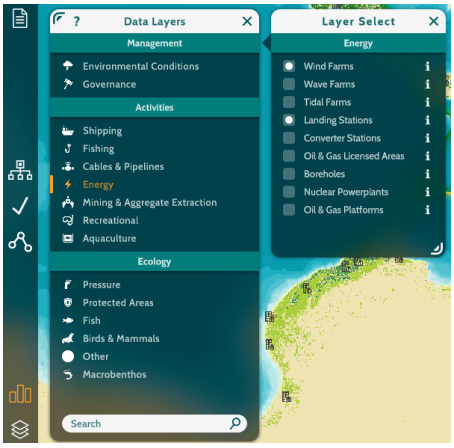
Part B: continued (diving deeper into the Wind Farm detail)

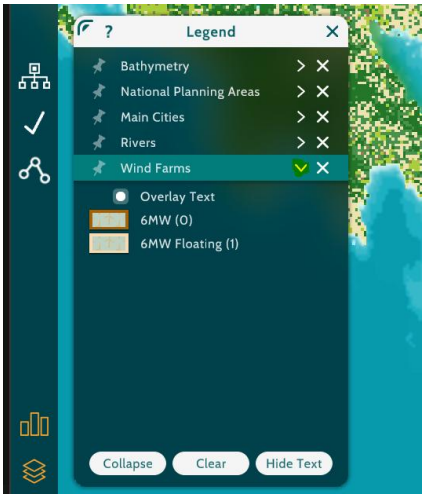
Question 12: How much energy are the wind farms south of Turkey estimated to produce?

Steps to answer the question:

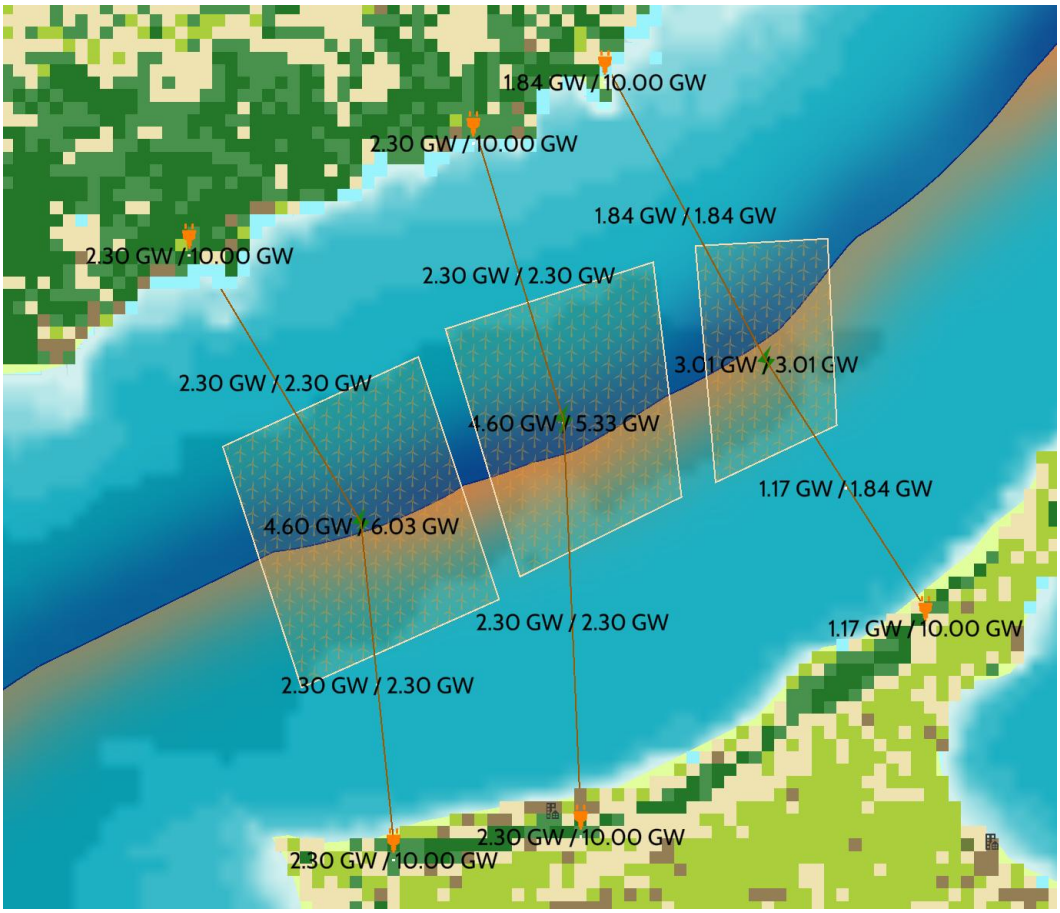
1. To locate the wind farms:
    a. Go to “Data Layers”
    b. Under “Activities” select “Energy”
    c. In the Energy layer, select “Wind Farms” and “Landing Stations”
    d. Now in “Data Layers” under “Activities” select “Cables and Pipelines”
    e. In the Cables & Pipelines Layer, select “Electricity Cables”

    [Expand the legend by clicking on the > arrow next to the layer name]
2. Zoom out completely to see the whole region (use the scroll wheel on your mouse) and click and drag with the right mouse button to move around the map.
3. Then zoom in on the wind farms located south of Turkey until the values for used/full potential of the wind farms appear (in gigawatts - GW).





Take a screenshot of the map showing the windfarms south of Turkey and the values of the used/full potential of the wind farms here in GW, and insert the screenshot here:



We see that the windfarms are transboundary on the border between Turkey (to the north) and Cyprus (to the south). The windfarms have been established by the orange team (Cyprus).

The map shows Used GW / Potential GW at each part of the energy network system. Each part of the renewable energy infrastructure - **wind park**, **cables** and **landing stations** (on land-orange electricity plug) - have a certain capacity (on the right), but may only be using part of it.

Keep in mind that the energy produced has to be brought to shore by cables that also have a limited capacity, in this example the cables total capacity is 2.30 GW for each country, so the wind farm energy used is only 4,60 GW. The rest of the energy is wasted.

Luckily, the landing point can deal with up to 10GW of energy, so that is not a restriction point. But the

landing point can only receive as much energy the cables are transmitting.

