

## Appendix

This Appendix provides a complete documentation of all data inputs, parameter settings, and outputs generated across the 60 spatial prioritization scenarios. It includes detailed tables listing the scenarios (*Table 1*), the data used in each one (*Table 2*) and the way each component was incorporated in the analysis (*Table 3*). These materials allow readers to explore the spatial outcomes of every scenario in depth and to compare how differences in data, weighting schemes, and policy considerations influence the resulting conservation priorities.

Scenario list	Without weights		With weights	
	MPAs locked in	MPAs not locked in	MPAs locked in	MPAs not locked in
<b>Current</b>				
<i>Current</i>	✓	✓	✓	✓
<i>Current, no cost included</i>	✓	✓	✓	✓
<b>Current, accounting for climate change</b>				
<i>RCP2.6 2050</i>	✓	✓	✓	✓
<i>RCP2.6 2100</i>	✓	✓	✓	✓
<i>RCP4.5 2050</i>	✓	✓	✓	✓
<i>RCP4.5 2100</i>	✓	✓	✓	✓
<i>RCP8.5 2050</i>	✓	✓	✓	✓
<i>RCP8.5 2100</i>	✓	✓	✓	✓
<b>Future</b>				
<i>RCP2.6 2050</i>	✓	✓	✓	✓
<i>RCP2.6 2100</i>	✓	✓	✓	✓
<i>RCP4.5 2050</i>	✓	✓	✓	✓
<i>RCP4.5 2100</i>	✓	✓	✓	✓
<i>RCP8.5 2050</i>	✓	✓	✓	✓
<i>RCP8.5 2100</i>	✓	✓	✓	✓
<b>Worst case scenario</b>	✓	✓	✓	✓

**Table 1. Overview of the scenario framework used in the spatial prioritization analysis.** Each scenario family is subdivided into four variants based on the inclusion or exclusion of species weights and whether existing Marine Protected Areas (MPAs) are locked in or not. The table summarizes all 60 scenarios developed for the eFolio.

Scenarios	Data used as input												
	Current species distribution	Future species distribution - RCP2.6 2050	Future species distribution - RCP2.6 2100	Future species distribution - RCP4.5 2050	Future species distribution - RCP4.5 2100	Future species distribution - RCP8.5 2050	Future species distribution - RCP8.5 2100	Habitat refugia - RCP2.6 2050	Habitat refugia - RCP2.6 2100	Habitat refugia - RCP4.5 2050	Habitat refugia - RCP4.5 2100	Habitat refugia - RCP8.5 2050	Habitat refugia - RCP8.5 2100
<b>Present</b>													
Current	x												
Current- no cost	x												
<b>Present, accounting for climate change</b>													
RCP2.6 2050	x	x						x					
RCP2.6 2100	x		x						x				
RCP4.5 2050	x			x						x			
RCP4.5 2100	x				x						x		
RCP8.5 2050	x					x						x	
RCP8.5 2100	x						x						x
<b>Future</b>													
RCP2.6 2050		x											
RCP2.6 2100			x										
RCP4.5 2050				x									
RCP4.5 2100					x								
RCP8.5 2050						x							
RCP8.5 2100							x						
<b>Worst case scenario</b>							x						x

Scenarios	Data used as input												
	Climate refugia - RCP8.5 2100	Connectivity data	Purse seiners	Trawlers	Small scale fisheries - static gears	Anchorage	Munitions	Platforms	Ports	Marine traffic	Changes in the probability of local climate extremes	Novel Climate	Standardized Local Anomalies
<b>Present</b>													
Current		x	x	x	x	x	x	x	x	x			
Current- no cost		x											
<b>Present, accounting for climate change</b>													
RCP2.6 2050		x	x	x	x	x	x	x	x	x			
RCP2.6 2100		x	x	x	x	x	x	x	x	x			
RCP4.5 2050		x	x	x	x	x	x	x	x	x			
RCP4.5 2100		x	x	x	x	x	x	x	x	x			
RCP8.5 2050		x	x	x	x	x	x	x	x	x			
RCP8.5 2100		x	x	x	x	x	x	x	x	x			
<b>Future</b>													
RCP2.6 2050													
RCP2.6 2100													
RCP4.5 2050													
RCP4.5 2100													
RCP8.5 2050													
RCP8.5 2100													
<b>Worst case scenario</b>	x										x	x	x

**Table 2. Overview of scenario inputs.** This table summarizes the data layers incorporated into each scenario. Rows correspond to individual scenarios, while columns represent the different input datasets. An “x” indicates that the respective dataset is included in that scenario.

Data used as input	Current species distribution	Future species distribution - RCP2.6 2050	Future species distribution - RCP2.6 2100	Future species distribution - RCP4.5 2050	Future species distribution - RCP4.5 2100	Future species distribution - RCP8.5 2050	Future species distribution - RCP8.5 2100	Habitat refugia - RCP2.6 2050	Habitat refugia - RCP2.6 2100	Habitat refugia - RCP4.5 2050	Habitat refugia - RCP4.5 2100	Habitat refugia - RCP8.5 2050	Habitat refugia - RCP8.5 2100	Climate refugia - RCP8.5 2100	Existing MPAs - locked in	Connectivity data
Component type	BF	BF	BF	BF	BF	BF	BF	BF	BF	BF	BF	BF	BF	BF	LIC	BF

Data used as input	Purse seiners	Trawlers	Small scale fisheries - static gears	Anchorage	Munitions	Platforms	Ports	Marine traffic	Changes in the probability of local climate extremes	Novel Climate	Standardized Local Anomalies	Species weights - IUCN	Species weights - Endemism	Species weights - 92/43/EEC	Species weights - Black Sea IMMAS
Component type	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL	SW	SW	SW	SW

**Table 3. Role of each data input within the spatial prioritization analysis.** This table presents how each dataset was incorporated into the analysis, whether as a biodiversity feature (BF), cost layer (CL), locked-in constraint (LIC), or species weight (SW).



## Current scenario

**Scenario:** Current

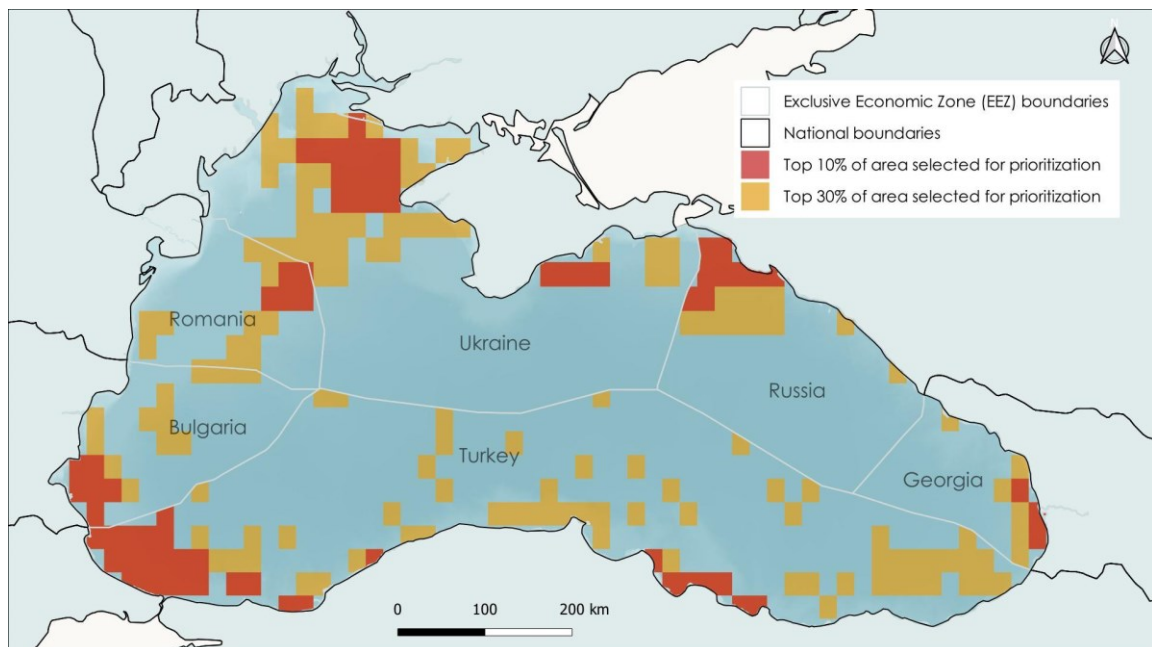
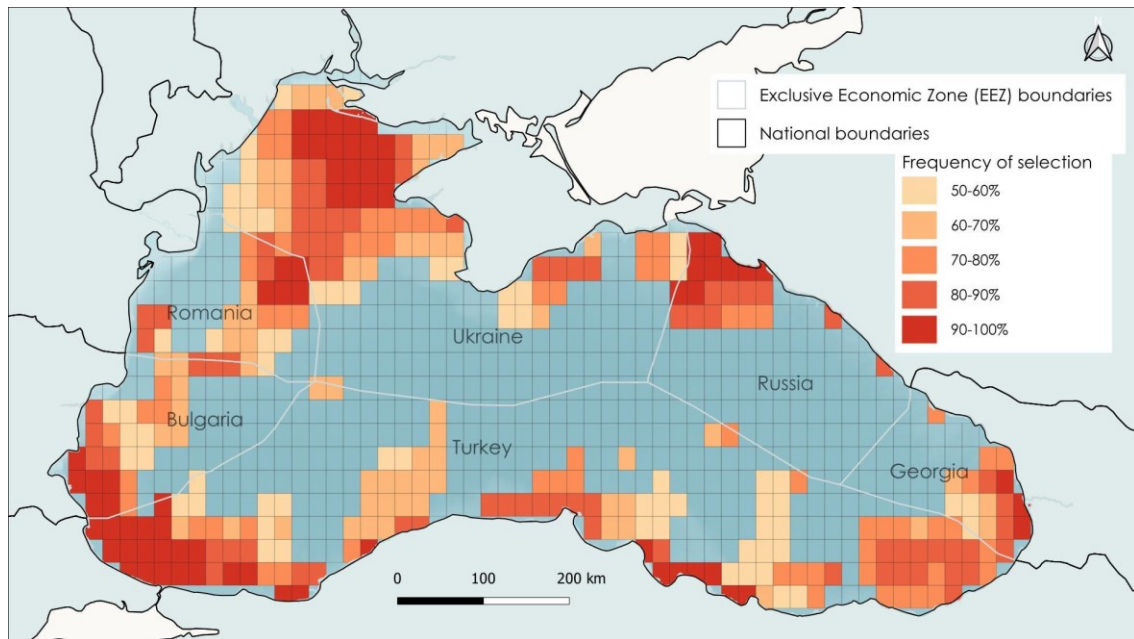
**Run variant:** No MPAs & species weights used

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### What this scenario represents

This run identifies conservation priority areas based purely on current species distributions in the Black Sea.

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**Scenario:** *Current*

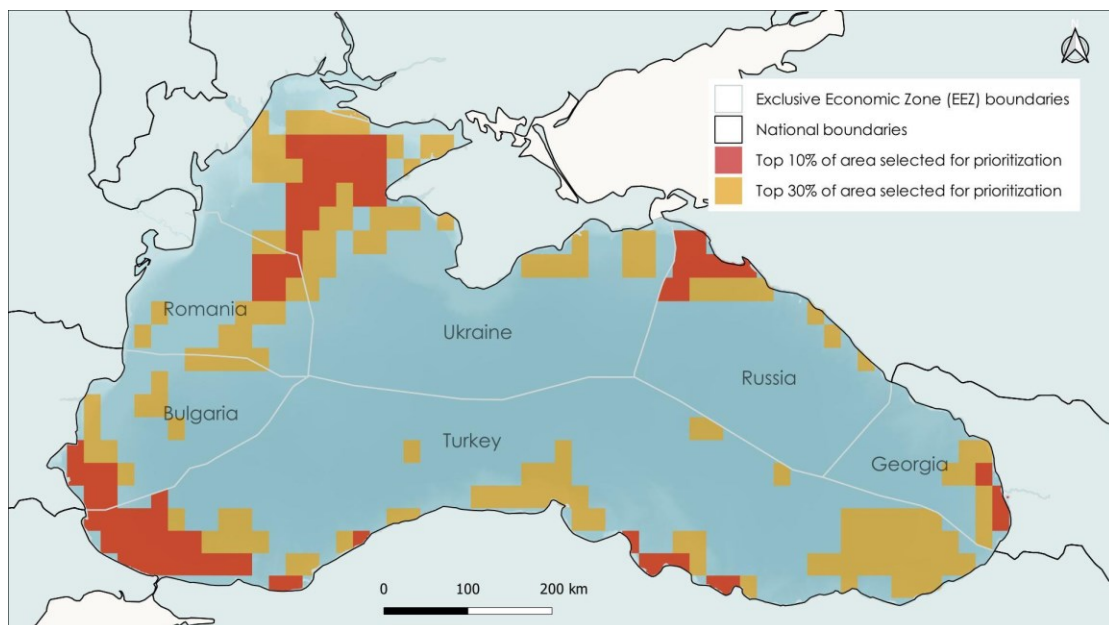
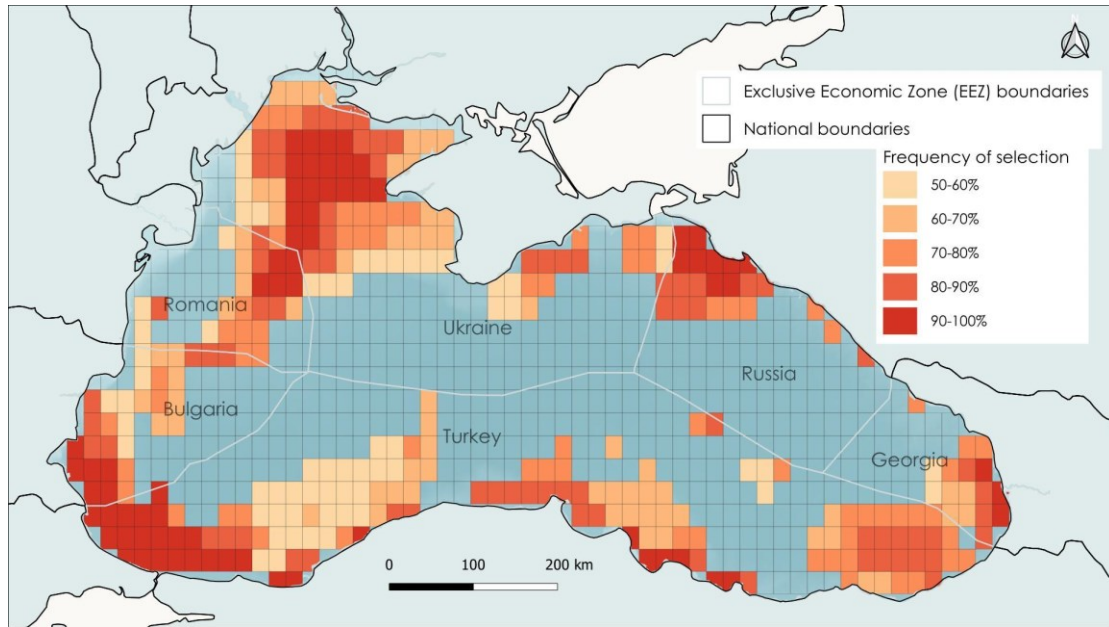
**Run variant:** *No MPAs – Species weights used*

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### What this scenario represents

This run identifies conservation priority areas based purely on current species distributions in the Black Sea, while giving higher priority to species of greater conservation concern.

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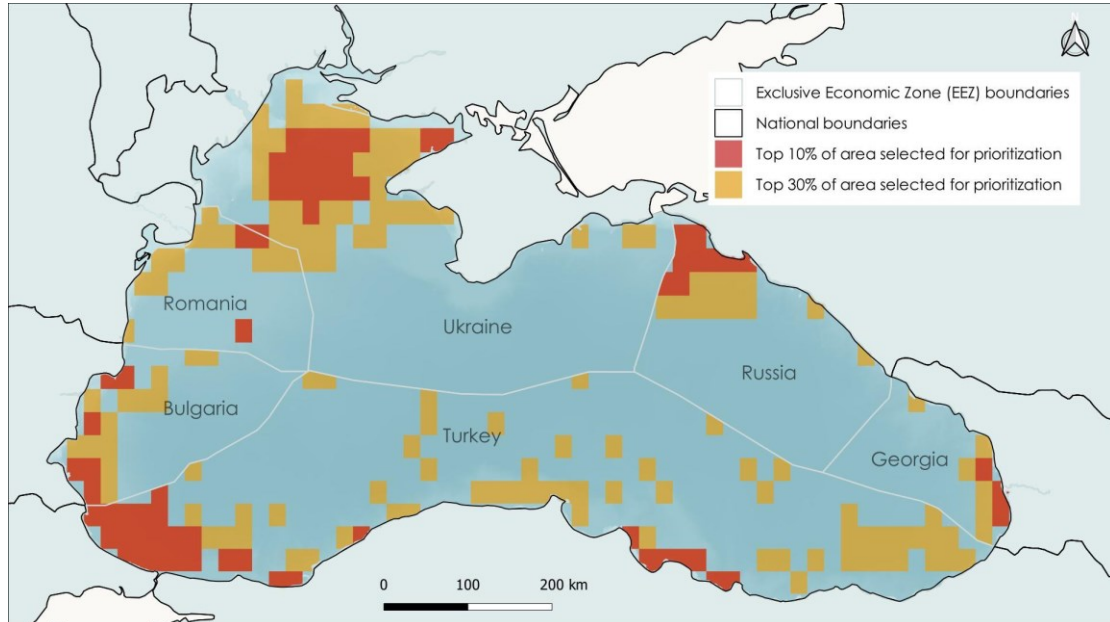
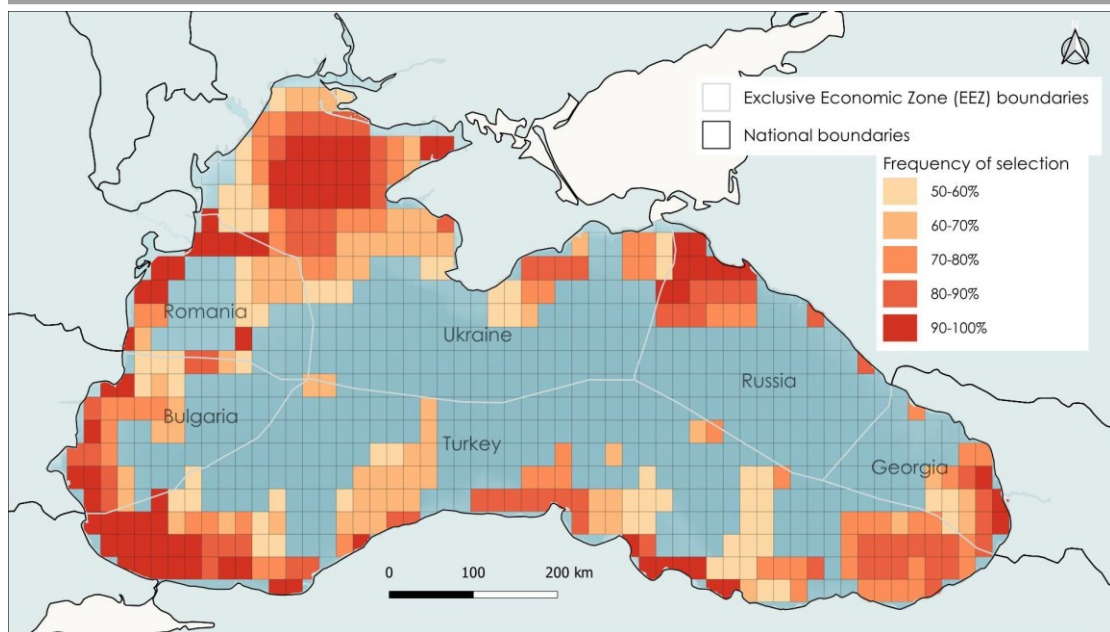


**Scenario:** *Current*

**Run variant:** *MPAs locked in – No species weights used*

### What this scenario represents

This run identifies conservation priority areas based purely on current species distributions in the Black Sea, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.