What does the figure tell us about how much energy the wind farms - planned by the Orange team - have the potential to produce? (Bonus: And how much is wasted?)

[Our answer:

The three wind farms on the border between Turkey and Cyprus have the potential to produce 6.03 + 5.33 + 3.01 GW (14.37). However, since not enough cables were installed (4*2.3+1.84+1.17), only 12.21 GW can be used. The rest (14.37 - 12.21 = 2.16 GW) is wasted.

Note: in the smallest wind farm to the right, the potential capacity of the two cables is greater than the potential of the park - so in this case the potential of the wind park is the restriction point.]

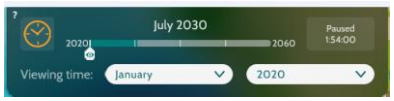
Part C: The third objective for the teams was to find an optimum balance of competing socio-economic concerns (e.g. from fisheries, aquaculture, shipping, oil and gas, offshore wind, cables, recreation, tourism, and conservation)

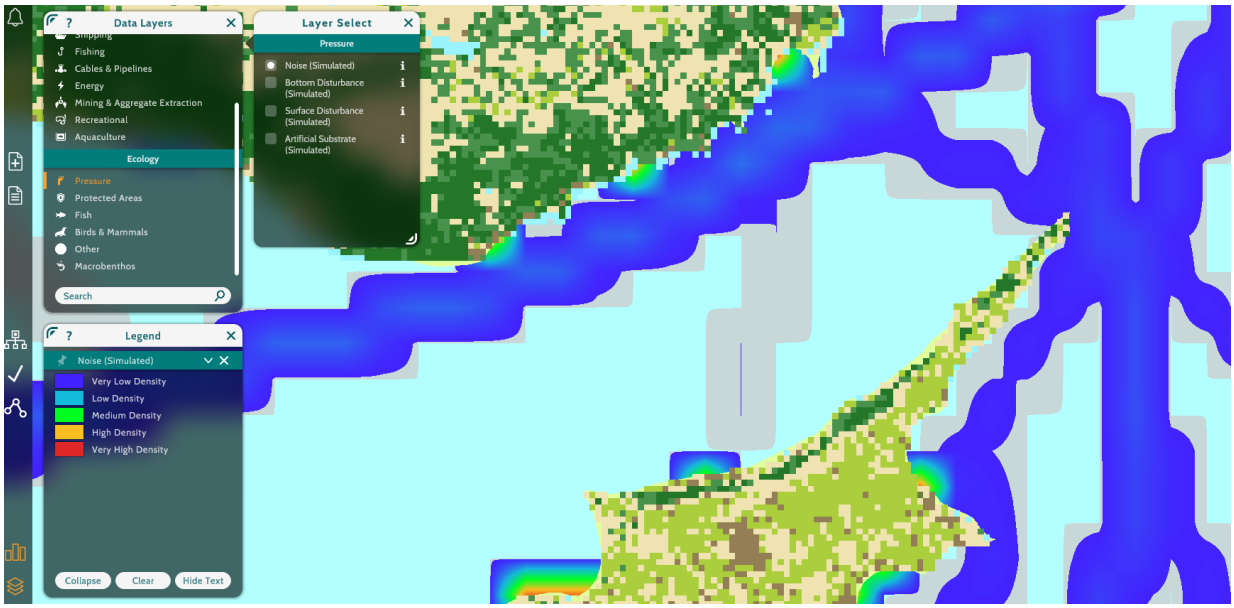
In this section we'll explore a few questions as examples of some of the concerns the teams needed to take into consideration as they planned their MPAs and Wind Farms.

Question 13: How does the density of noise pressure from the windfarms south of Turkey differ pre-construction, during construction, and post-construction (once they are operational)?

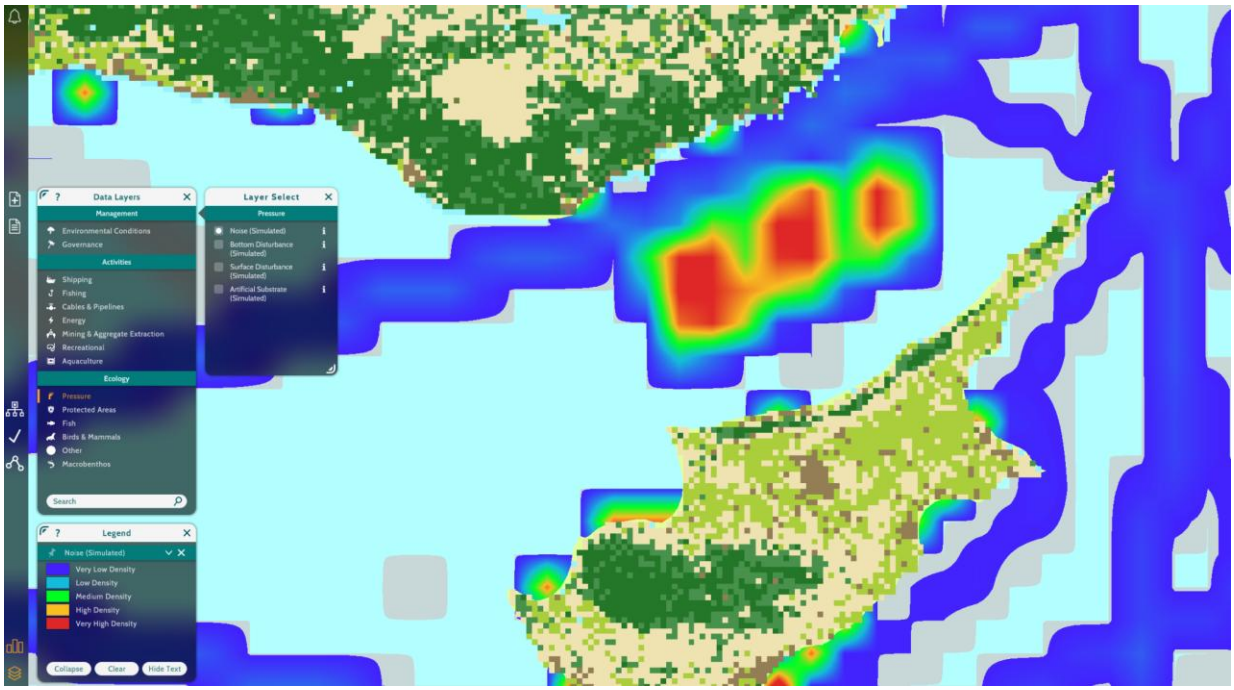
Steps to answer the question:

1. Go to "Data Layers"
2. Under "Ecology" select "Pressure"
3. In the Pressure Layer select "Noise (Simulated)"
4. To see the Legend for Noise, click on the > arrow next to "Noise Simulated" layer name). Make the window bigger if necessary by

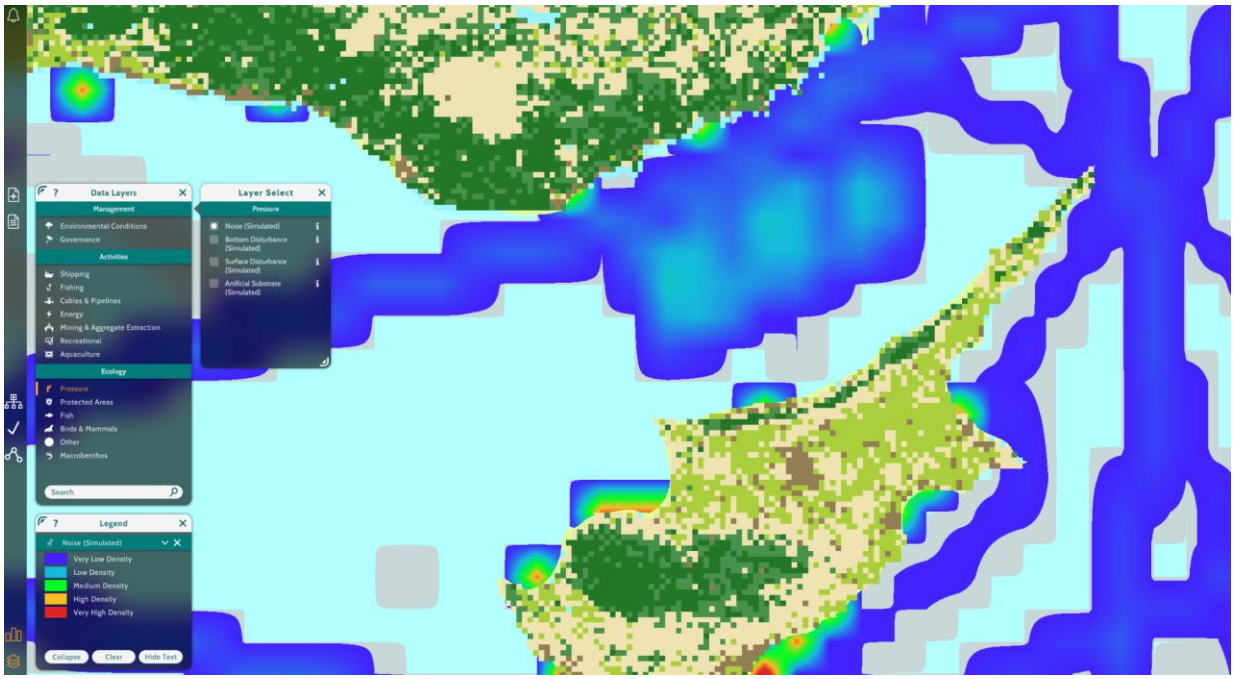
dragging and dropping the top left corner.	
5. Next, to look at the situation around the wind farms **south of Turkey** before, during and after the plan's implementation date - Click on the Clock icon in the top right corner to activate the time view mode. 6. Set the "Viewing time" to January 2020 to see the noise pressure pre-construction of the windfarms. Take a screenshot of the graphic and paste it below. 7. Repeat, setting the "Viewing time" to December 2027 to see the noise pressure during the construction phase. Take a screenshot. 8. Repeat, setting the "Viewing time" to January 2028 to see the noise pressure during the operational phase. Take a screenshot.	
Insert your screenshots here: **Before the windfarms (January 2020):**	



During construction (December 2027):



In operation (January 2028):

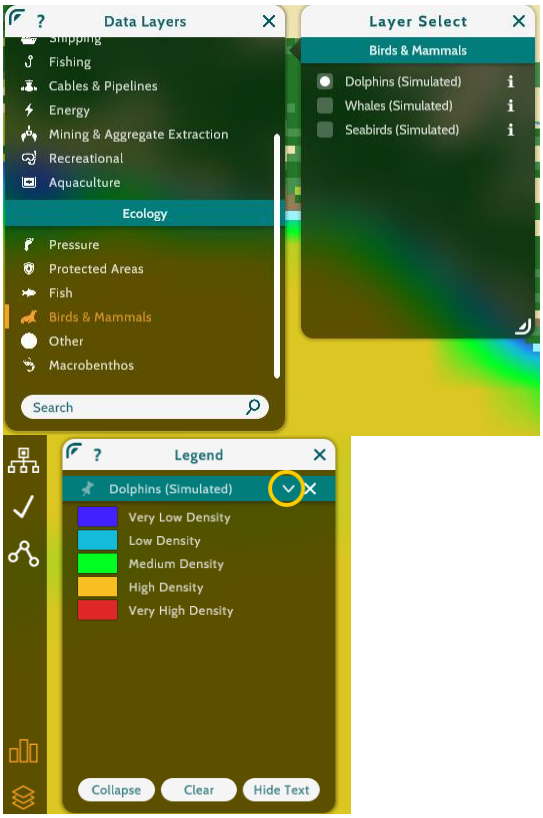
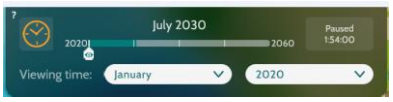


What do these graphics tell us about how the density of noise pressure from the windfarms south of Turkey compares pre-construction, during construction, and post-construction (once in operation)?

[Our answer:]

It seems that the noise pressure in that area only really increased during construction of the wind farms and then is residual during operation.

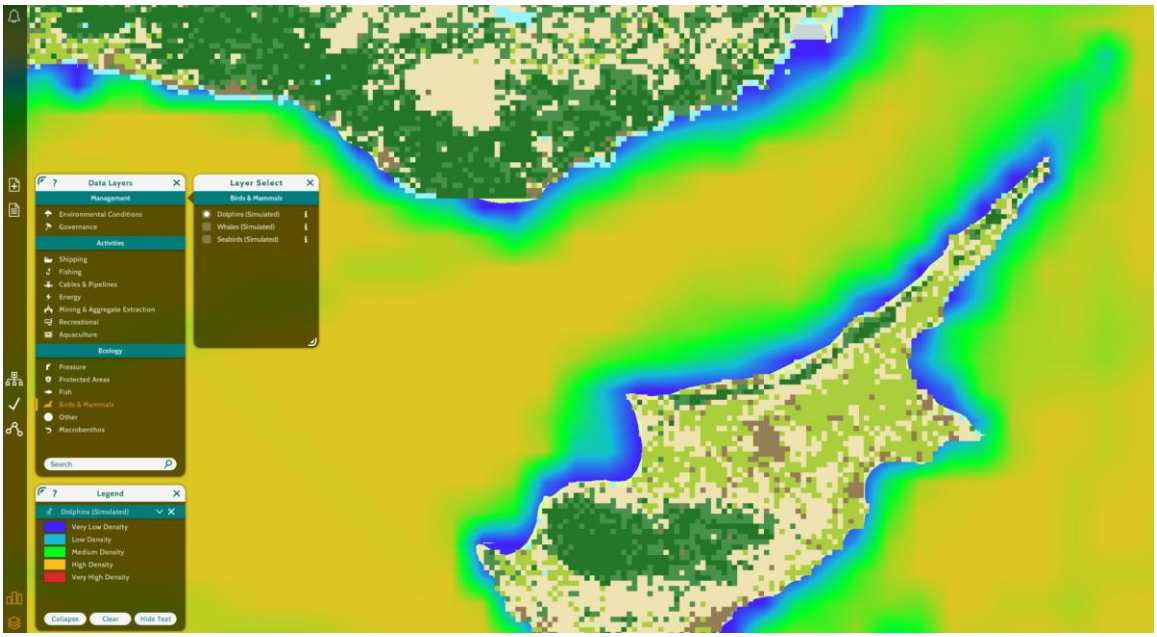
Question 14: How does the distribution of dolphins around the wind farms south of Turkey compare pre-construction, during construction, and post-construction (once in operation)?

1. Go to “Data Layers” 2. Under “Ecology” select “Birds and Mammals”, then select “Dolphins (Simulated) to open the Dolphins heatmap 3. Open the legend.	
4. Now, to look at the situation around the wind farms **south of Turkey**, during and after the plan’s implementation date - Click on the Clock icon in the top right corner to use the time view mode. 5. Set the “Viewing time” to **January 2020** to see the noise pressure pre-construction of the windfarms. Take a screenshot of the graphic and paste it below. 6. Repeat, setting the “Viewing time” to **December 2027** to see the noise pressure during the construction phase. Take a screenshot. 7. Repeat, setting the “Viewing time” to **January 2028** to see the noise pressure during the	

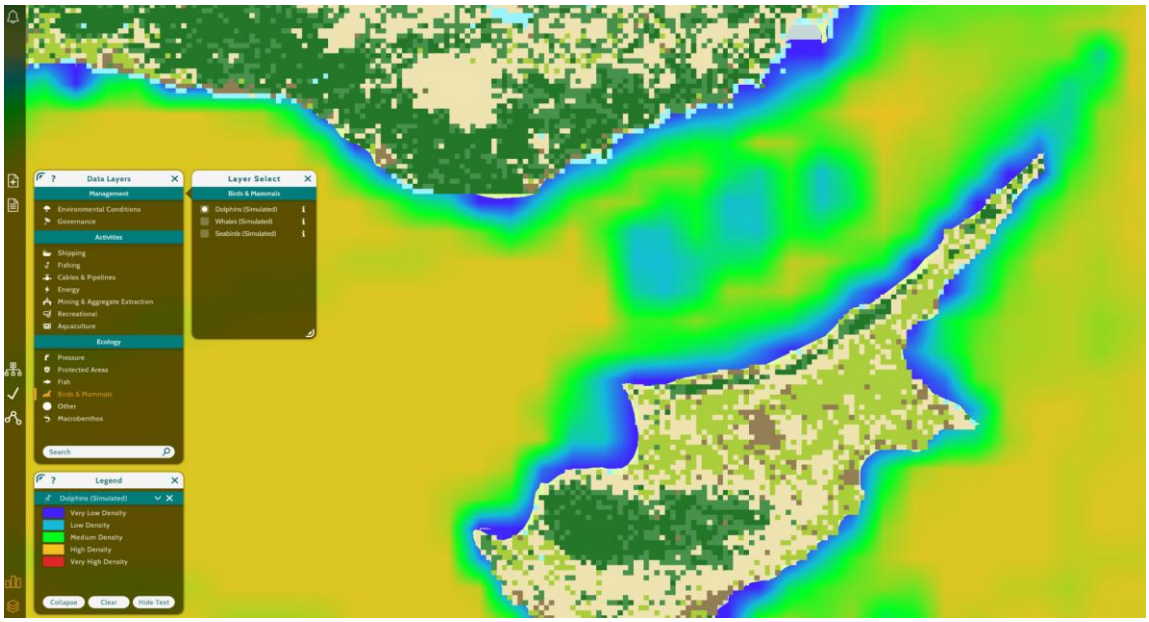
operational phase. Take a screenshot.	