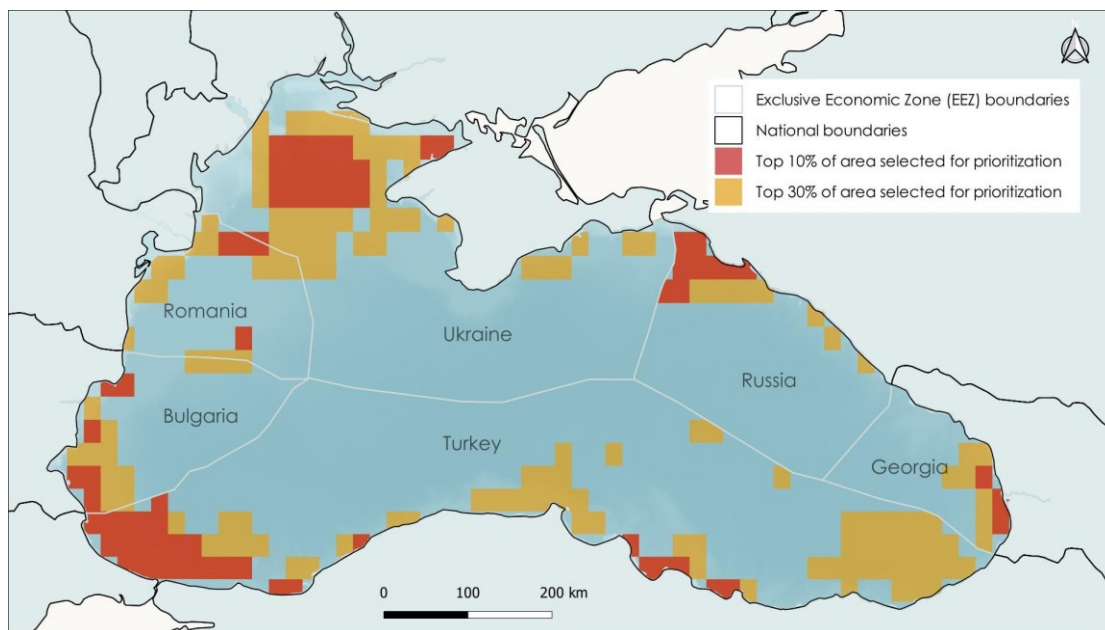
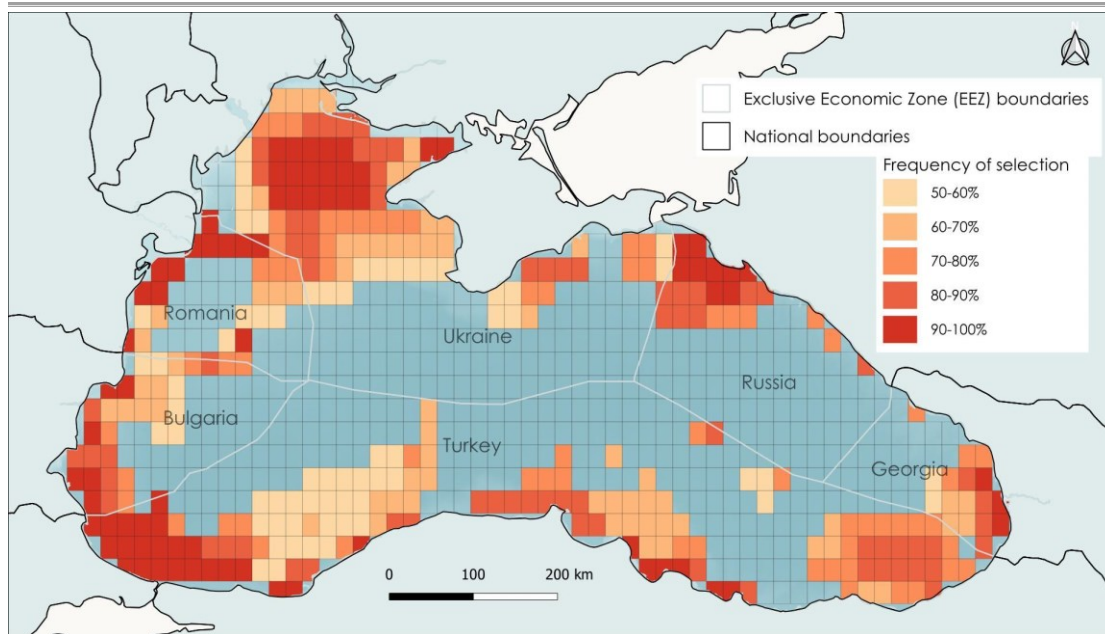


**Scenario:** *Current*

**Run variant:** *MPAs locked in & species weights used*

### What this scenario represents

This run identifies conservation priority areas based purely on current species distributions in the Black Sea, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.

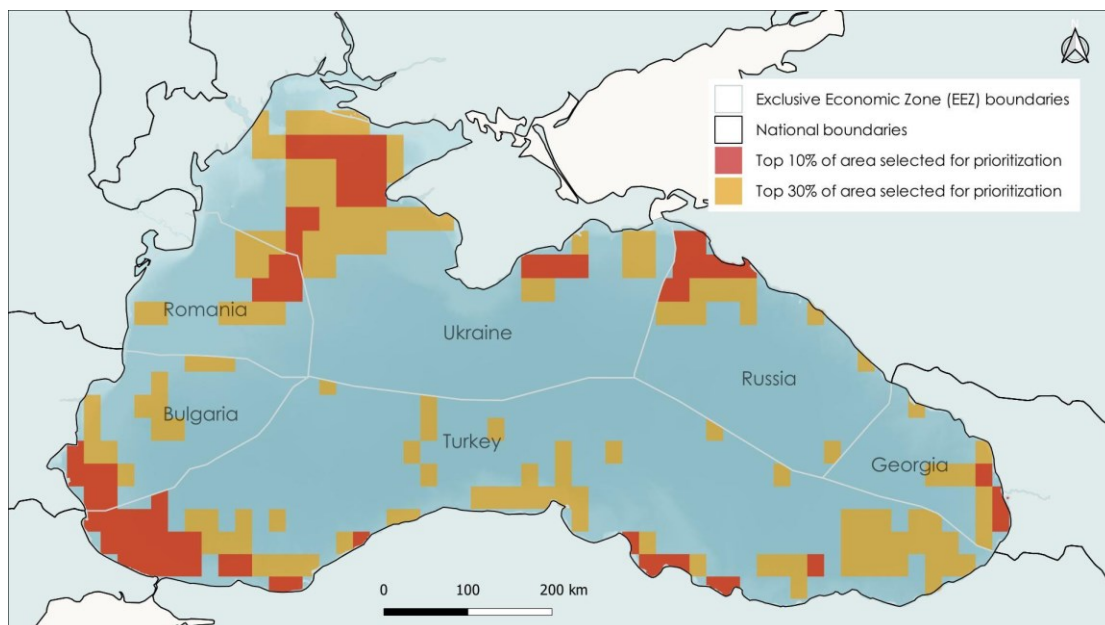
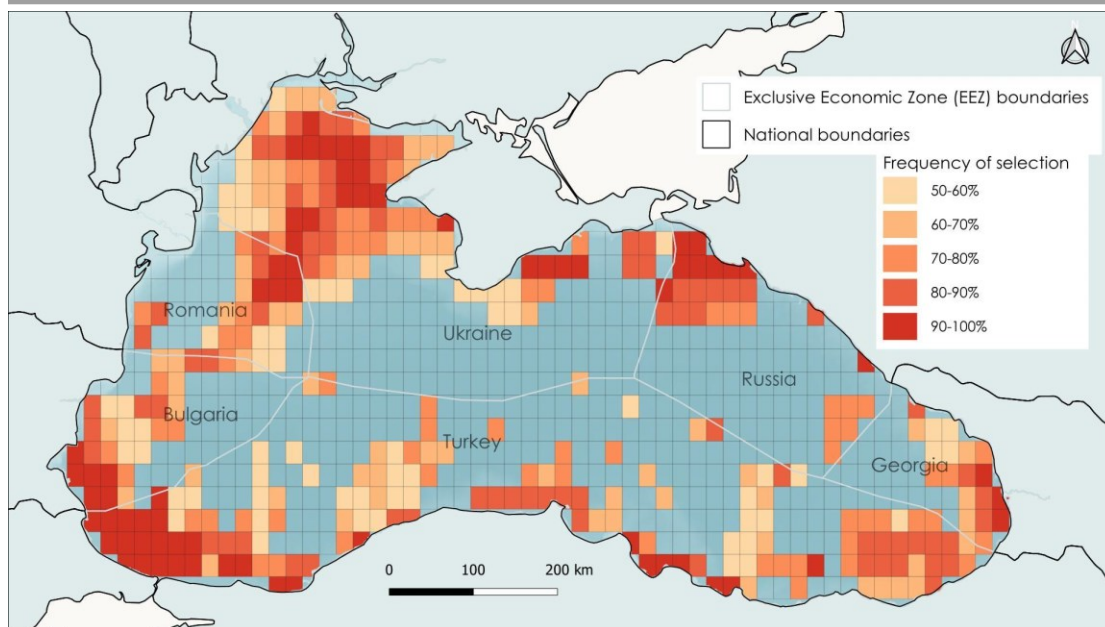


**Scenario:** *Current*

**Run variant:** *No MPAs & no species weights*

### What this scenario represents

This run identifies conservation priority areas based purely on current species distributions in the Black Sea and areas where human activity might pose a challenge to conservation efforts.

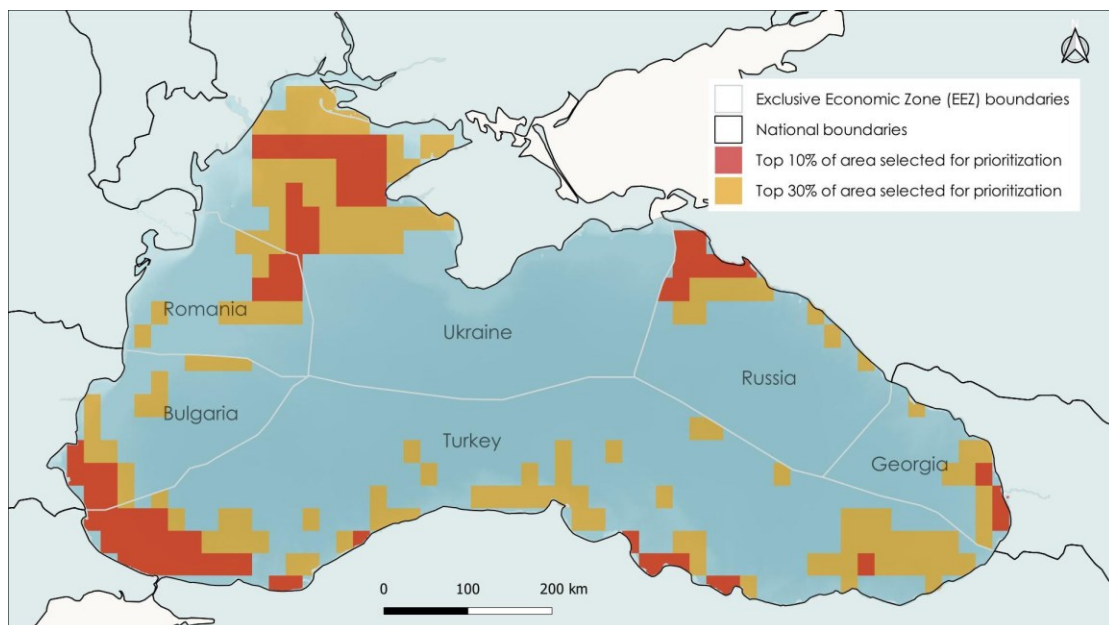
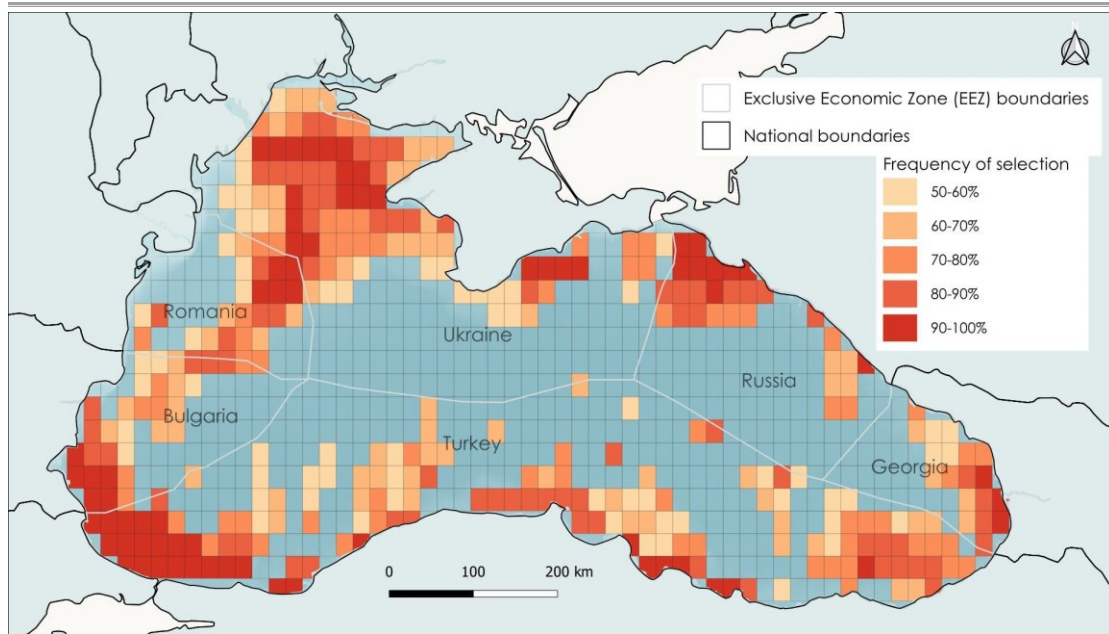


**Scenario:** *Current*

**Run variant:** *No MPAs - Species weights used*

### What this scenario represents

This run identifies conservation priority areas based purely on current species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while giving higher priority to species of greater conservation concern.





**Scenario:** *Current*

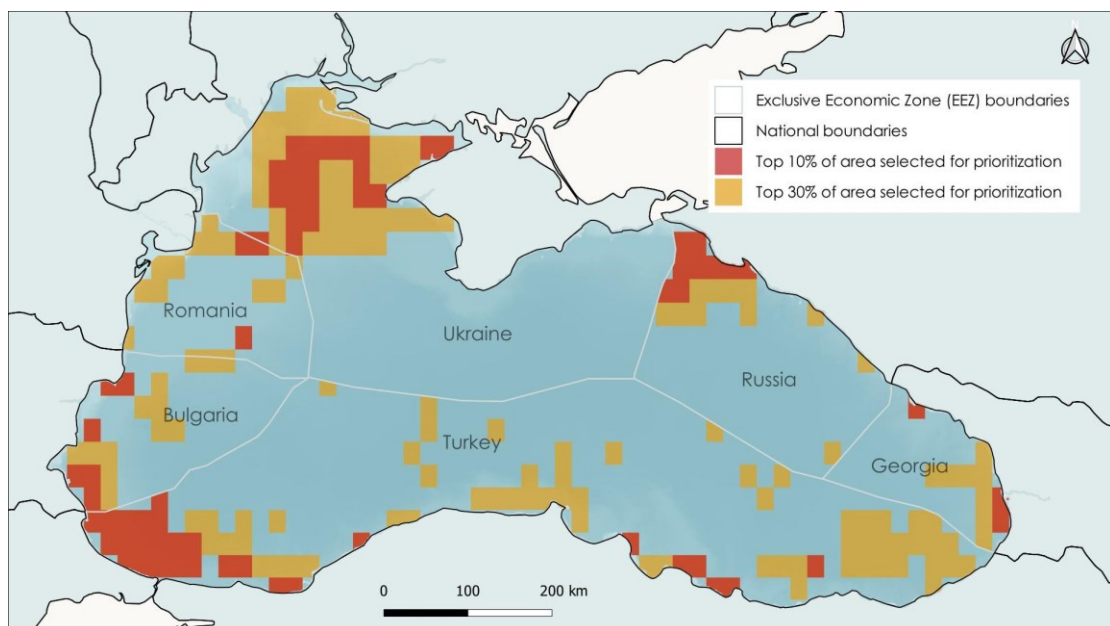
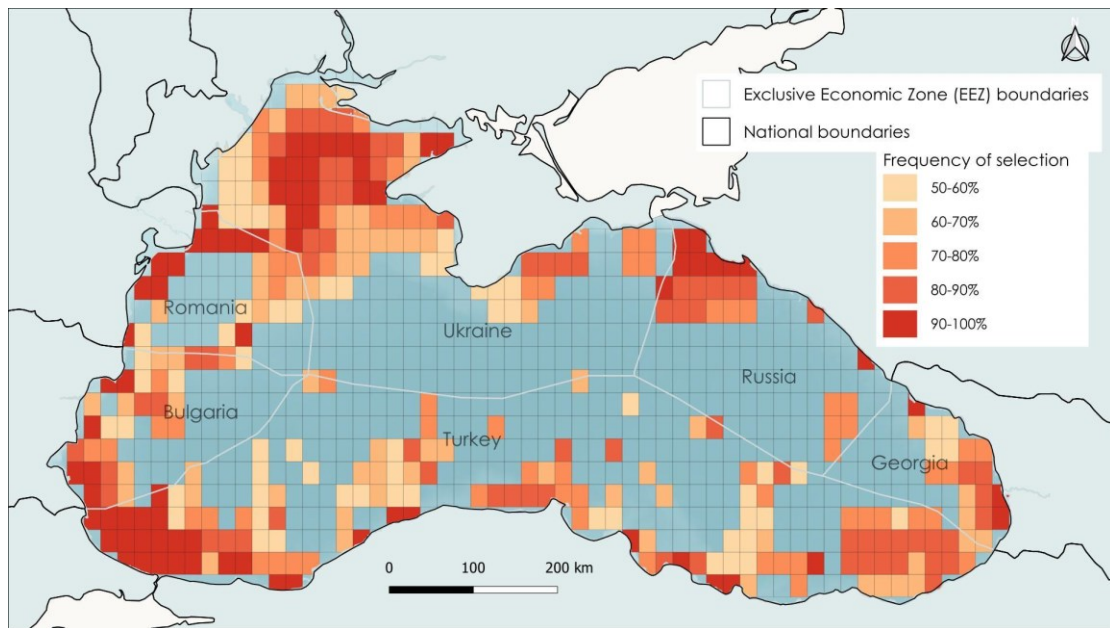
**Run variant:** *MPAs locked in - No species weights used*

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### What this scenario represents

This run identifies conservation priority areas based purely on current species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.