Insert your screenshots here:

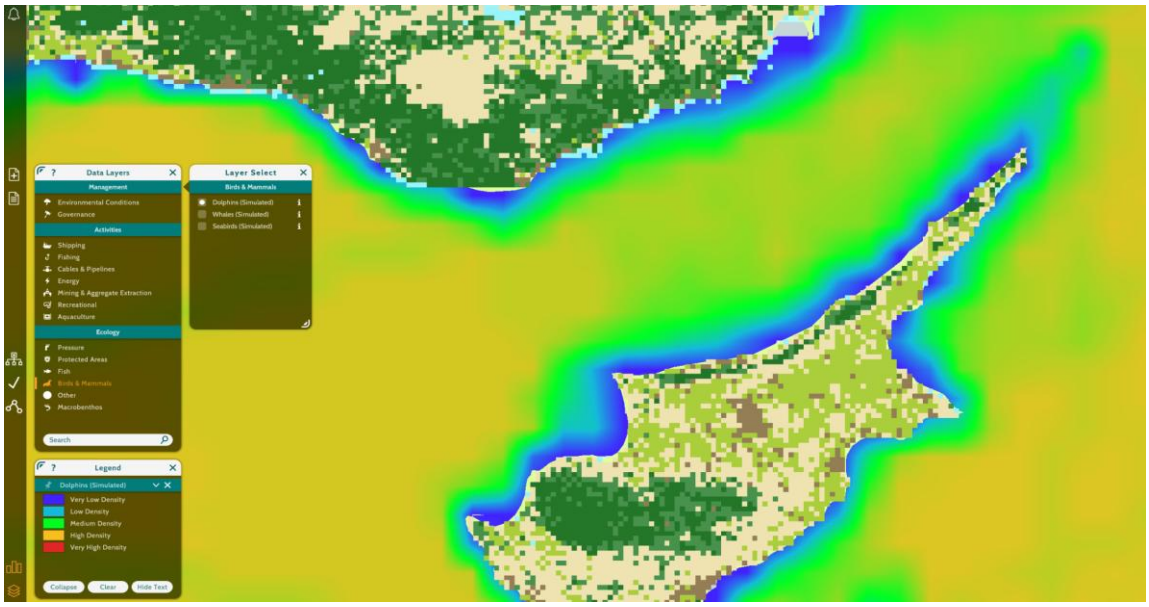
Before the windfarms (January 2020):



During construction (December 2027):



In operation (January 2028):



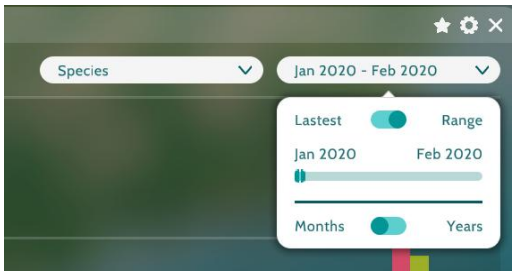
What do these graphics tell us about the distribution of dolphins around the windfarms south of Turkey pre-construction, during construction, and post-construction (once in operation)?

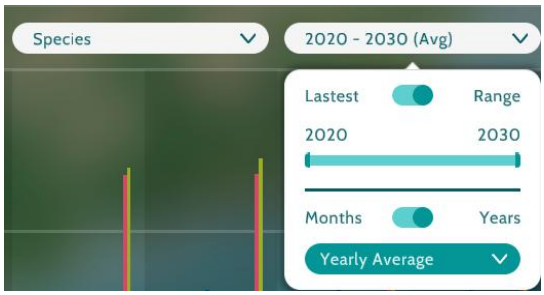
[**Our answer**: It did affect dolphins locally, especially during construction time. The noise once the wind farms are operating, could be residual from the construction phase.]

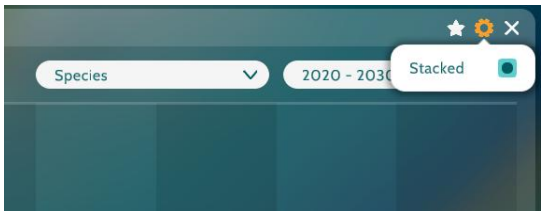
Question 15: How did the plans made affect Biomass over the simulated years (2020-2030)?

Steps to answer this question:

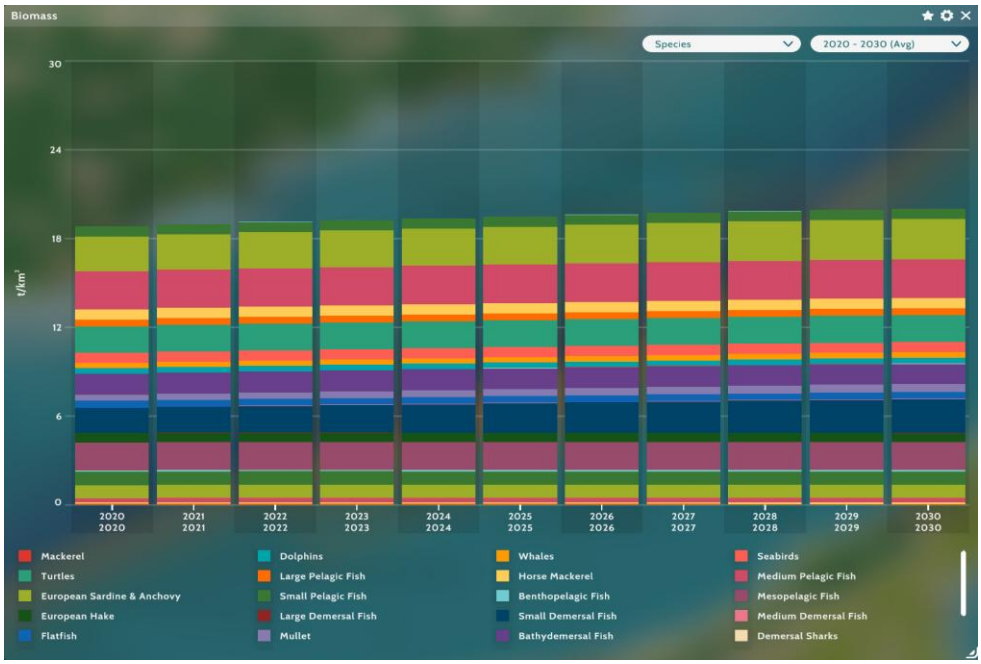
1. Open the dashboard 
2. Go to the ecology tab in the dashboard (fish icon)
3. Locate the “Biomass“ graph, keep all species selected, but select the time period for all the simulated years by clicking on range.
4. Drag the end of period marker to the right extreme.
5. Finally change the time steps to years
6. Stack the graphs to better see the trend of the biomass.