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**Scenario:** *Current*

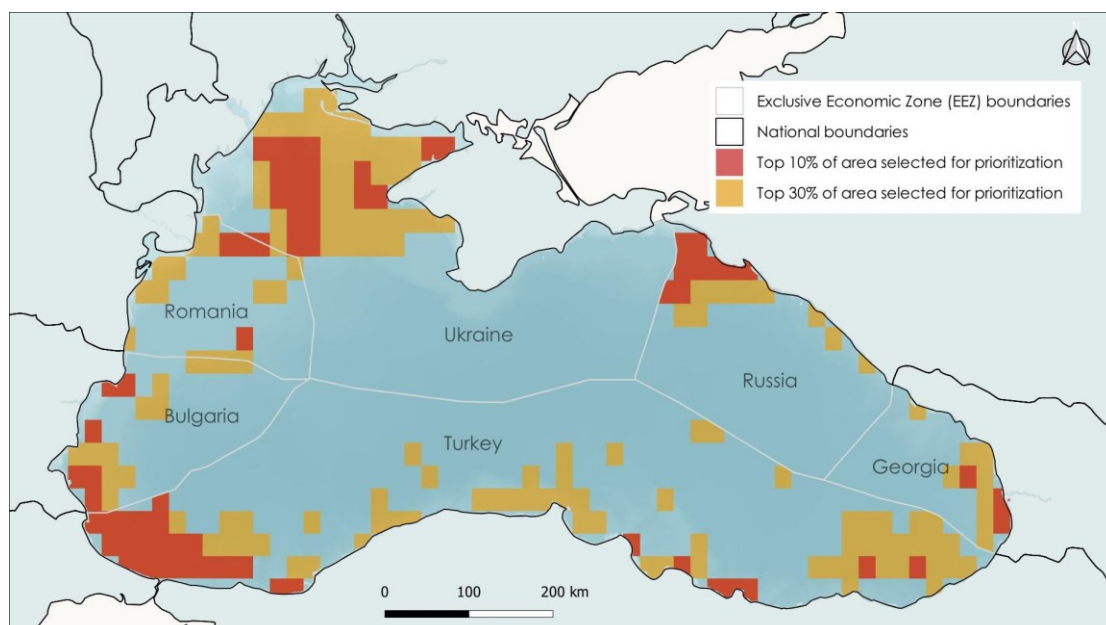
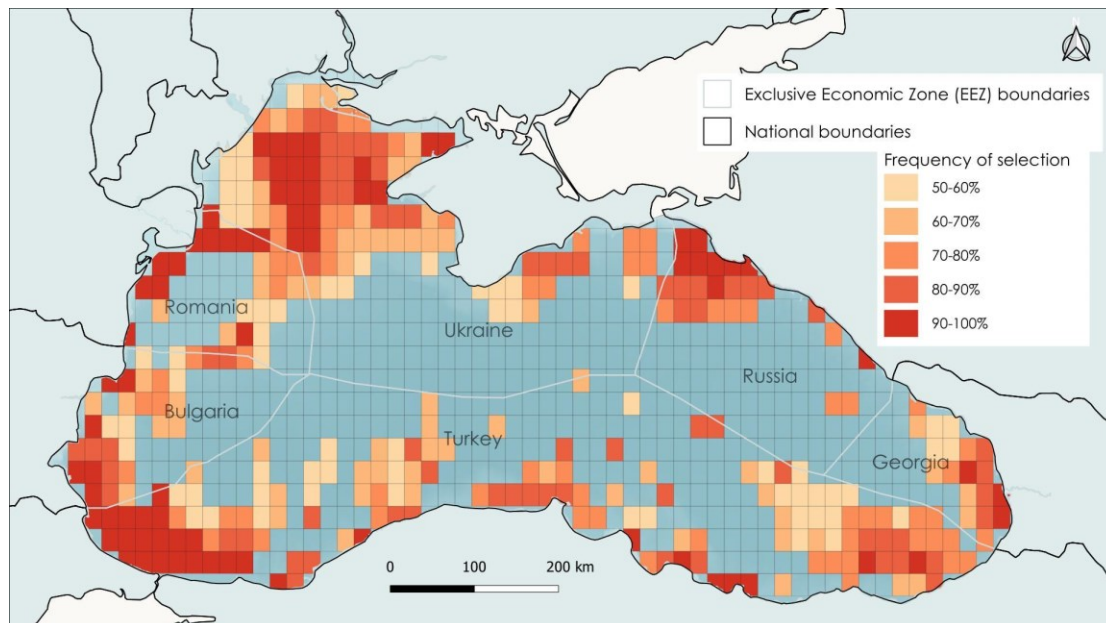
**Run variant:** *MPAs locked in & species weights used*

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### What this scenario represents

This run identifies conservation priority areas based purely on current species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.

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## Current scenario, taking into account climate change

### RCP 2.6

**Scenario:** *Current, accounting for climate change*

**Run variant:** *No MPAs - no species weights used*

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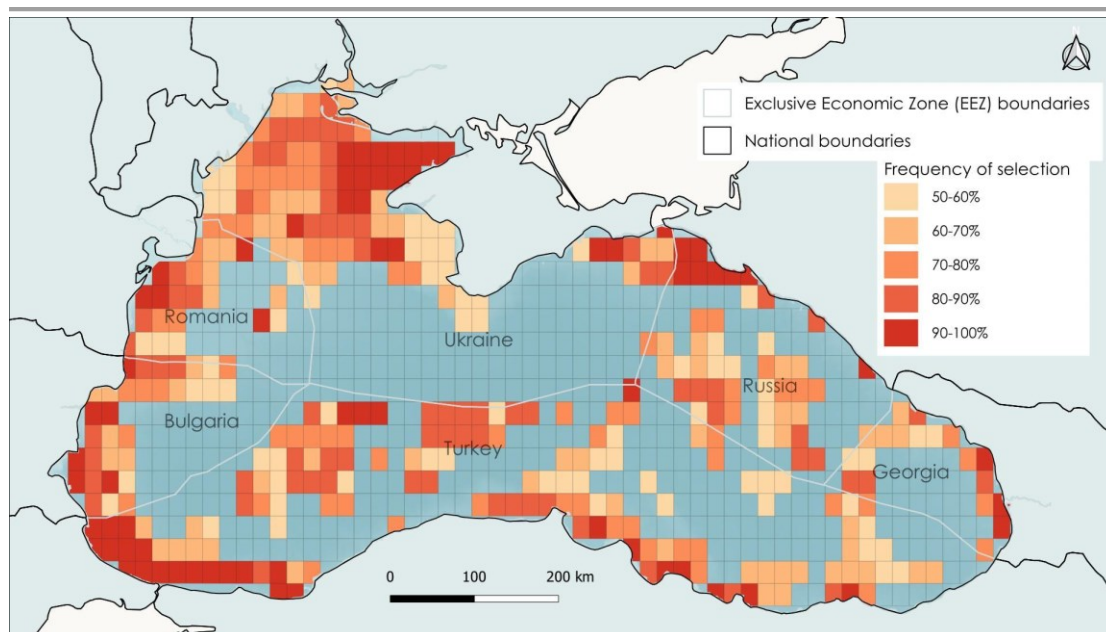
#### What this scenario represents

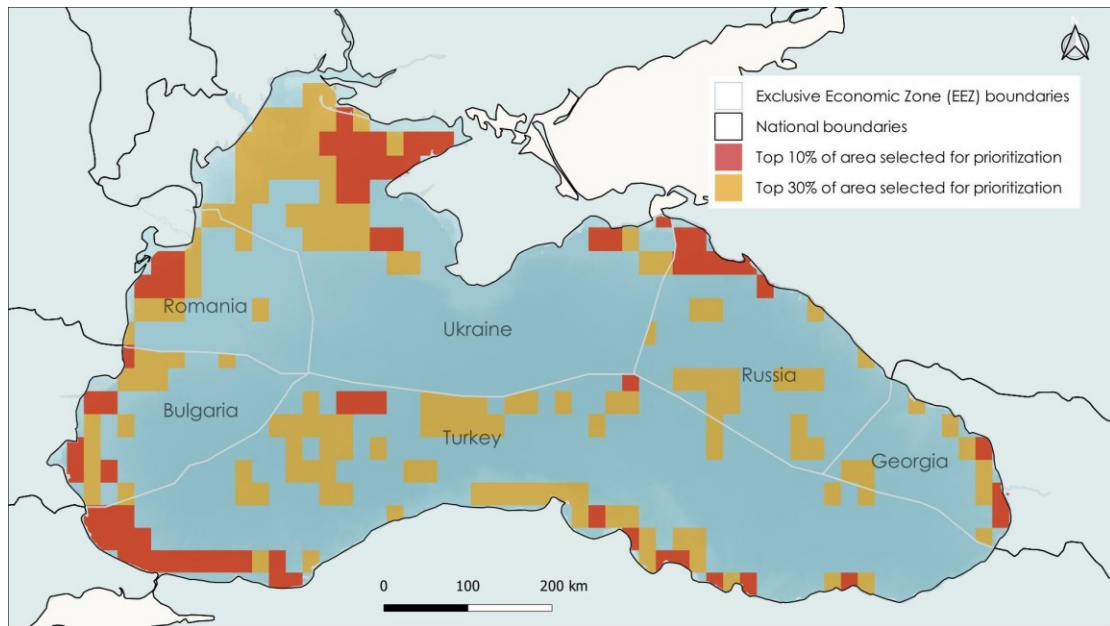
This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 2.6 – for the year 2050) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts.

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#### Climate scenario used:

The analysis is based on species distribution models projected under RCP2.6, a stringent mitigation scenario aiming to limit global warming below 2 °C by 2100. It requires rapid declines in CO<sub>2</sub> emissions starting around 2020, significant cuts in methane and sulphur dioxide emissions, and large-scale negative emissions such as CO<sub>2</sub> absorption by trees.





**Scenario:** *Current, accounting for climate change*

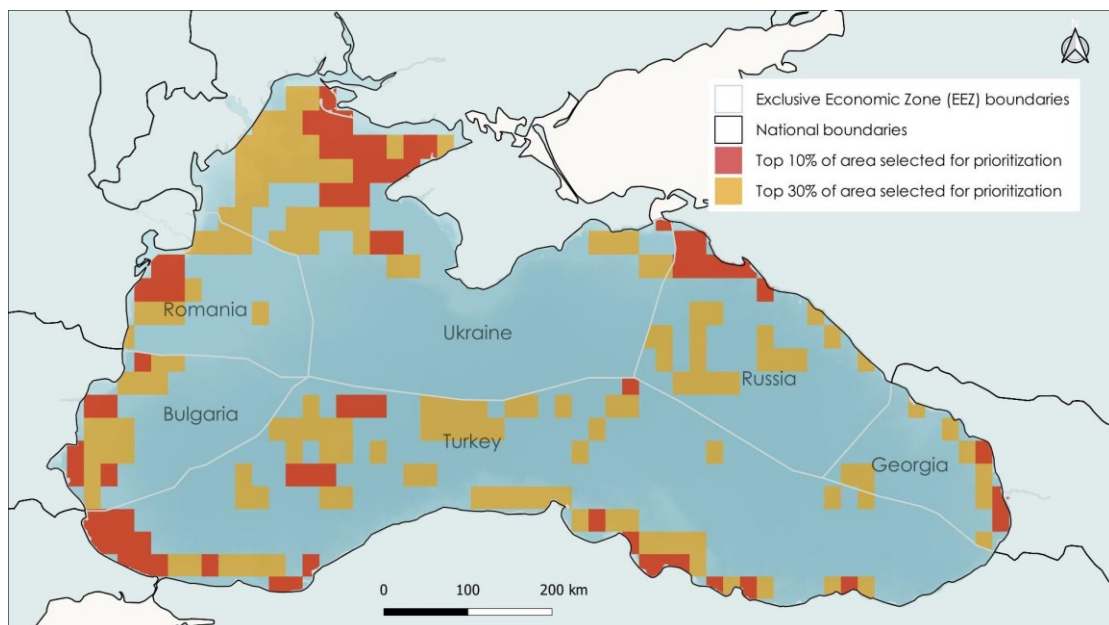
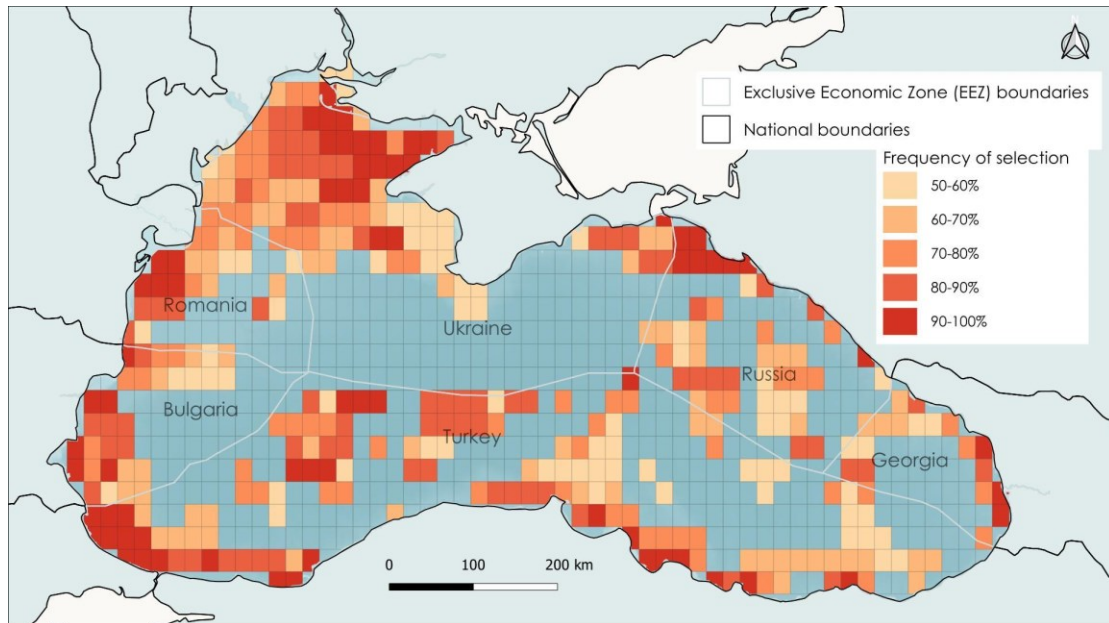
**Run variant:** *No MPAs – Species weights used*

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### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 2.6 – for the year 2050) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while giving higher priority to species of greater conservation concern.

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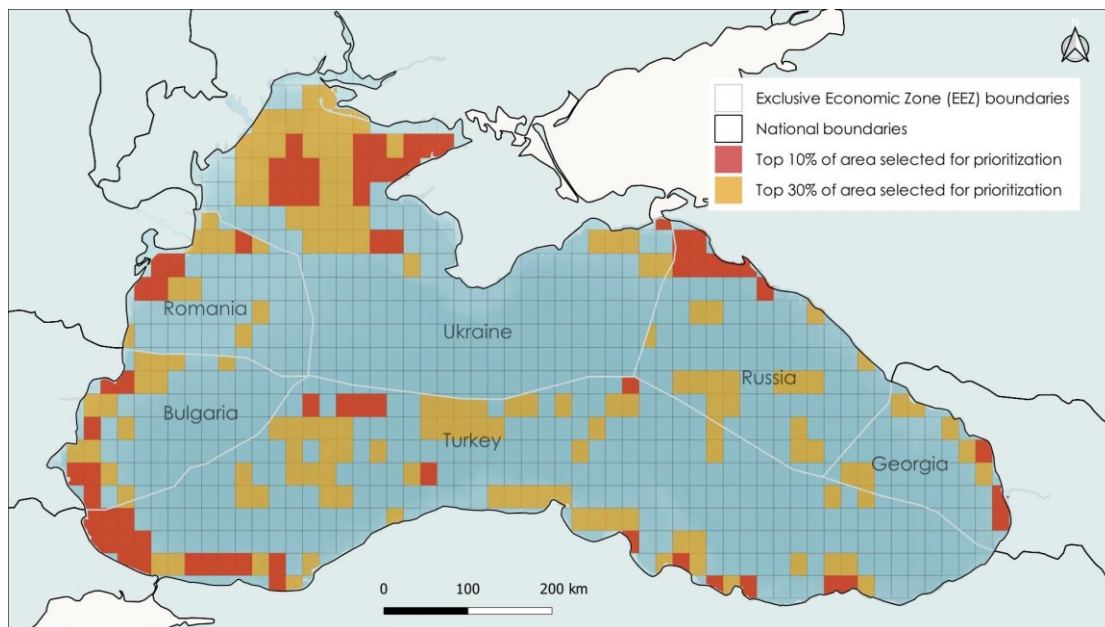
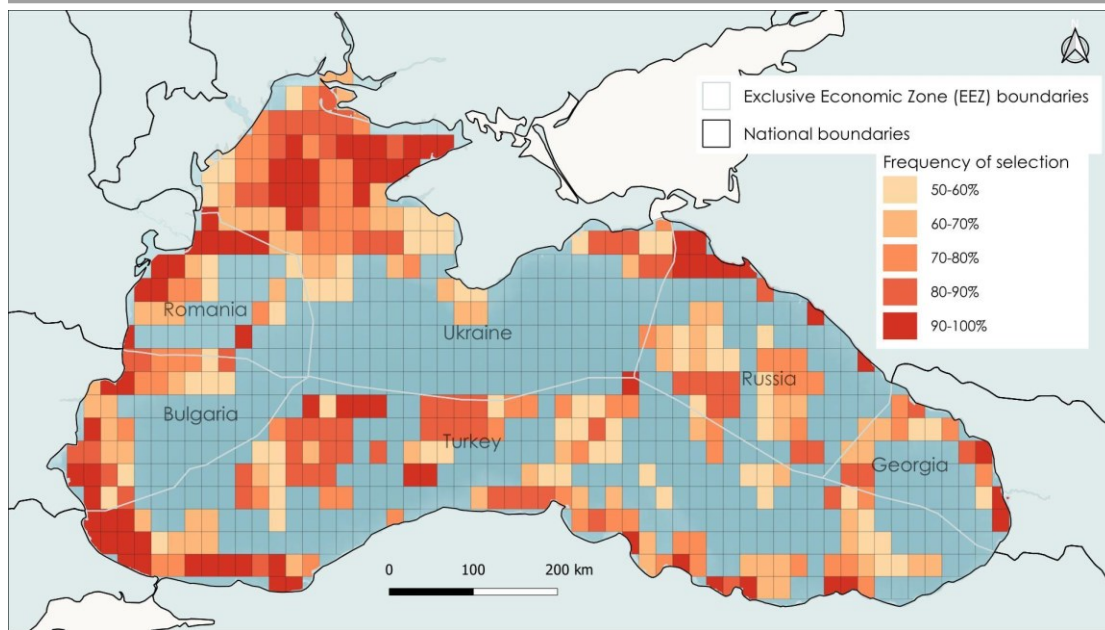


**Scenario:** Current, accounting for climate change

**Run variant:** MPAs locked in - no species weights used

### What this scenario represents

This run identifies conservation priority areas based on current and near future ((Representative Concentration Pathway 2.6 – for the year 2050) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.

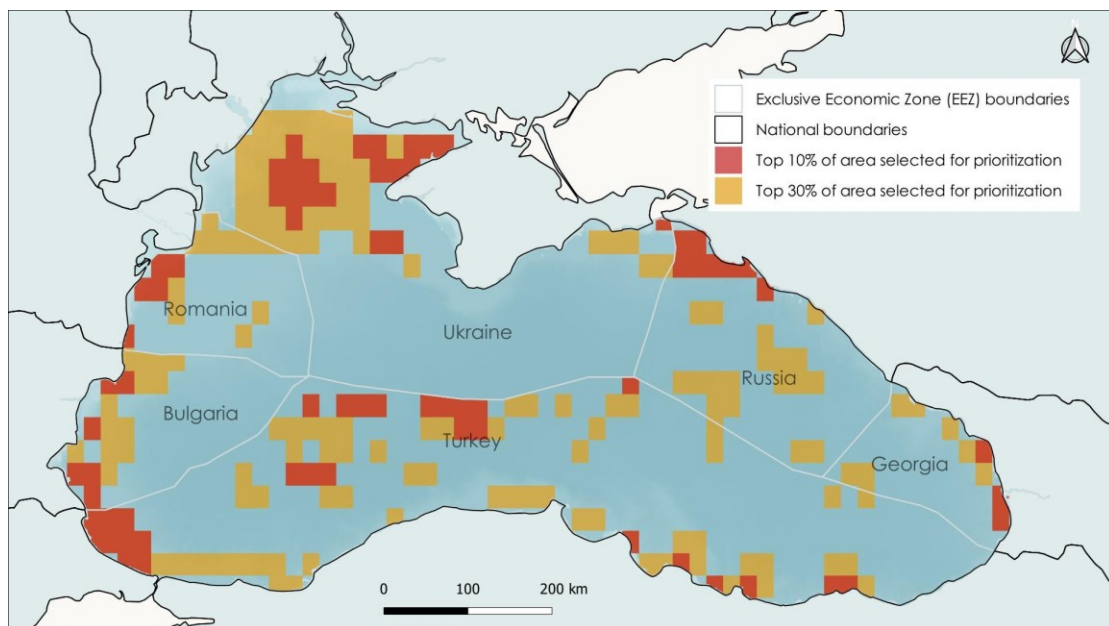
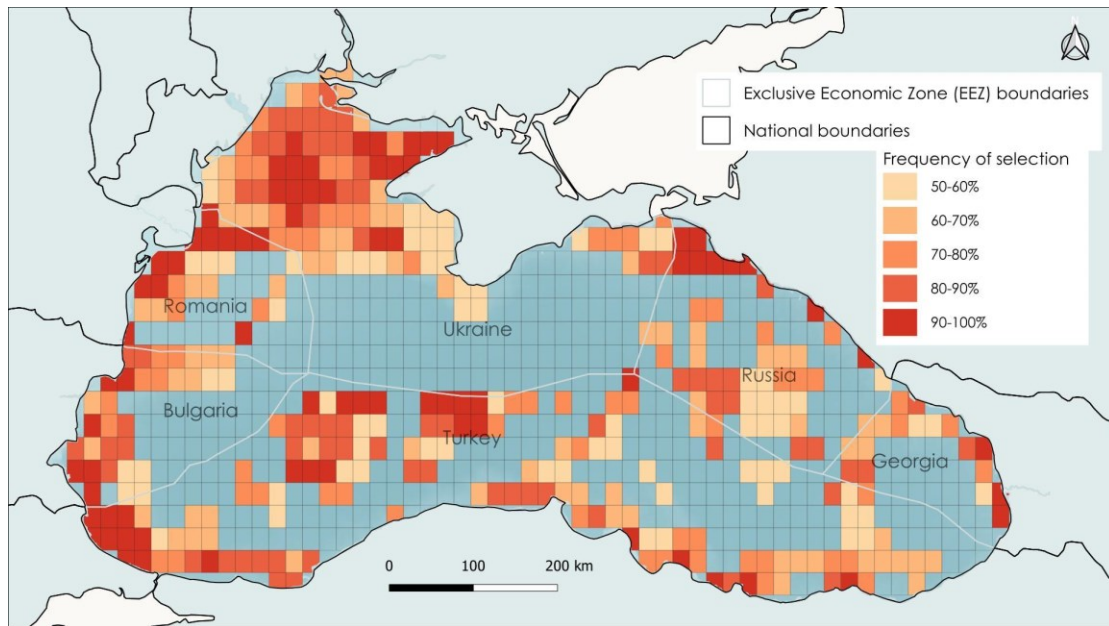