Insert a screenshot of the graph here:



What does the graph tell us about how the plans made by the teams affected Biomass over the simulated years (2020-2030)?

[Our answer: There is a slight increase in biomass in the overall area.**]**

Debriefing

With the MSP Challenge Simulation Platform, each team is able to co-create plans and consult other teams' plans. With the simulations running, users can see all plans implemented in different layers - independently of the creator of the plan - and explore the effects on the different sectors: energy, shipping, fishing and conservation. The teams can make plans, look at the effects, and then change their plans - continually exploring how to reach the optimal solution for the region, balancing multisectoral needs.

9 Annex IV – MSP Challenge workshop agenda

Maritime Spatial Planning Challenge Workshop Agenda

28 May, 9:30 – 15:00 CET

Venue: Polis, Brussels

9:30 - 10:30

- MSP Challenge Introduction
- Main features

10:30 – 11:30

- Getting settled in teams
- Check current region situation (in platform)
- Discuss national goals in teams
- Start planning to reach the goals

11:30 – 11:45

- Coffee break

11:45 – 13:00

- Finish up the plans
- Negotiate if needed
- Approve the plans

13:00 - 14:00

- Lunch Break

14:00 – 15:00

- Explore simulation results
- Interpret/give meaning to results
- Questions/observations
- Main takeaways

10 Annex V – MSP Challenge workshop results

EcoScope 2nd Stakeholder Workshop

Results from the MSP Challenge Simulation Platform Workshop

Presenter Name(s)	Magali Gonçalves
Presenter Organisation(s)	Breda University of Applied Sciences
Email/Contact Information:	Goncalves.m@buas.nl
Location:	Brussels
Date:	28 May 2025

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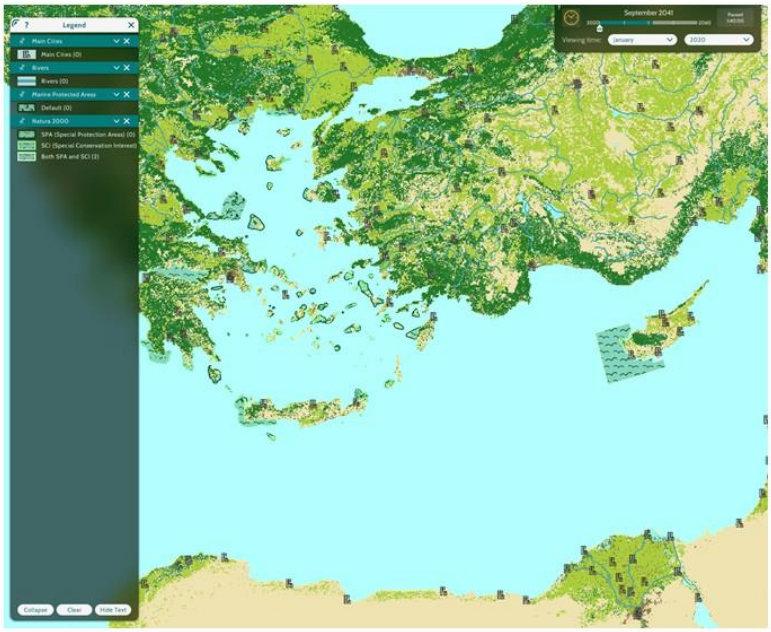
Overview of plans made and implemented during the session

All users can see all the plans made in the region.
Clicking on a plan, users can see the plan's details: policies
or new additions to layers.

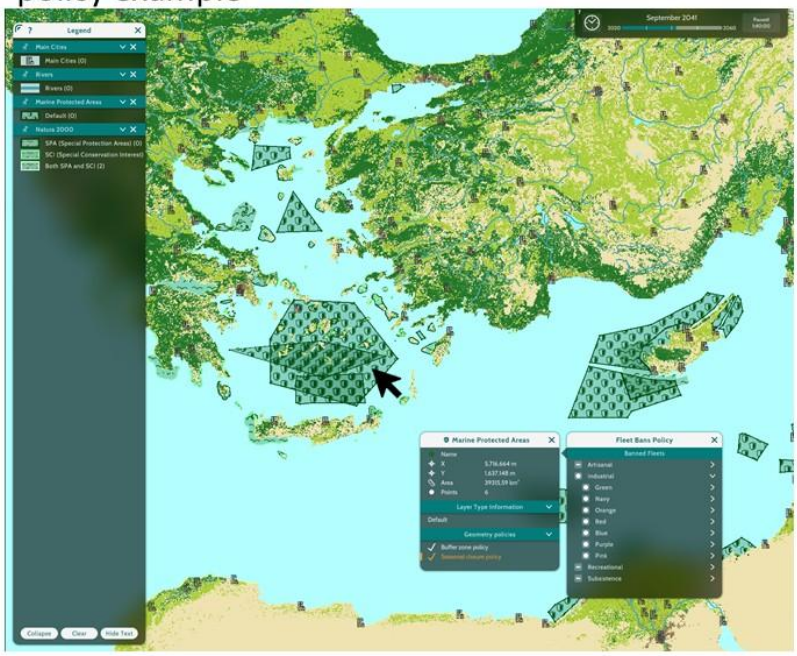
Energy infrastructure at the **start** of the simulation