**Scenario:** *Current, accounting for climate change*  
**Run variant:** *MPAs locked in & species weights used*

### What this scenario represents

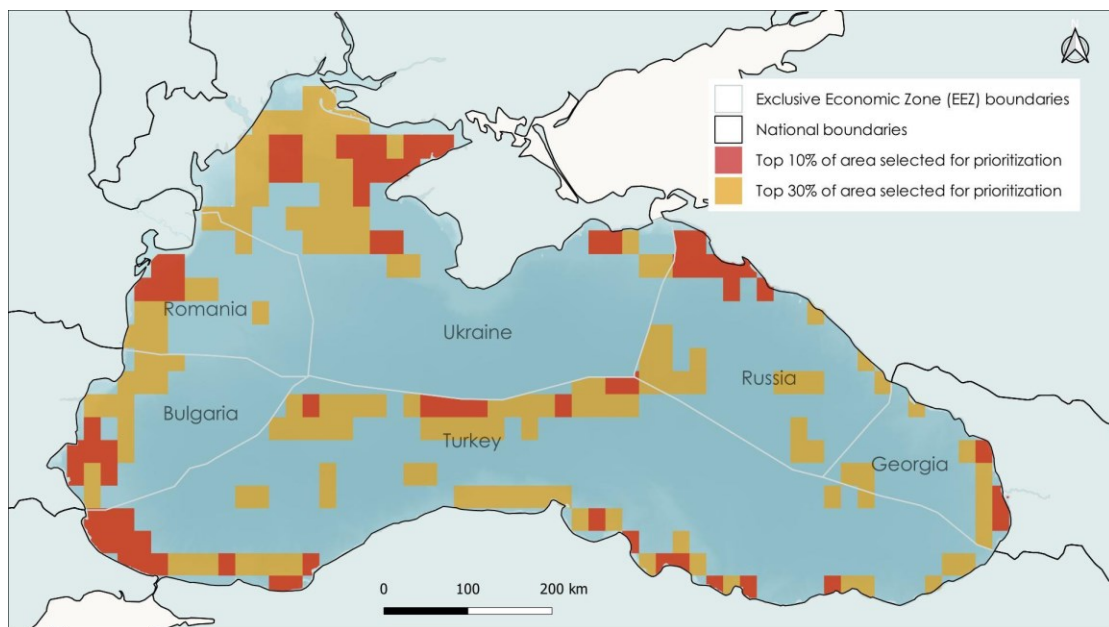
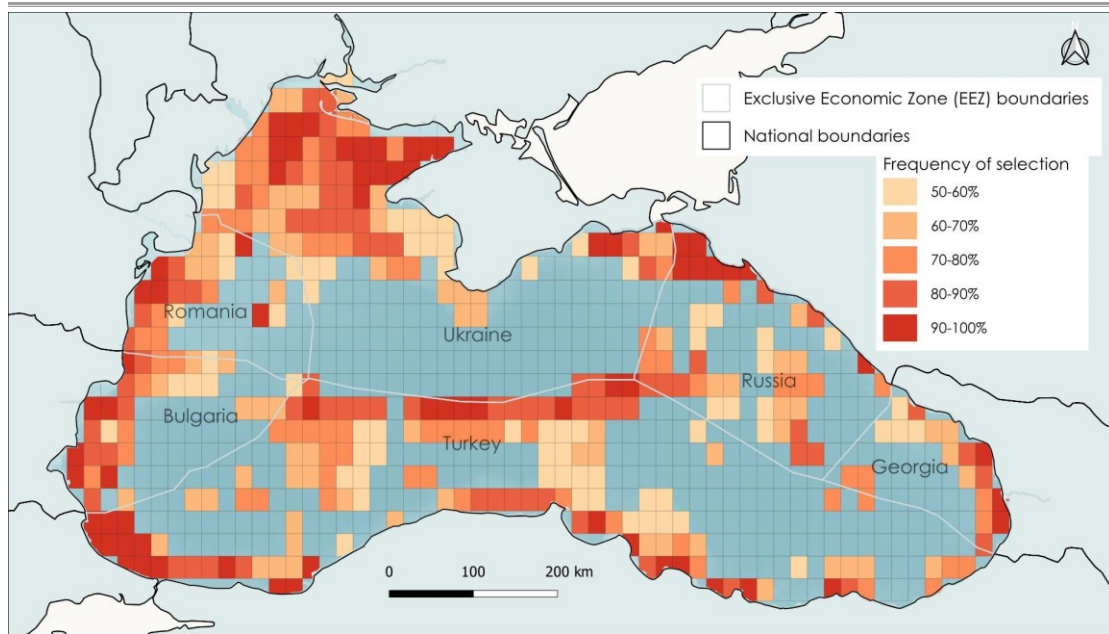
This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 2.6 – for the year 2050) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.



**Scenario:** *Current, accounting for climate change*  
**Run variant:** *No MPAs - no species weights used*

### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 2.6 – for the year 2100) species distributions in the Black Sea and areas where human activity might pose a challenge to conservation efforts.



**Scenario:** *Current, accounting for climate change*

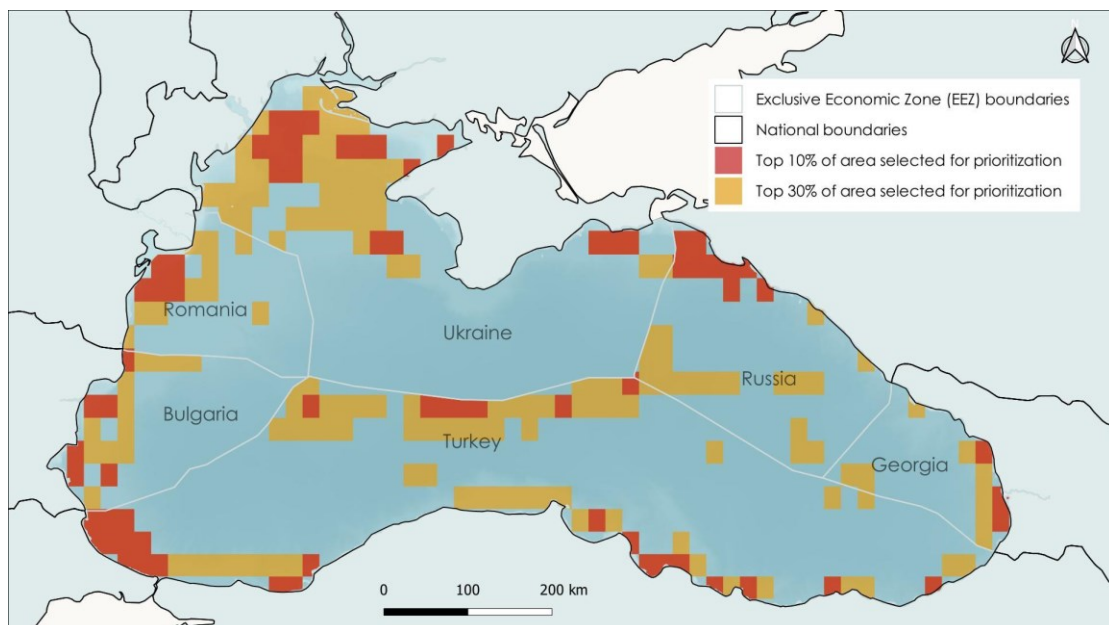
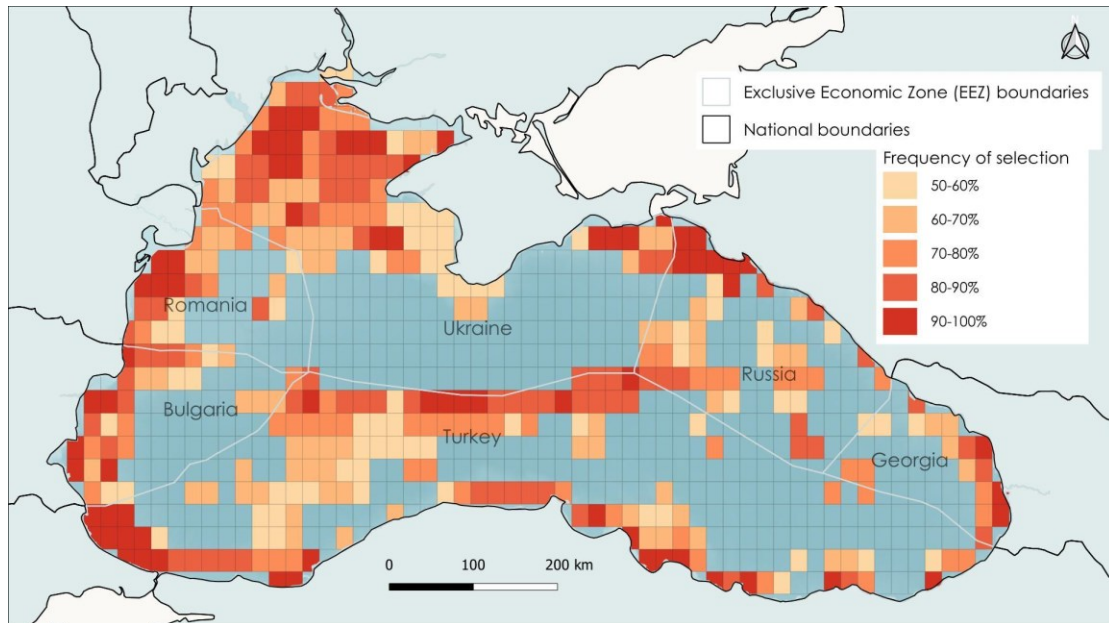
**Run variant:** *No MPAs & species weights used*

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### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 2.6 – for the year 2100) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while giving higher priority to species of greater conservation concern.

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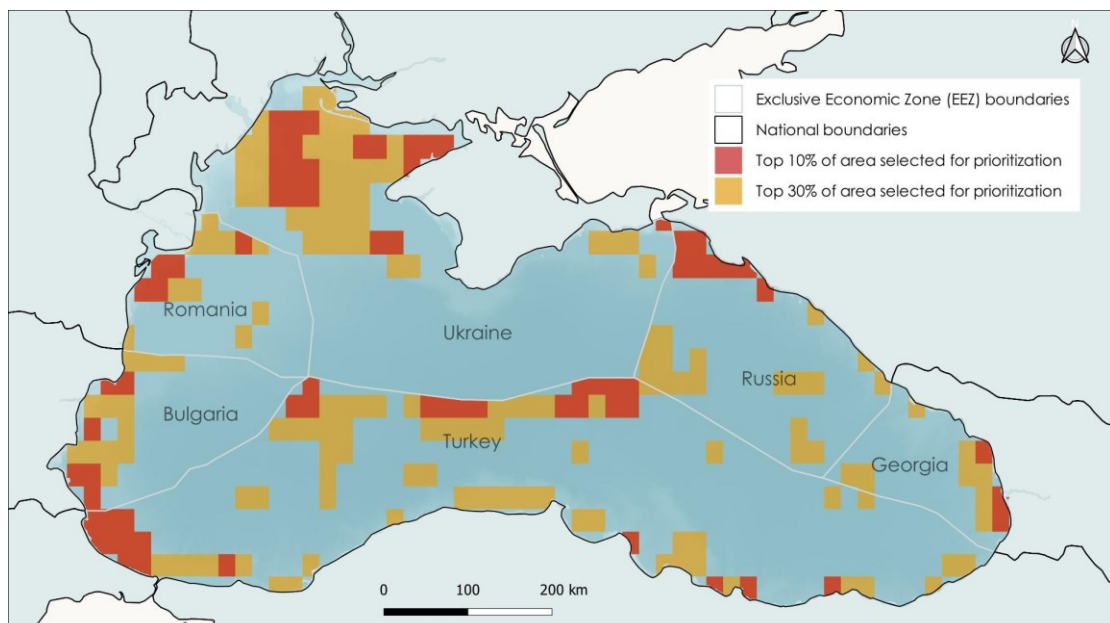
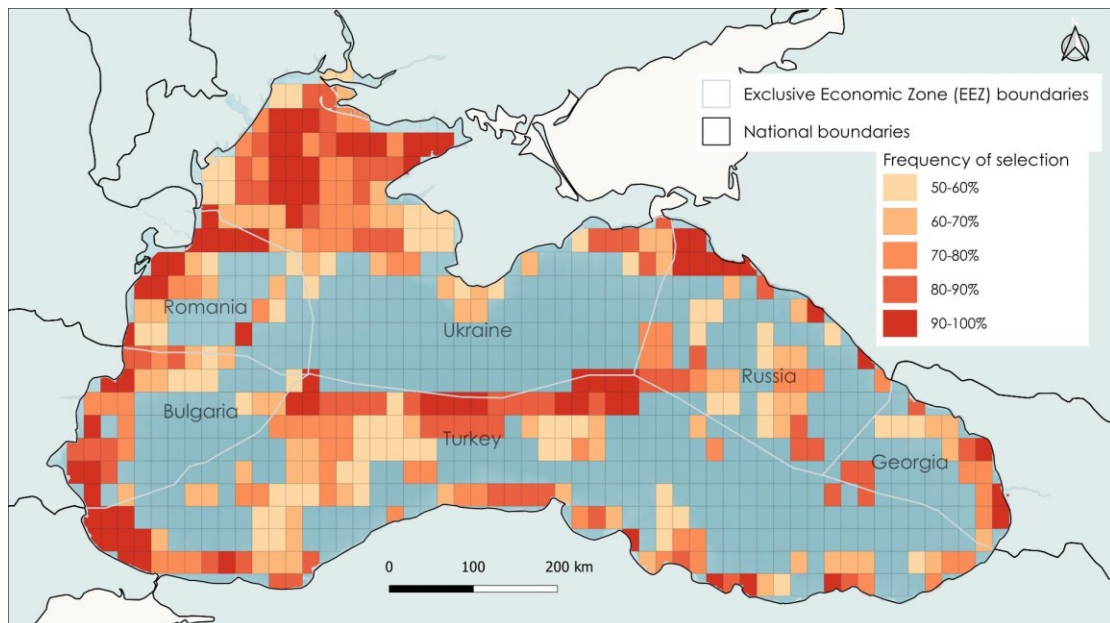




**Scenario:** *Current, accounting for climate change*  
**Run variant:** *MPAs locked in - no species weights used*

### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 2.6 – for the year 2100) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.

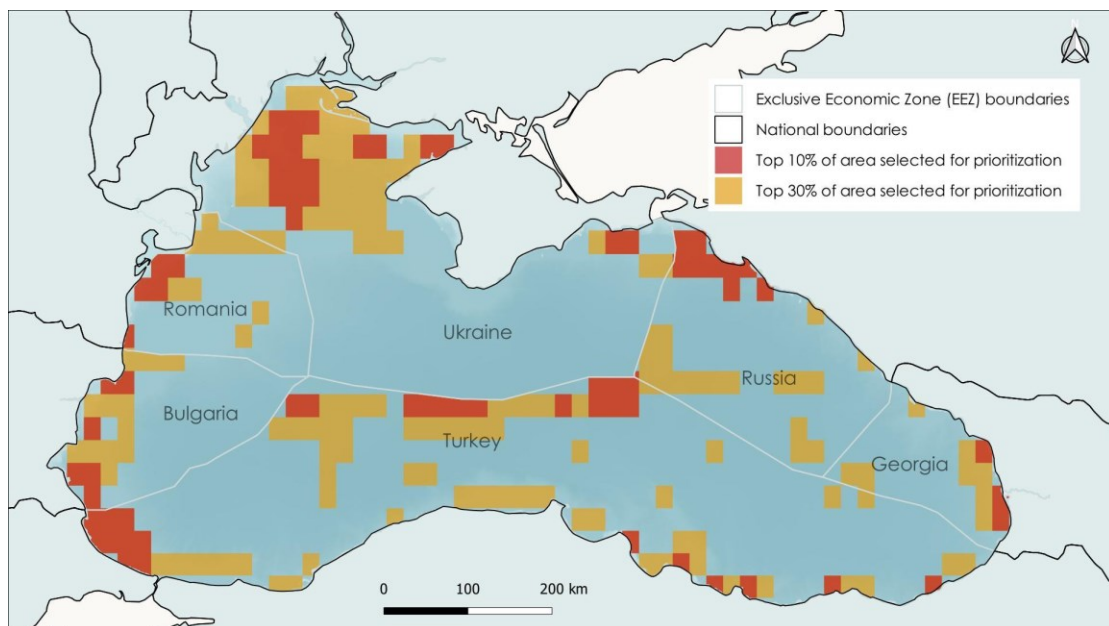
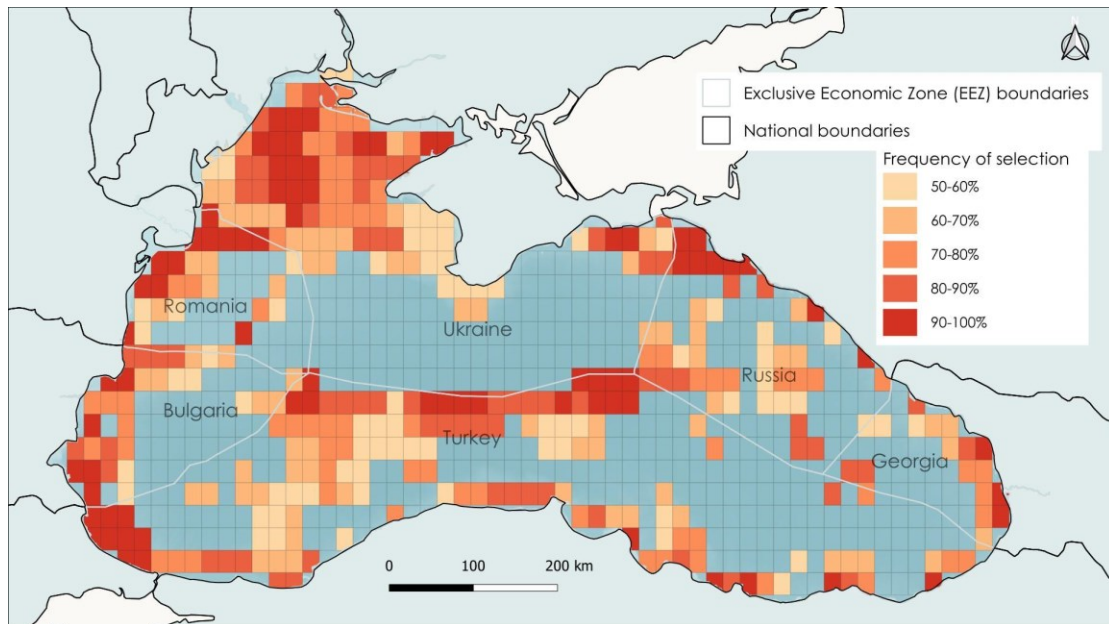




**Scenario:** *Current, accounting for climate change*  
**Run variant:** *MPAs locked in & species weights used*

### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 2.6 – for the year 2100) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.