Energy infrastructure at the **end** of the simulation

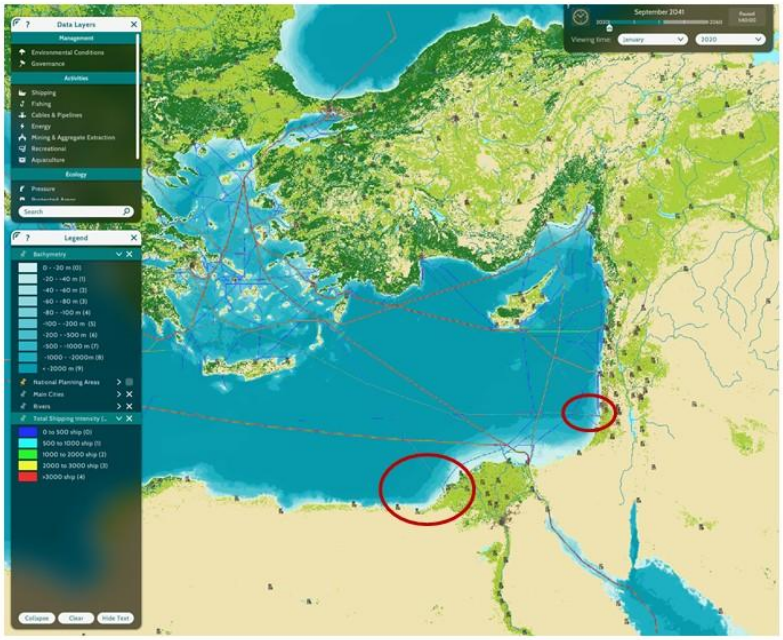
Marine conservation at the **start** of the simulation



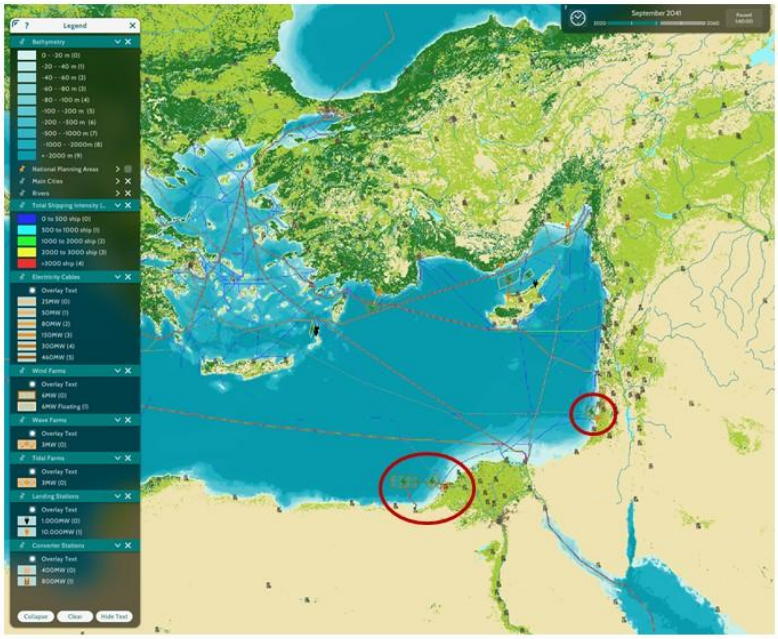
Marine conservation at the **end** of the simulation – implemented policy example



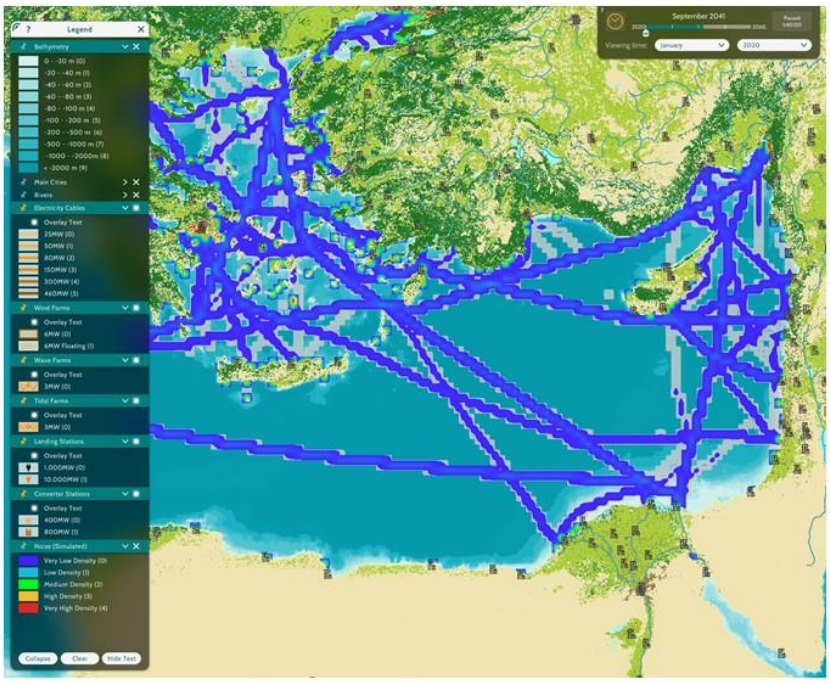
Shipping intensity at the **start** of the simulation



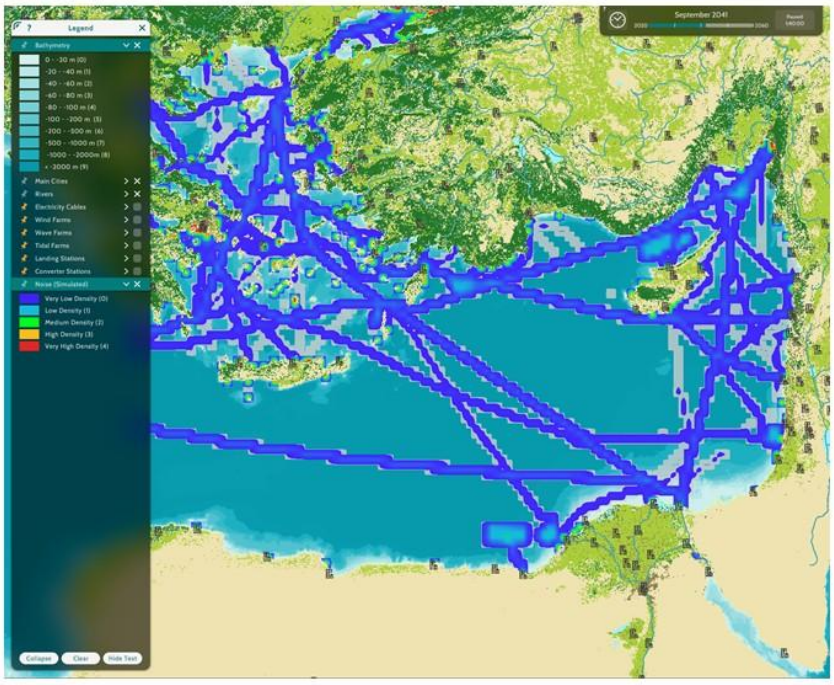
Shipping intensity at the **end** of the simulation