## RCP 4.5

**Scenario:** *Current, accounting for climate change*

**Run variant:** *No MPAs - no species weights used*

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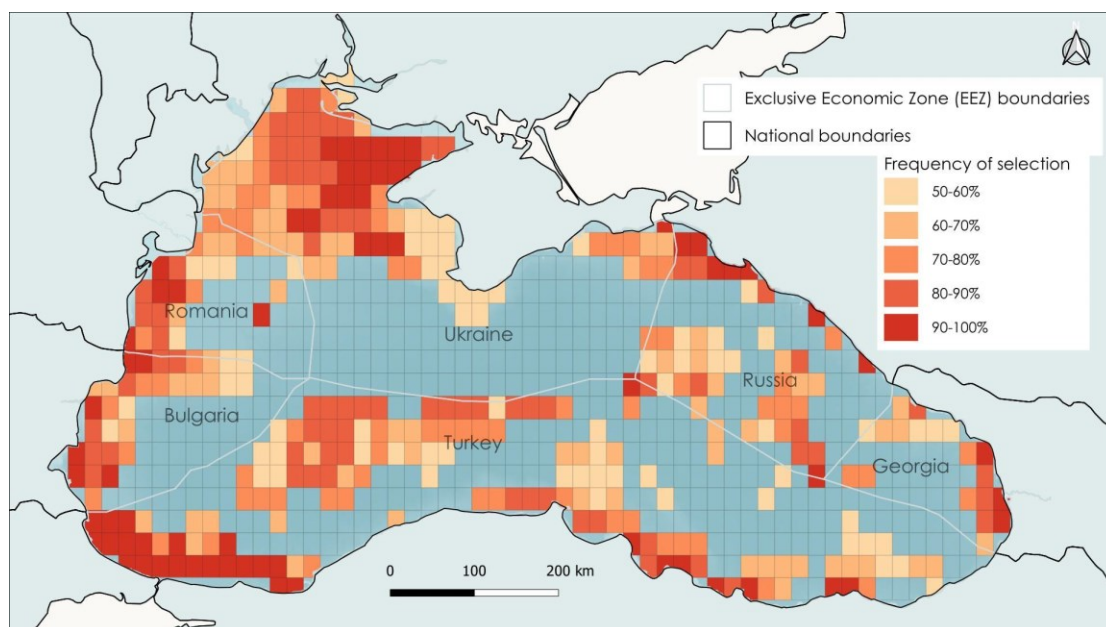
### What this scenario represents

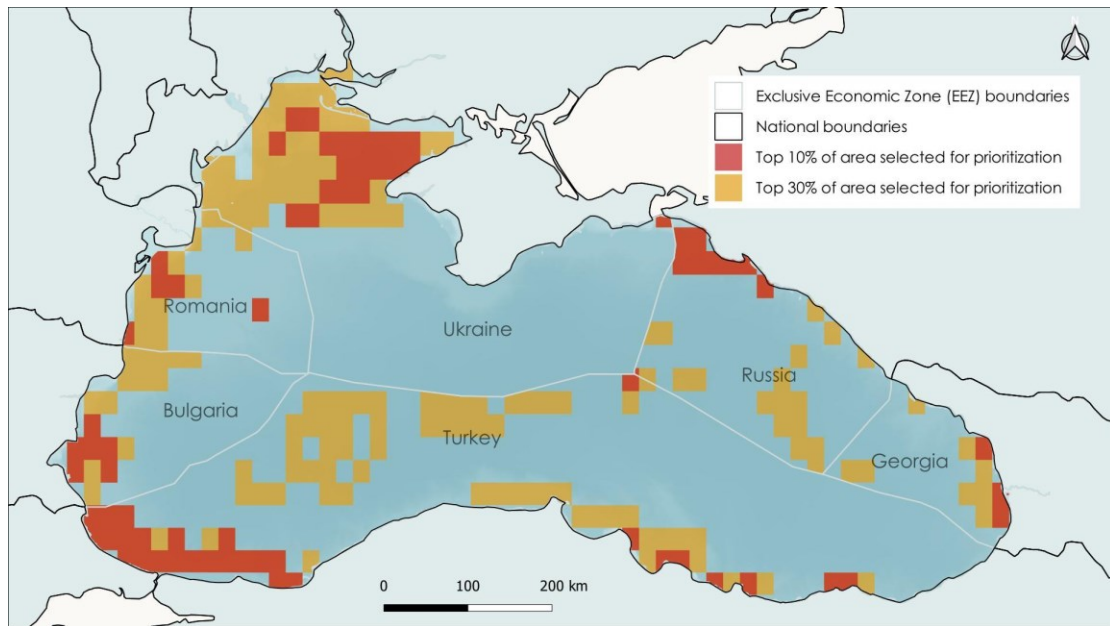
This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 4.5 – for the year 2050) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts.

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### Climate scenario used:

The analysis is based on species distribution models projected under RCP 4.5, an intermediate scenario where CO<sub>2</sub> emissions peak around 2040 and then decline gradually. It involves moderate reductions in methane and sulphur dioxide emissions, along with some negative emissions measures like carbon absorption by forests. This pathway is projected to lead to a global temperature rise between 2 °C and 3 °C by 2100.



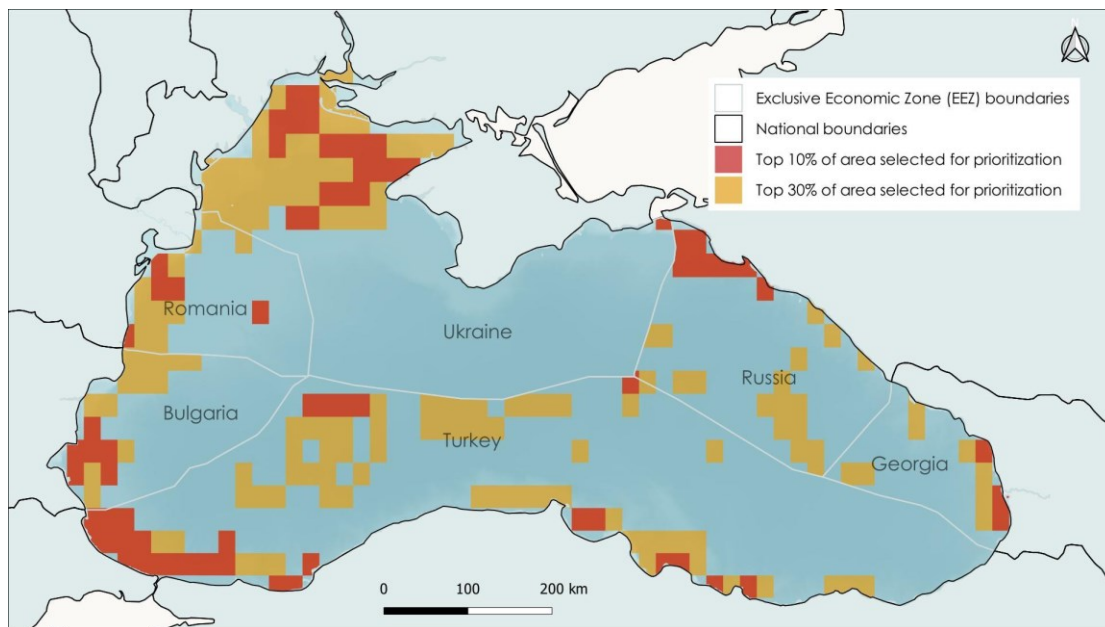
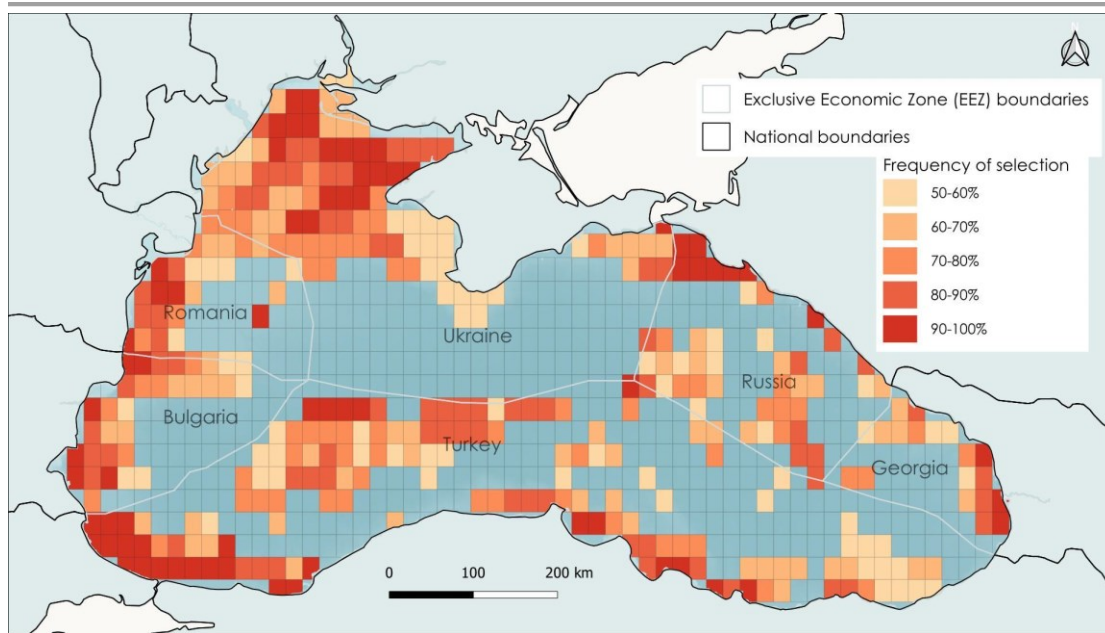


**Scenario:** Current, accounting for climate change

**Run variant:** No MPAs & species weights used

### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 4.5 – for the year 2050) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while giving higher priority to species of greater conservation concern.





**Scenario:** *Current, accounting for climate change*

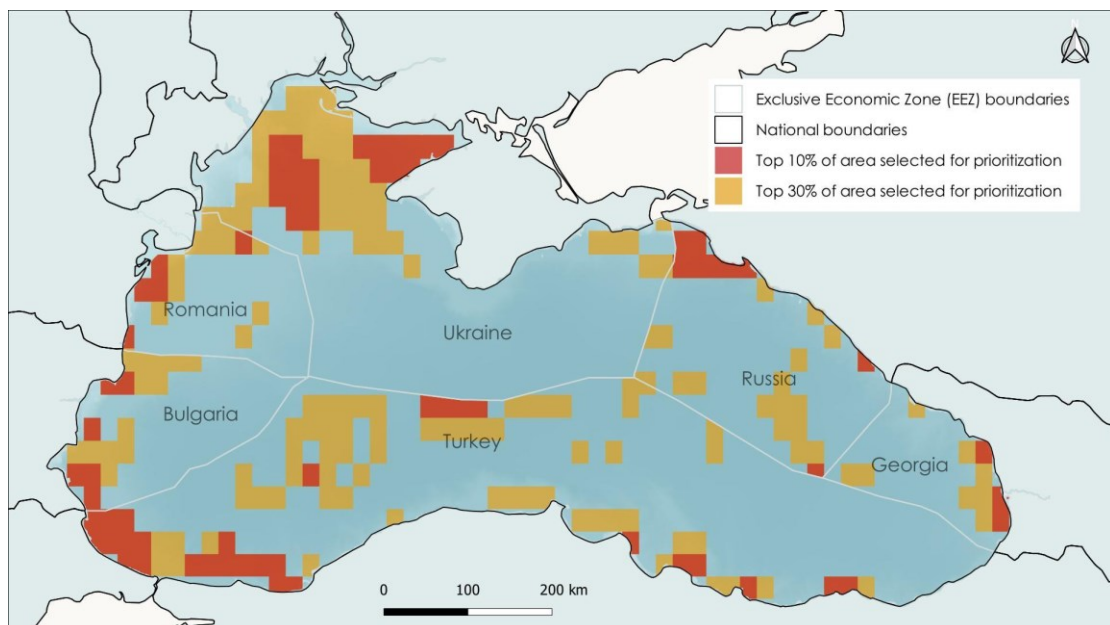
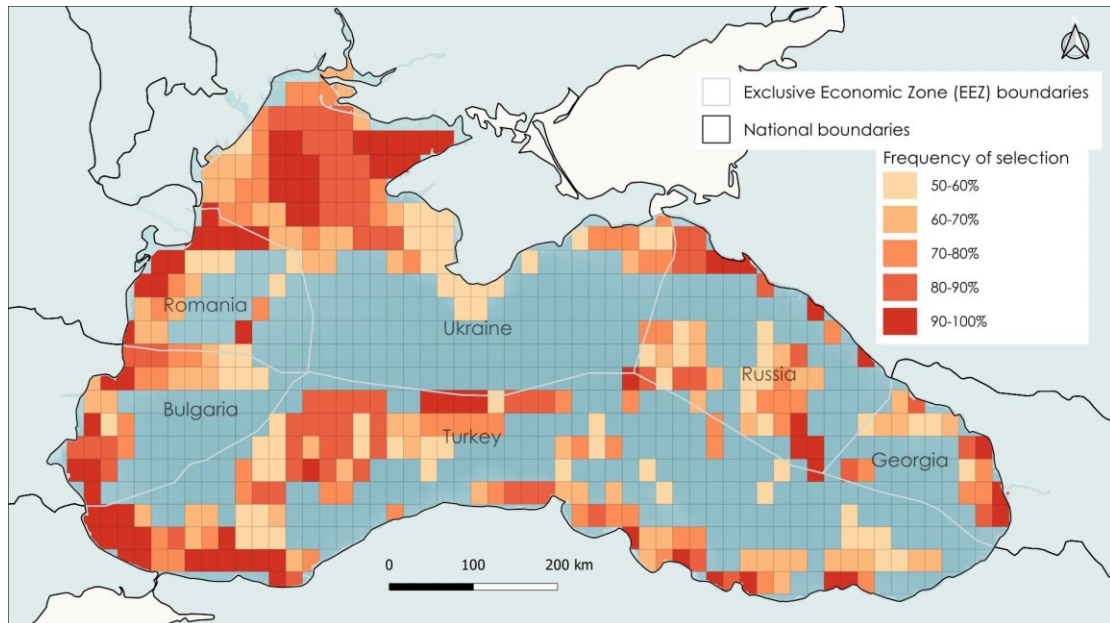
**Run variant:** *MPAs locked in - no species weights used*

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### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 4.5 – for the year 2050) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.

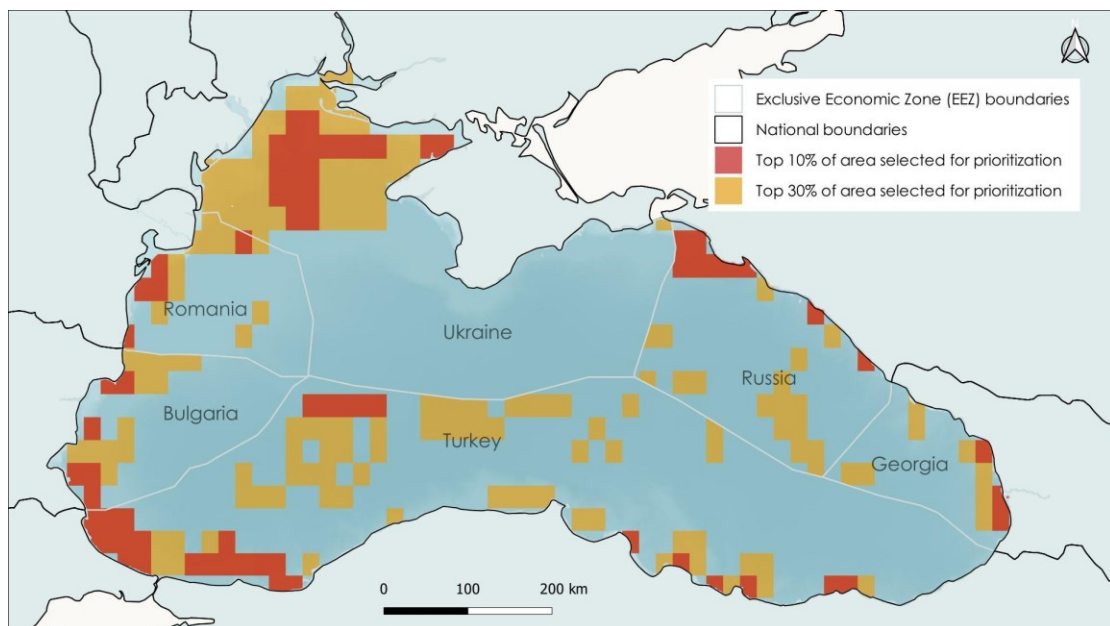
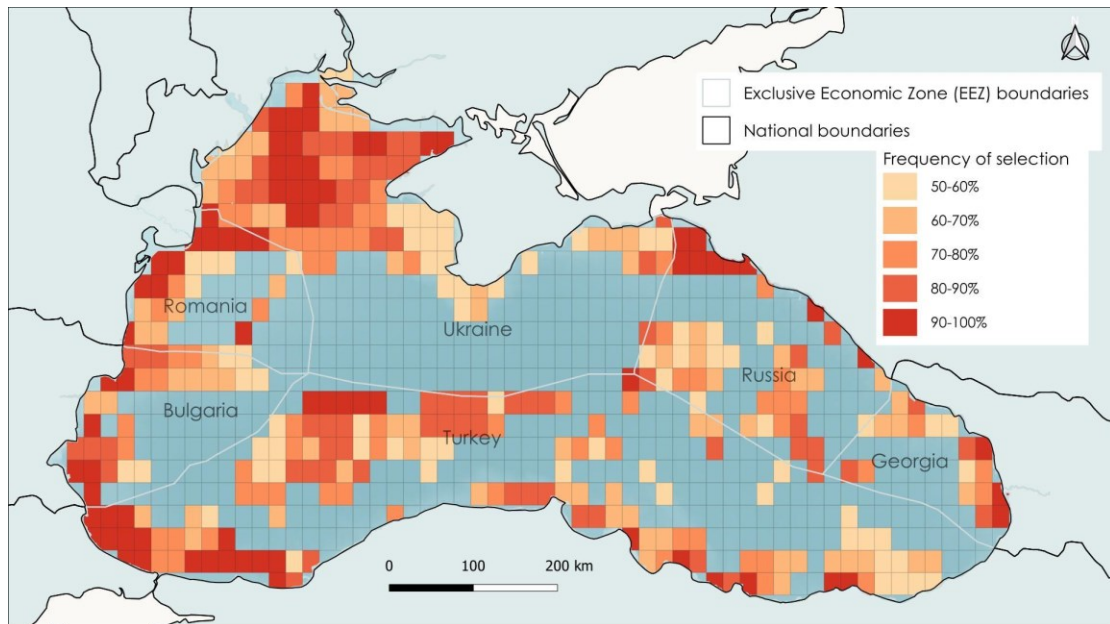
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**Scenario:** *Current, accounting for climate change*  
**Run variant:** *MPAs locked in & species weights used*

### What this scenario represents

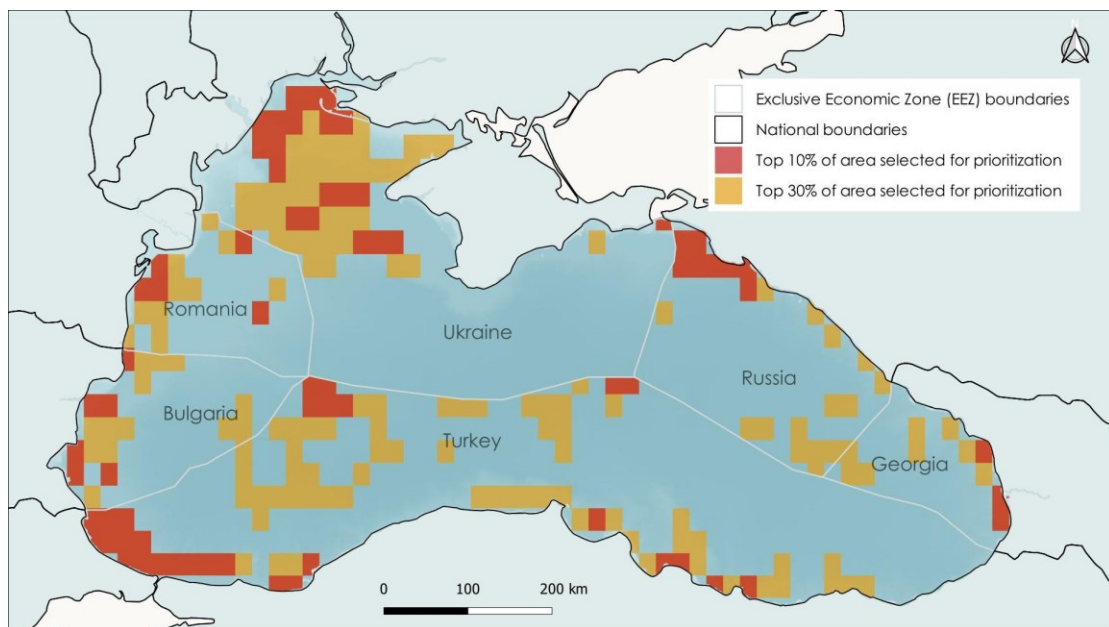
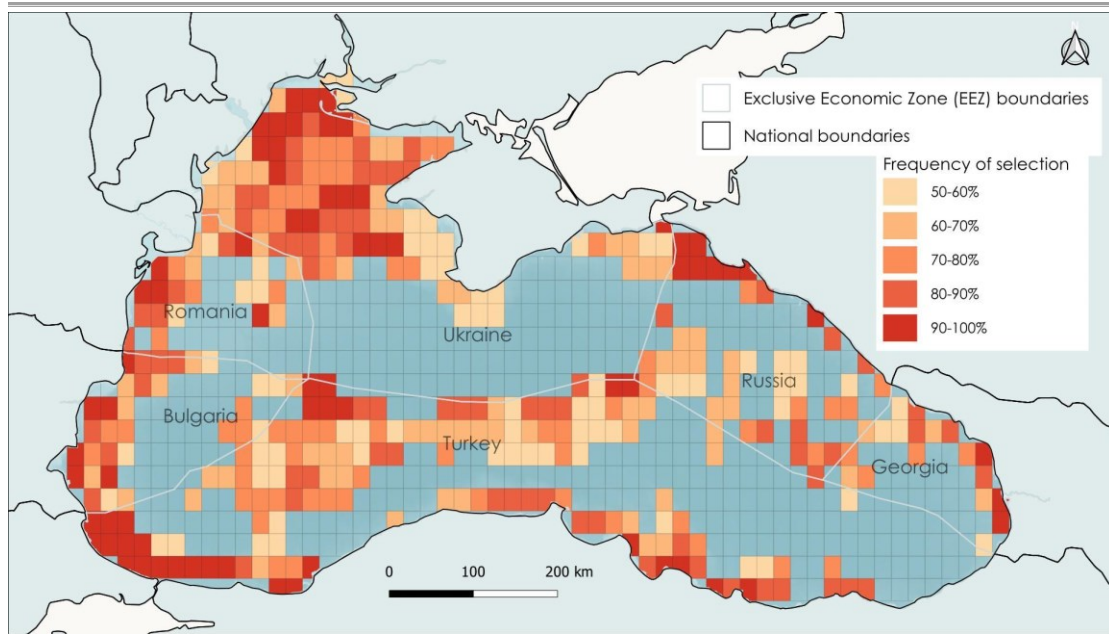
This run identifies conservation priority areas based on current and near future ((Representative Concentration Pathway 4.5 – for the year 2050) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.



**Scenario:** *Current, accounting for climate change*  
**Run variant:** *No MPAs - no species weights used*

### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 4.5 – for the year 2100) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts.

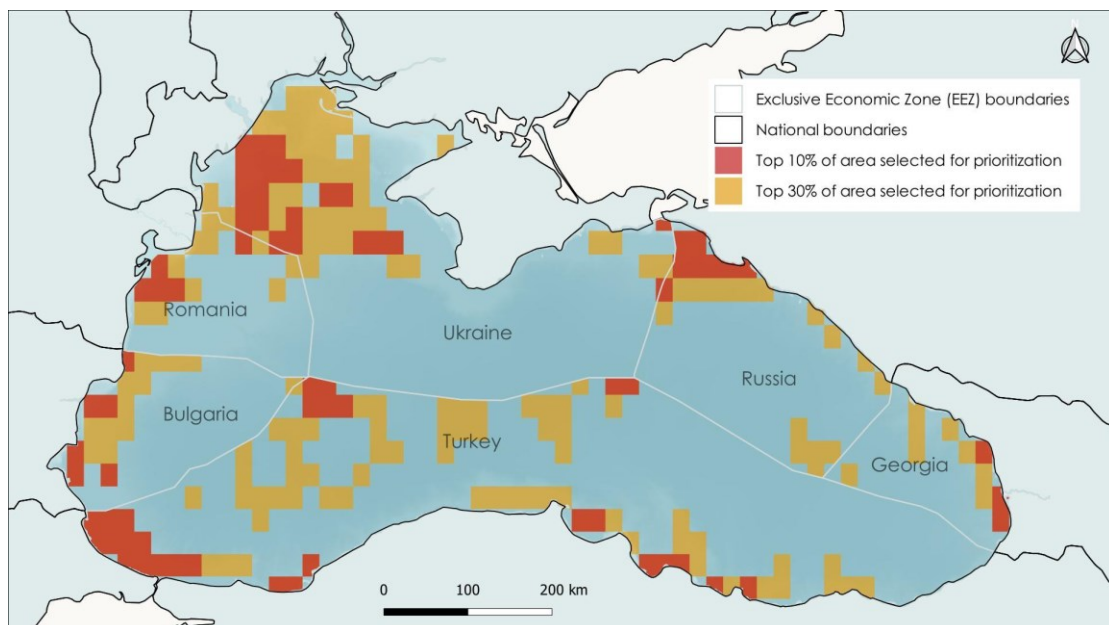
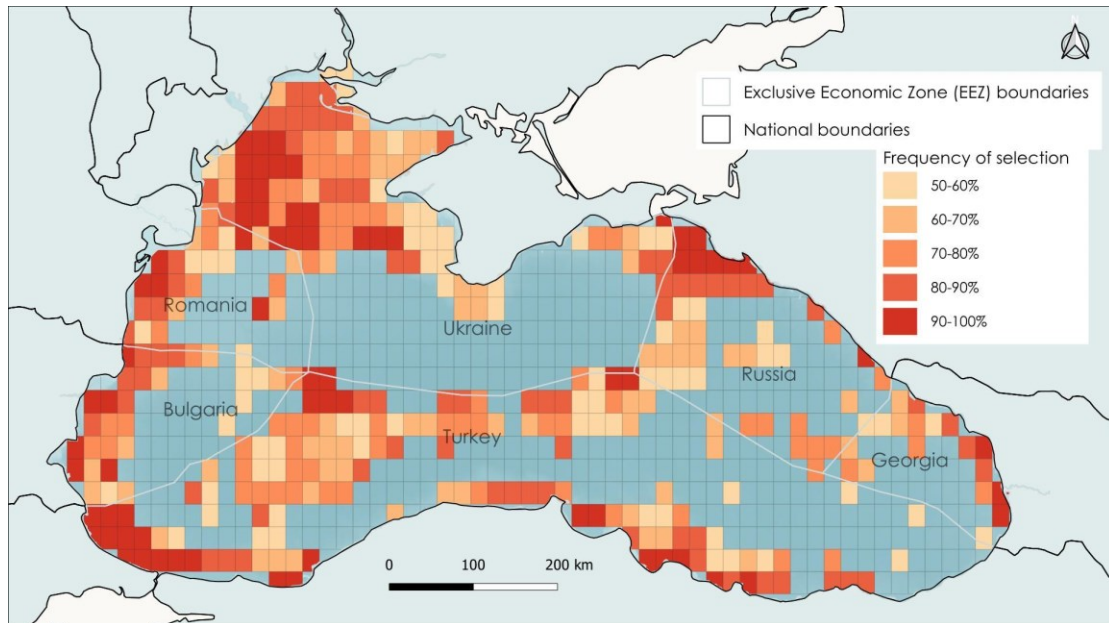




**Scenario:** *Current, accounting for climate change*  
**Run variant:** *No MPAs & species weights used*

### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 4.5 – for the year 2100) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while giving higher priority to species of greater conservation concern.





**Scenario:** *Current, accounting for climate change*

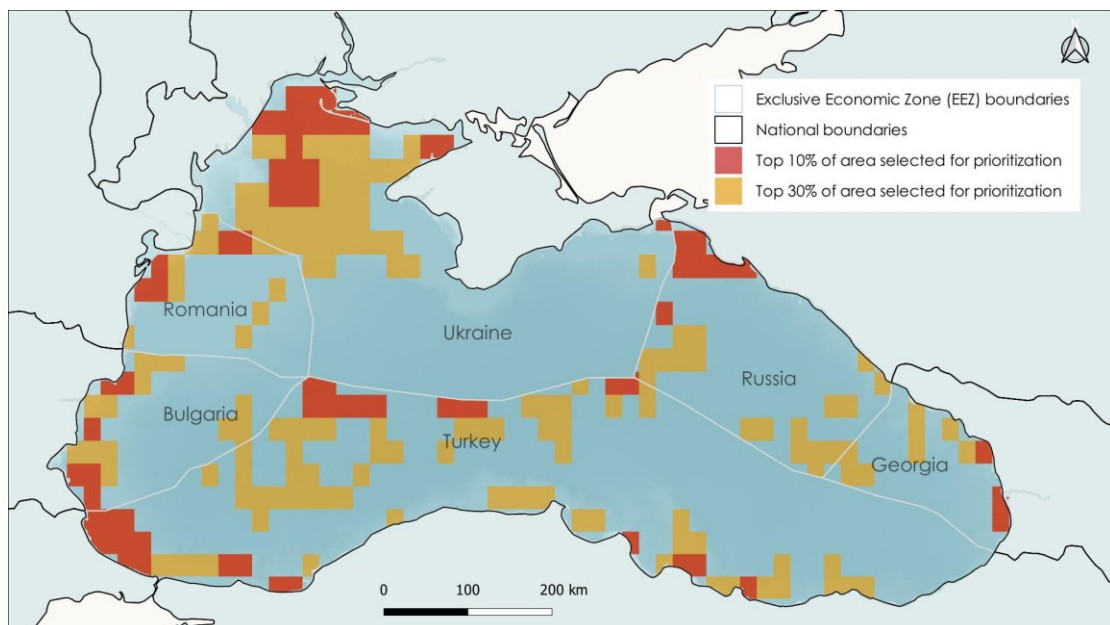
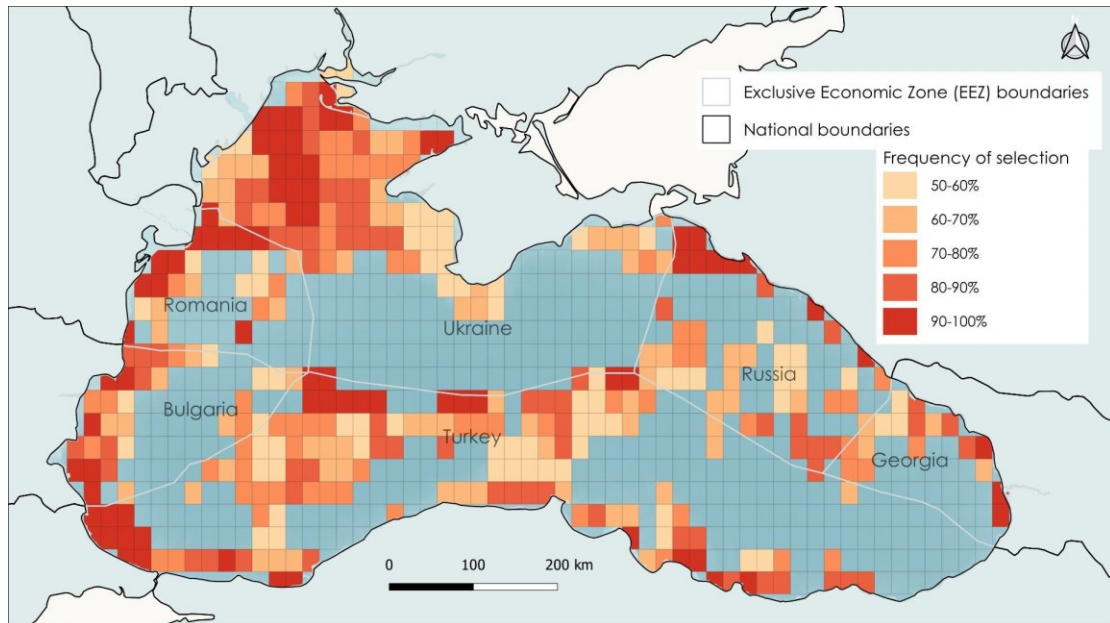
**Run variant:** *MPAs locked in - no species weights used*

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### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 4.5 – for the year 2100) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.

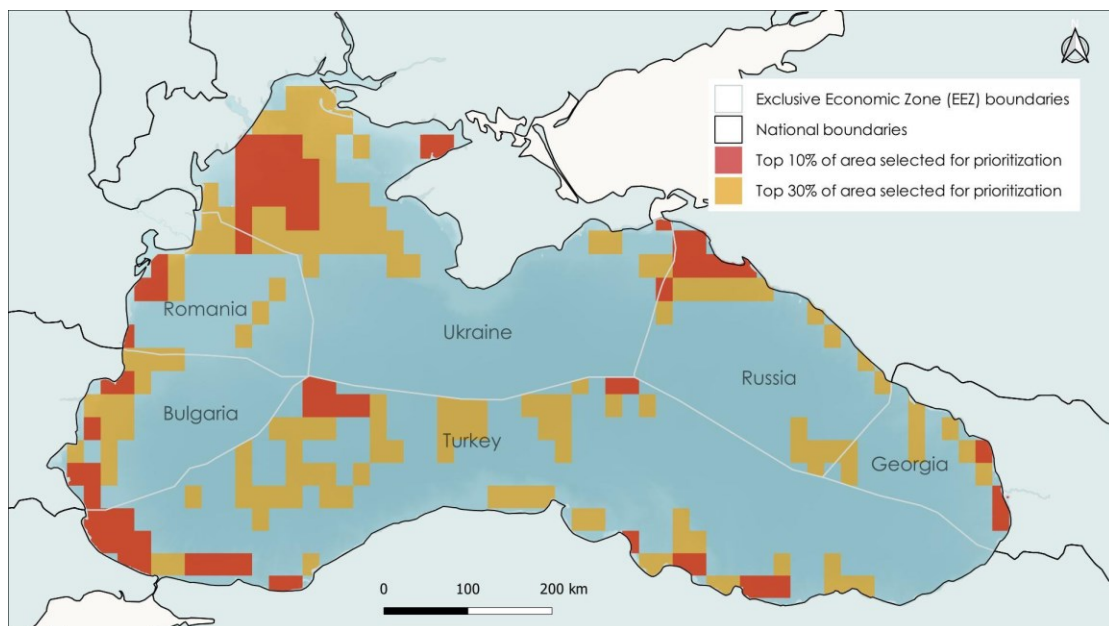
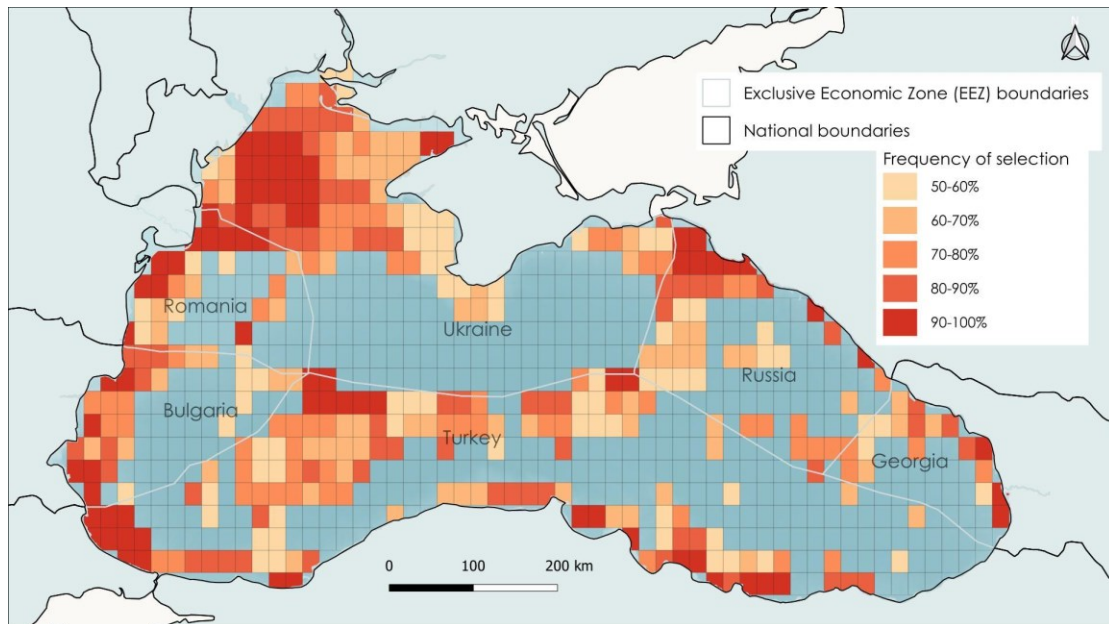
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**Scenario:** *Current, accounting for climate change*  
**Run variant:** *MPAs locked in & species weights used*

### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 4.5 – for the year 2100) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.



## RCP 8.5

**Scenario:** *Current, accounting for climate change*

**Run variant:** *No MPAs locked in - no species weights used*

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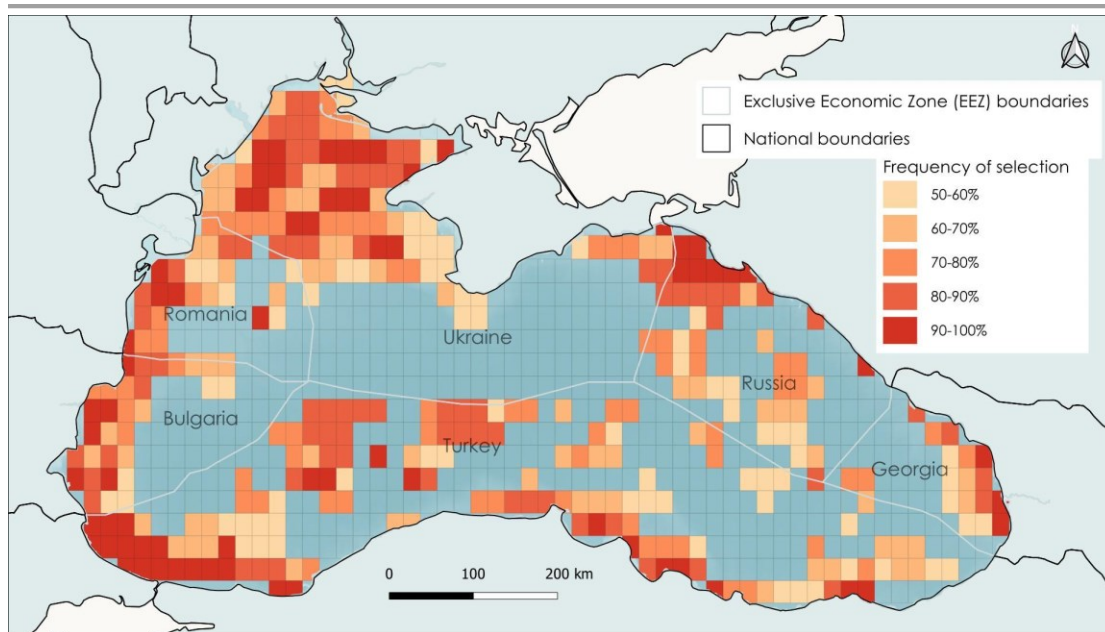
### What this scenario represents

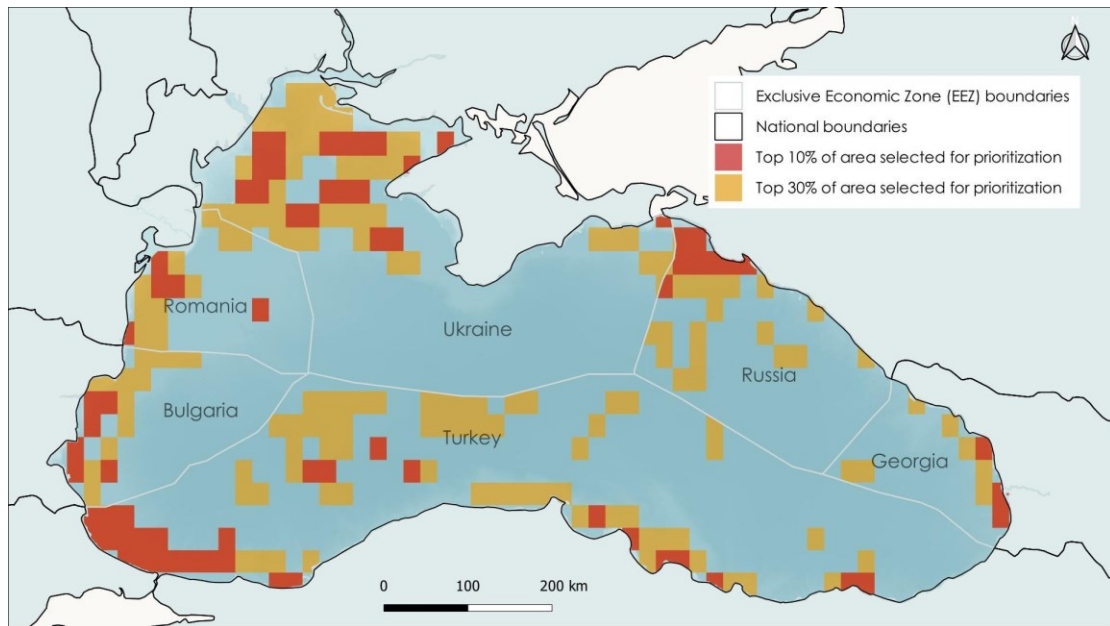
This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 8.5 – for the year 2050) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts.