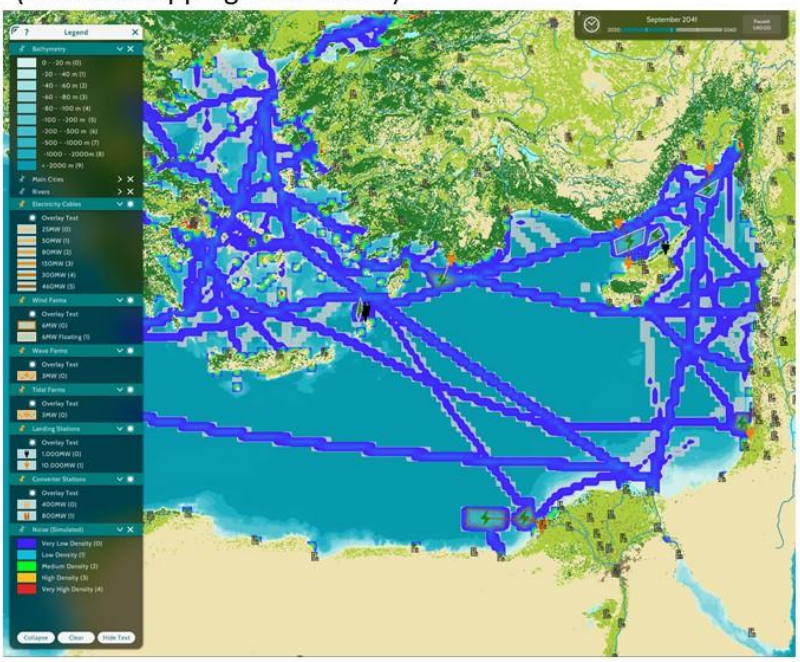
Pressure (e.g. noise) at the **start** of the simulation



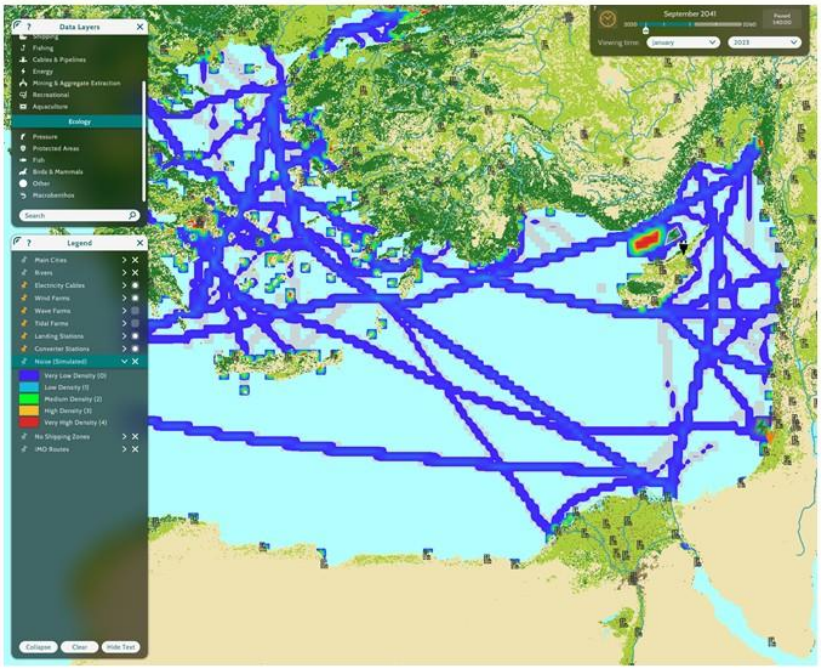
Pressure (e.g. noise) at the **end** of the simulation



Pressure (e.g. noise) at the **end** of the simulation
(with overlapping wind farms)



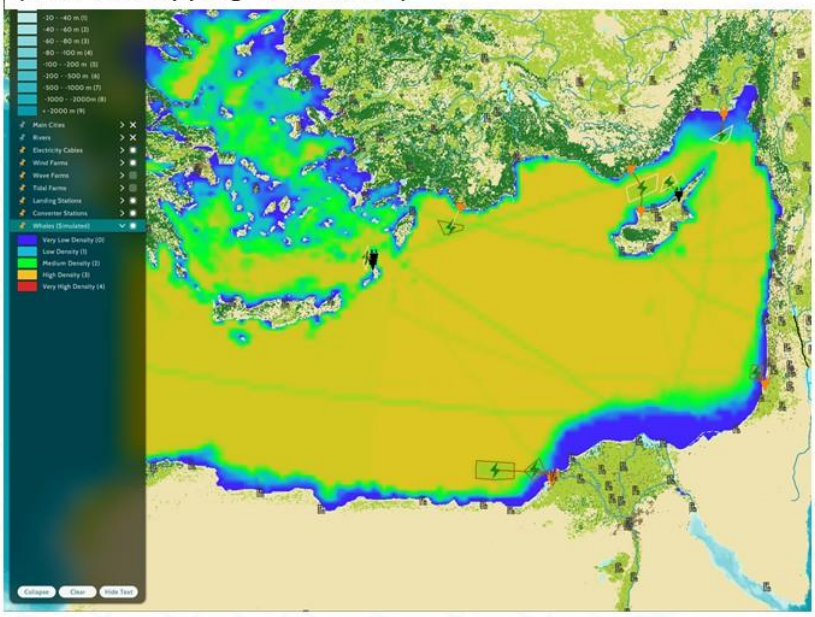
Pressure (e.g. noise) during construction of a wind farm



Species distribution (e.g. whales) at the **start** of the simulation

Species distribution (e.g. whales) at the **end** of the simulation

(with overlapping wind farms)



Key Performance Indicators – Ecosystem and Fisheries

Key Performance Indicators – Green Energy

Key Performance Indicators – Shipping

Notice the efficiency over time for the port of Ashdod (where we saw the shipping intensity deviating due to the construction of a wind farm)