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### Climate scenario used:

The analysis is based on species distribution models projected under RCP 8.5, a high-emissions scenario where greenhouse gas emissions continue to increase throughout the century. This pathway assumes limited climate action and results in substantial warming and sea level rise by 2100, posing significant risks to ecosystems and human societies.







**Scenario:** *Current, accounting for climate change*

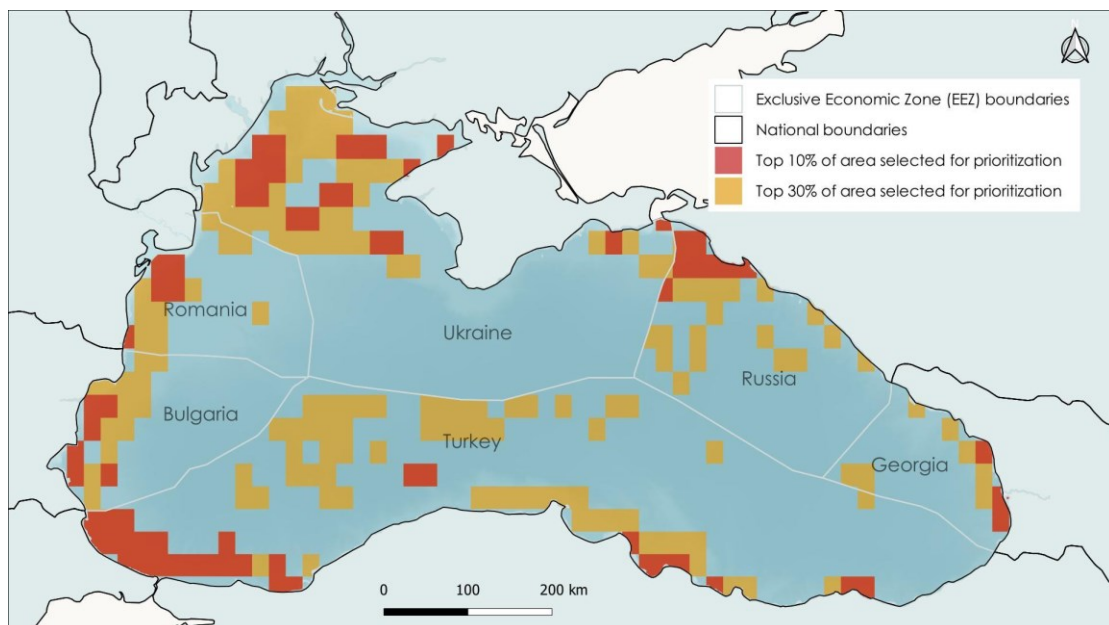
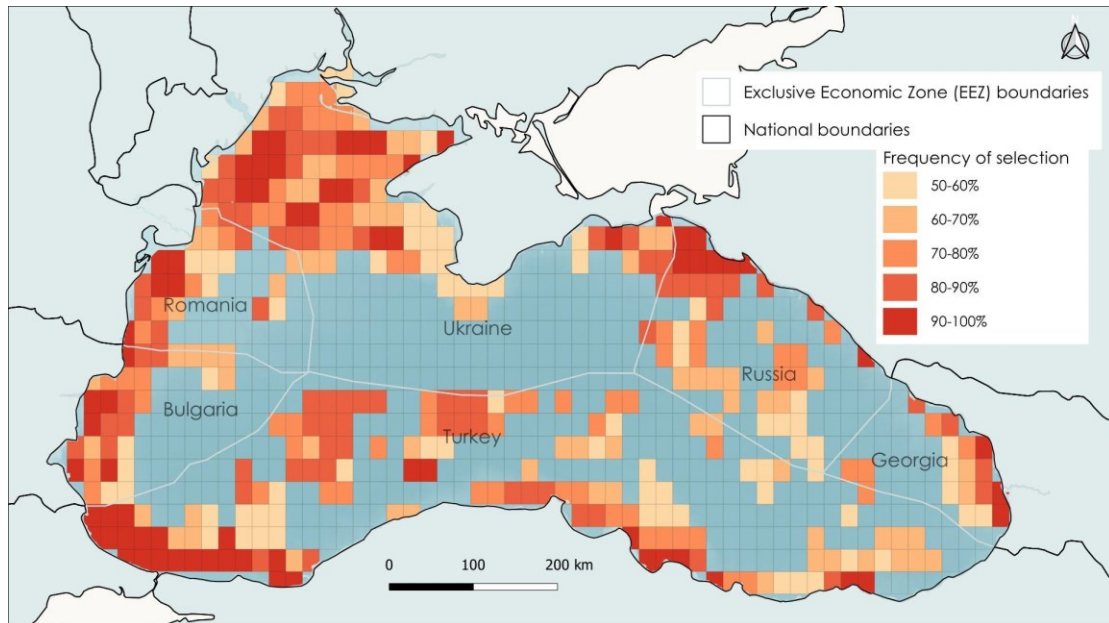
**Run variant:** *No MPAs & species weights used*

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### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 8.5 – for the year 2050) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while giving higher priority to species of greater conservation concern.

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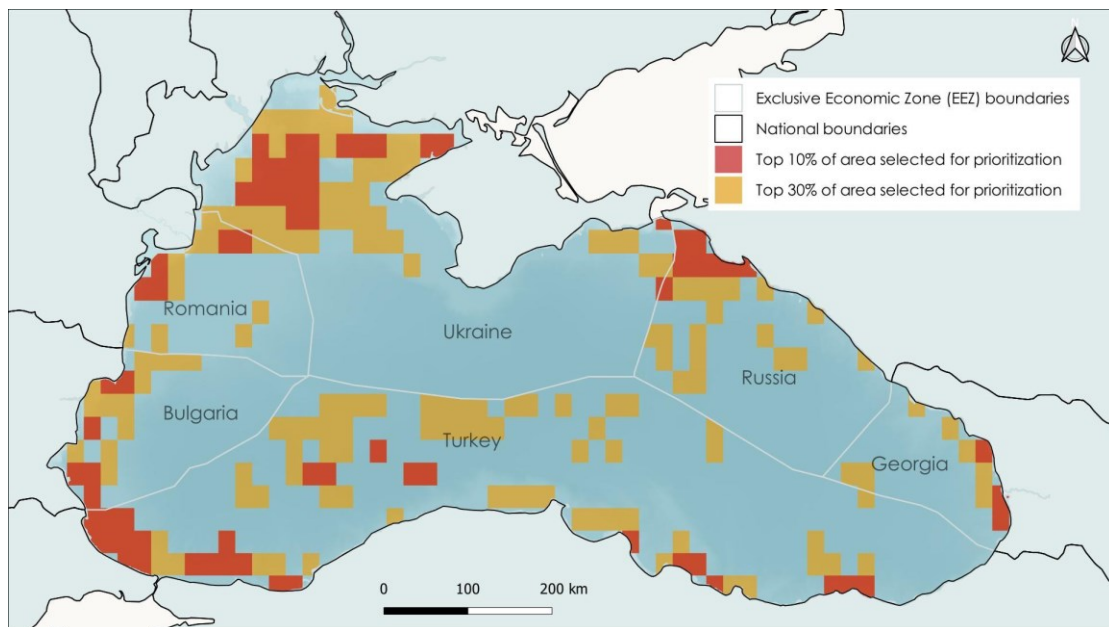
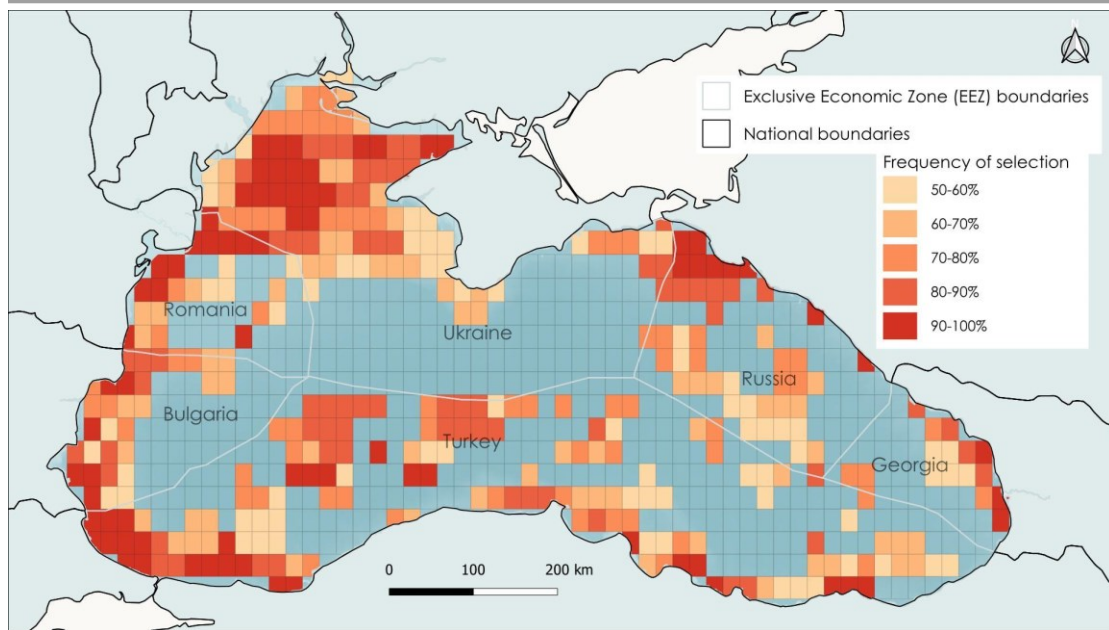


**Scenario:** Current, accounting for climate change

**Run variant:** MPAs locked in - no species weights used

### What this scenario represents

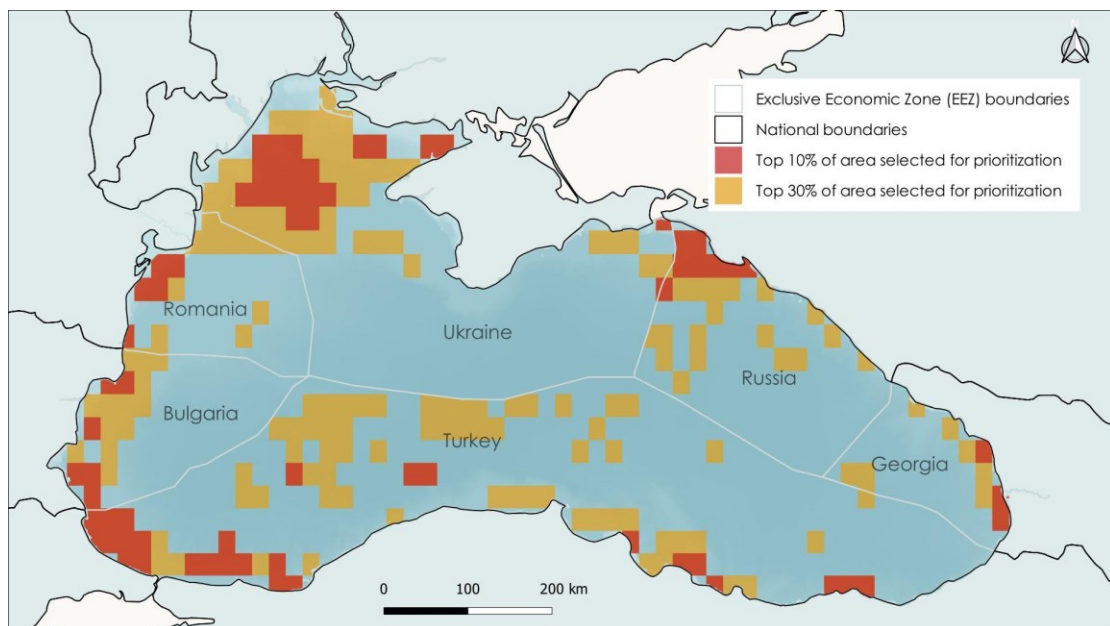
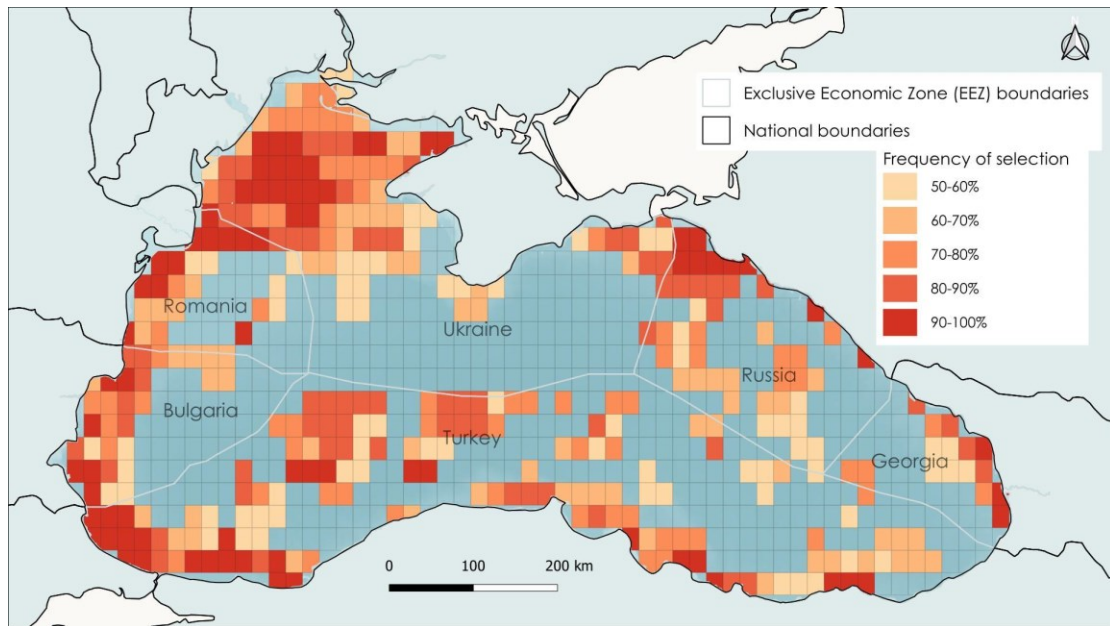
This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 8.5 – for the year 2050) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.



**Scenario:** *Current, accounting for climate change*  
**Run variant:** *MPAs locked in & species weights used*

### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 8.5 – for the year 2050) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.



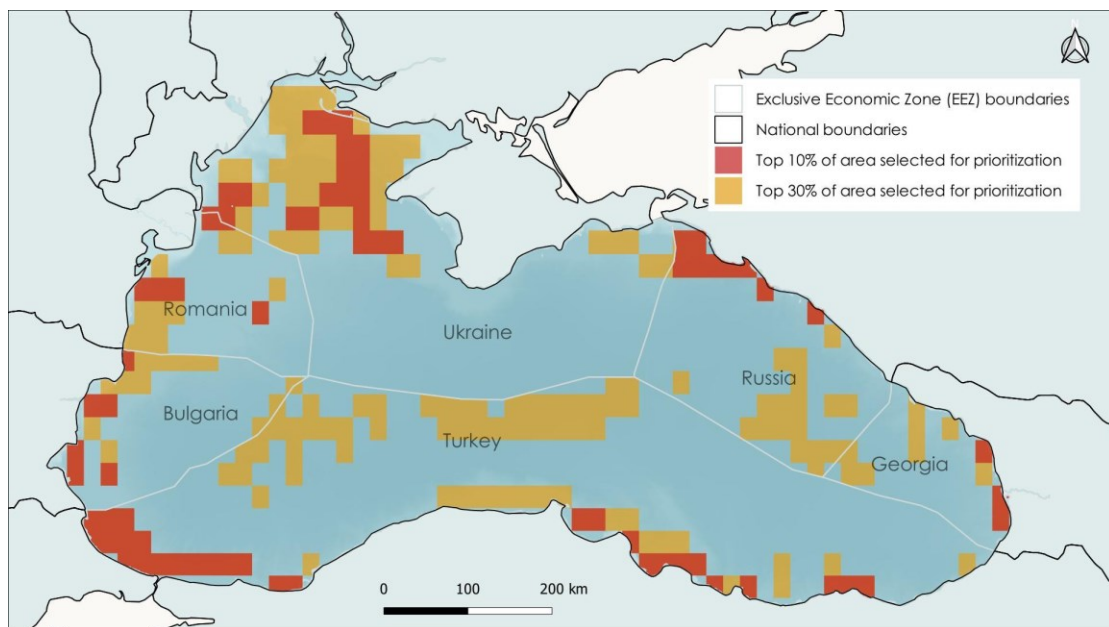
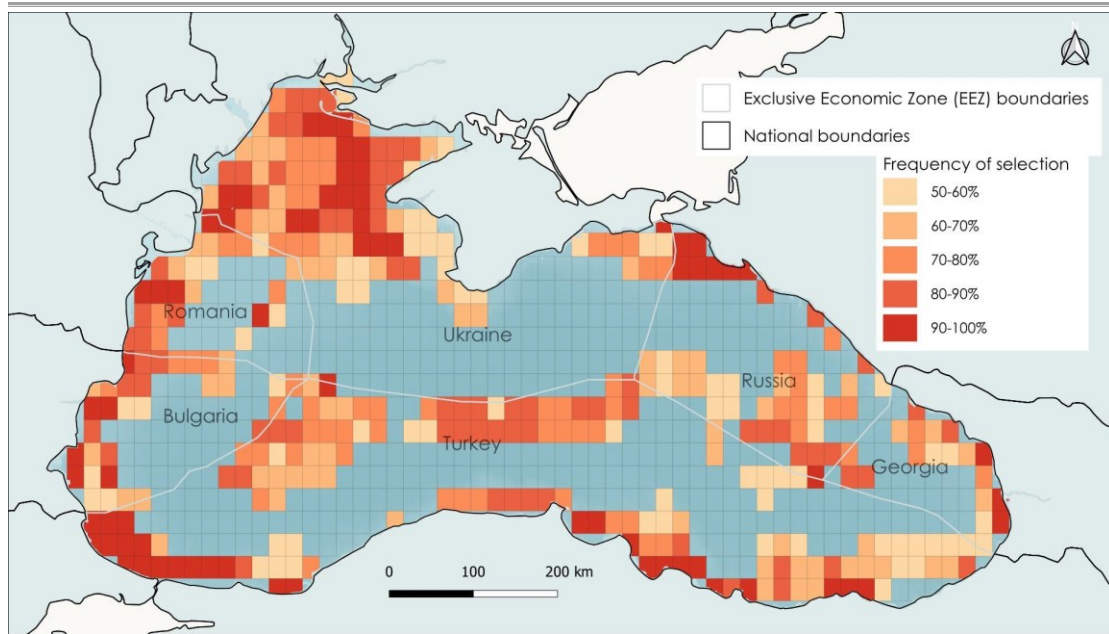


**Scenario:** *Current, accounting for climate change*

**Run variant:** *No MPAs locked in - no species weights used*

### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 8.5 – for the year 2100) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts.





**Scenario:** *Current, accounting for climate change*

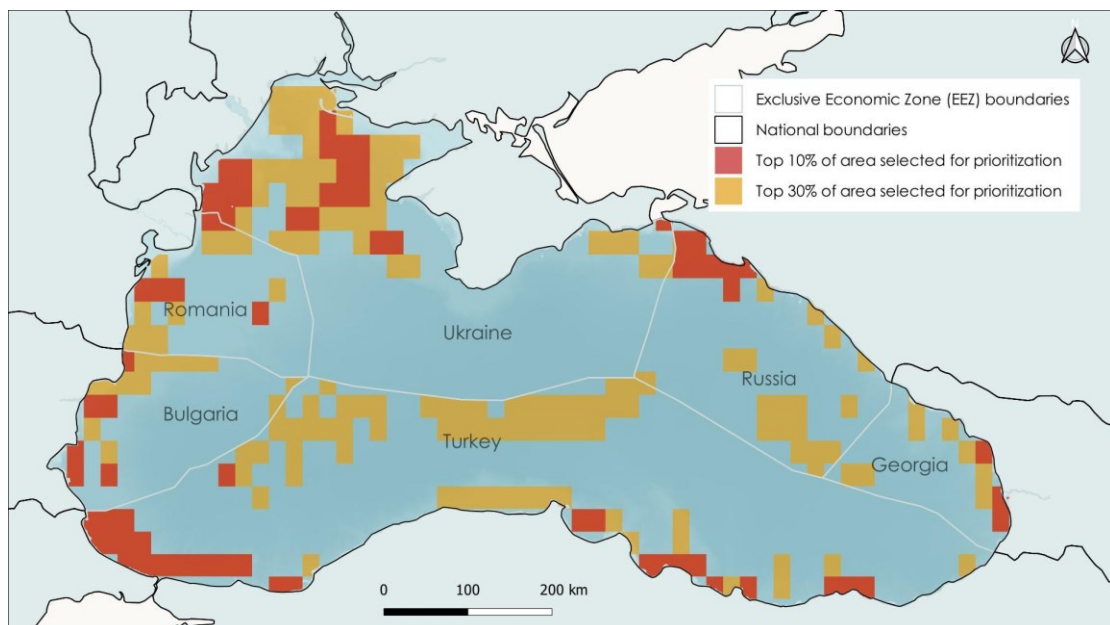
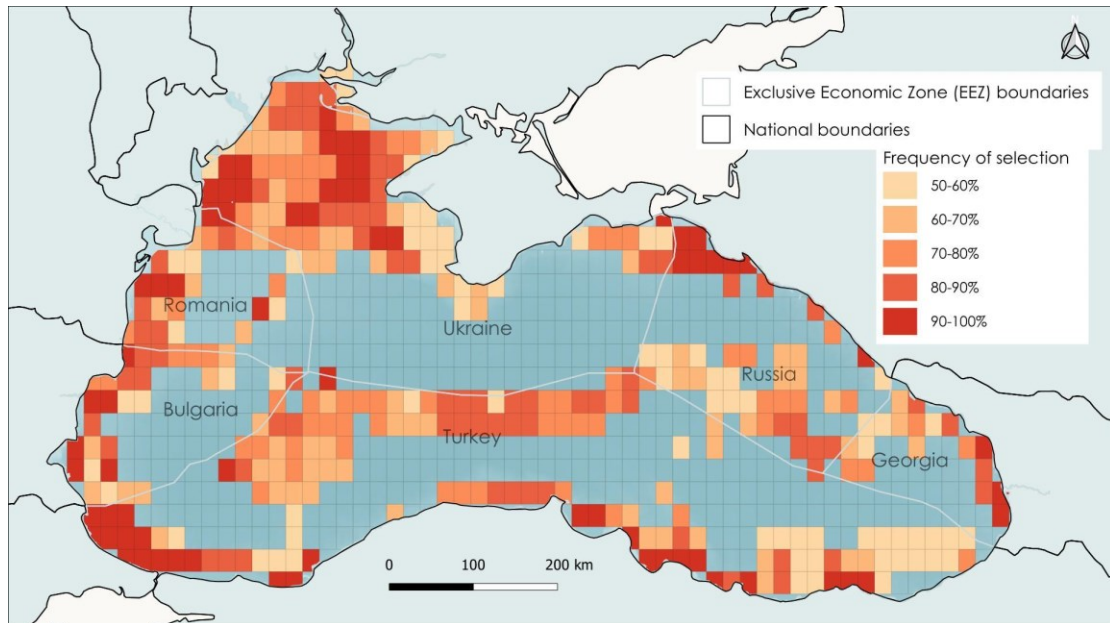
**Run variant:** *No MPAs locked in - species weights used*

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### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 8.5 – for the year 2100) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while giving higher priority to species of greater conservation concern.

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**Scenario:** *Current, accounting for climate change*

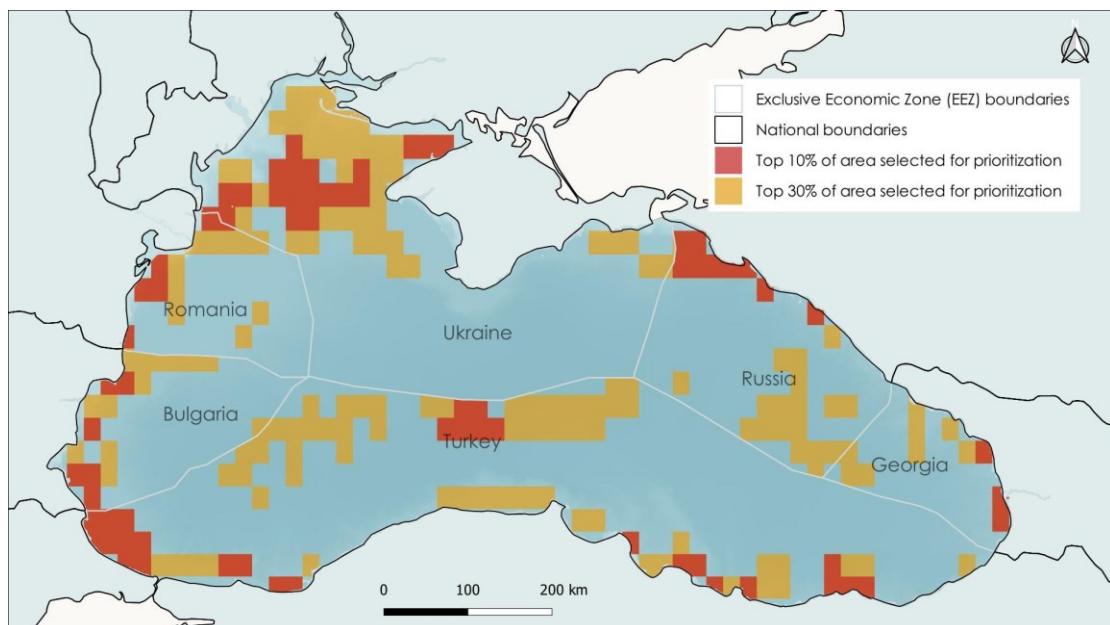
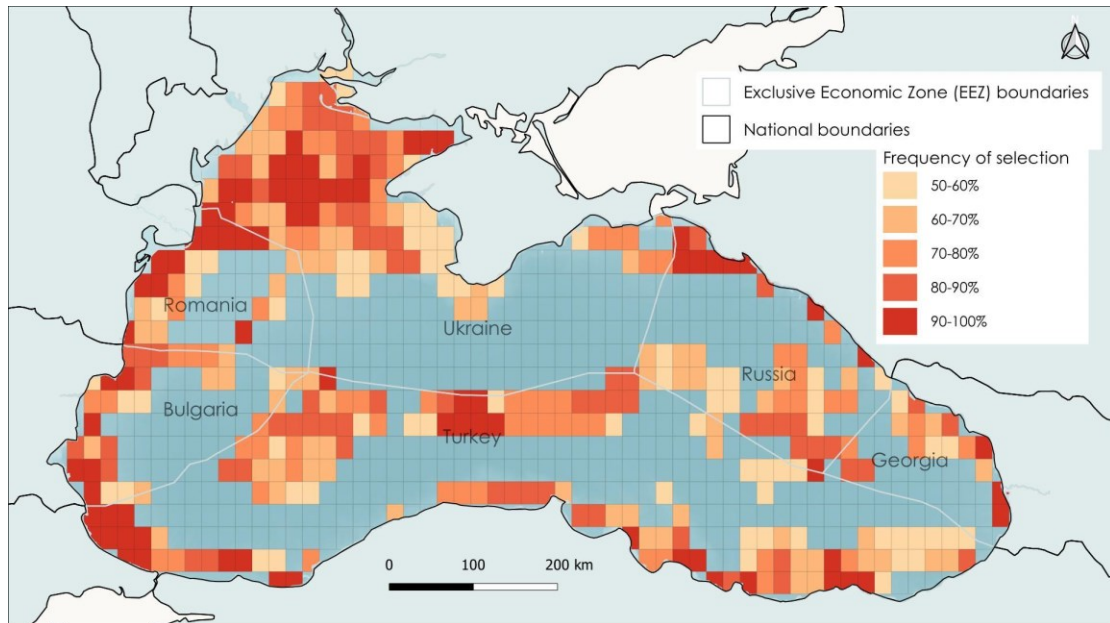
**Run variant:** *MPAs locked in - no species weights used*

---

### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 8.5 – for the year 2100) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.

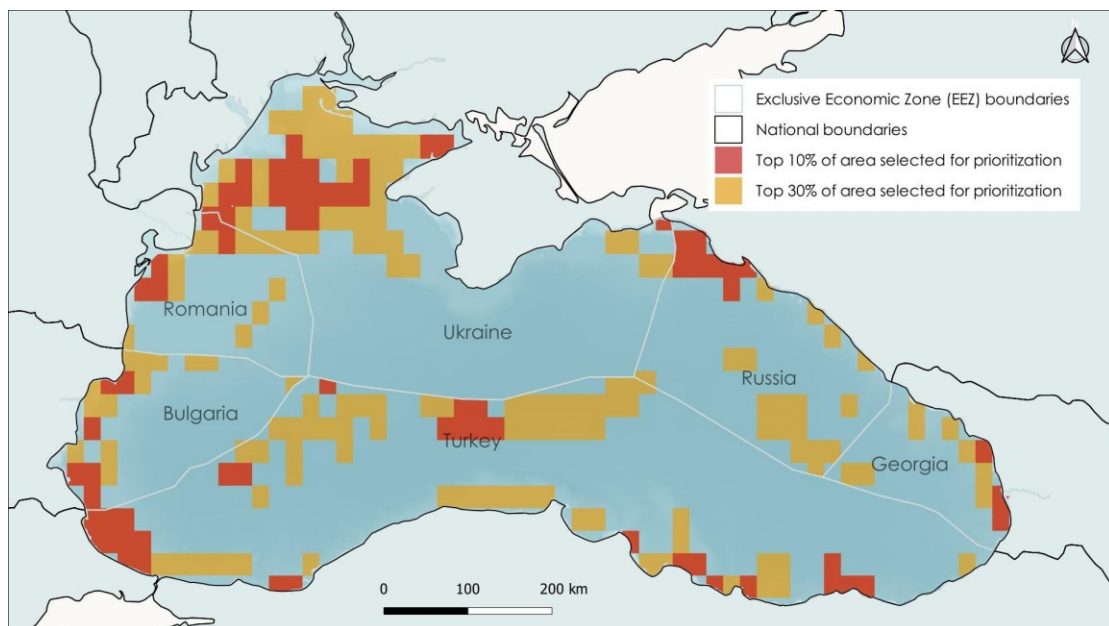
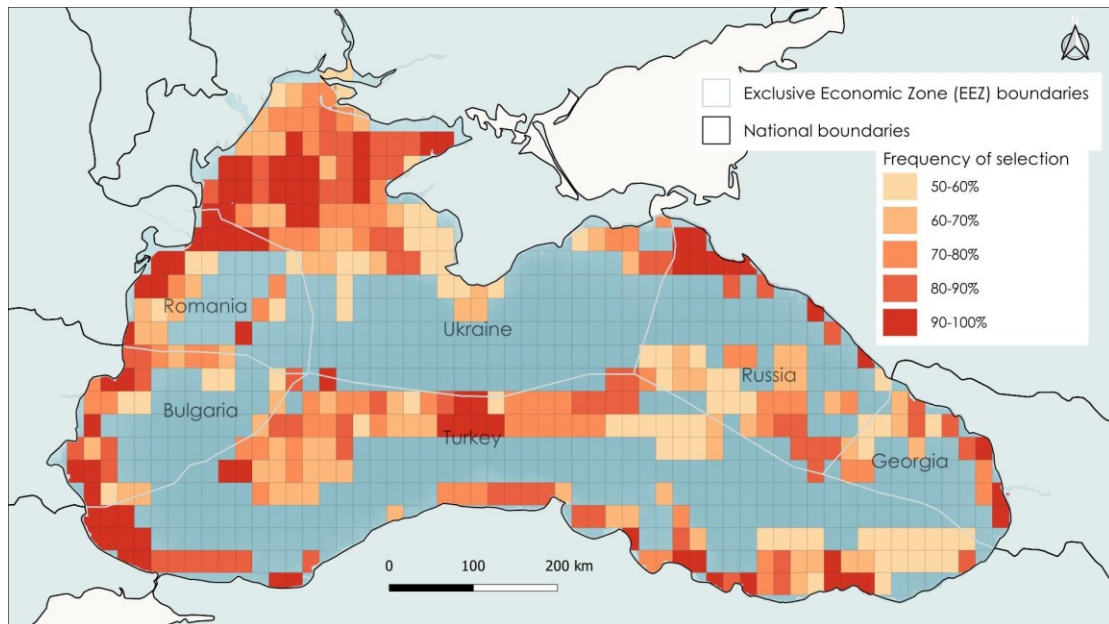
---



**Scenario:** *Current, accounting for climate change*  
**Run variant:** *MPAs locked in & species weights used*

### What this scenario represents

This run identifies conservation priority areas based on current and near future (Representative Concentration Pathway 8.5 – for the year 2100) species distributions in the Black Sea and areas where human activity might pose a challenge on conservation efforts, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.





## Future distribution of species under climate change scenarios

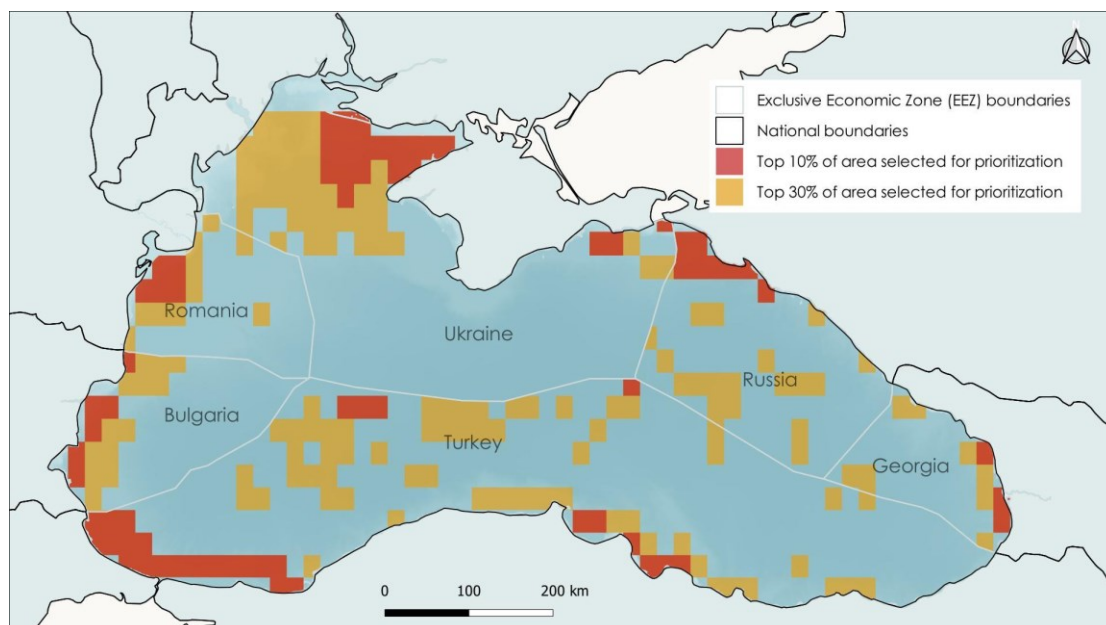
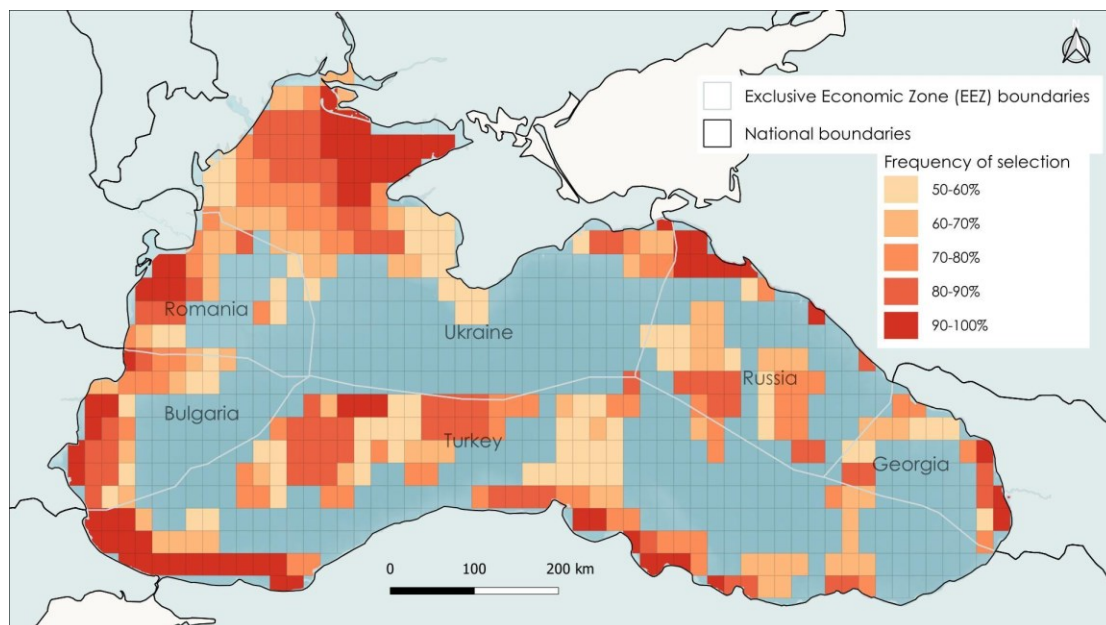
### RCP 2.6

**Scenario:** *Future – RCP2.6 2050*

**Run variant:** *No MPAs locked in - no species weights used*

#### What this scenario represents:

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2050, using **Representative Concentration Pathway 2.6**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change.



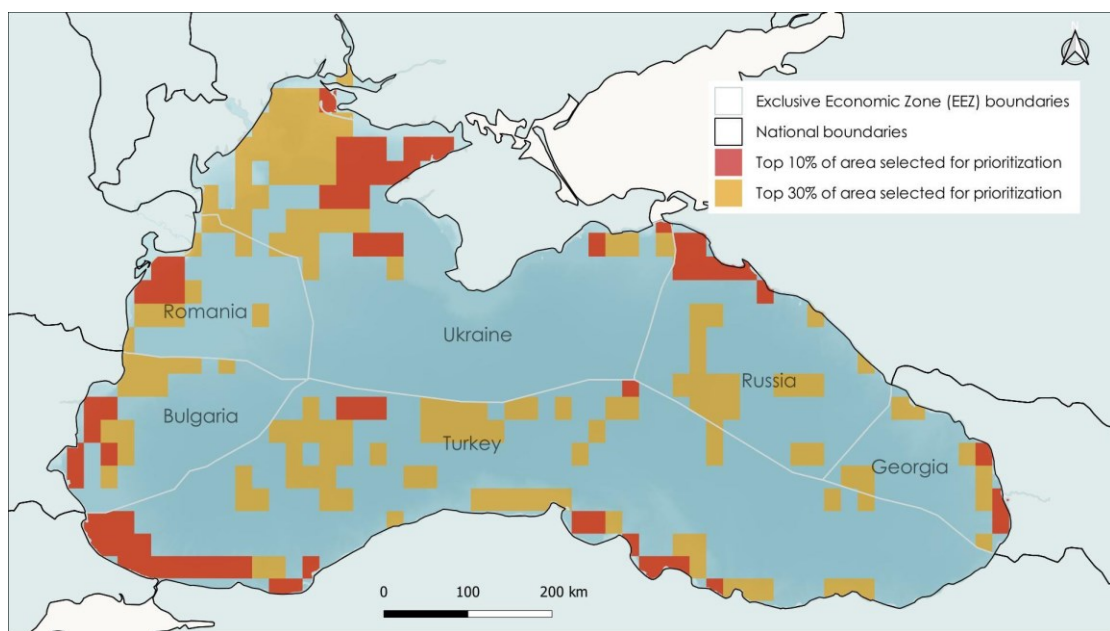
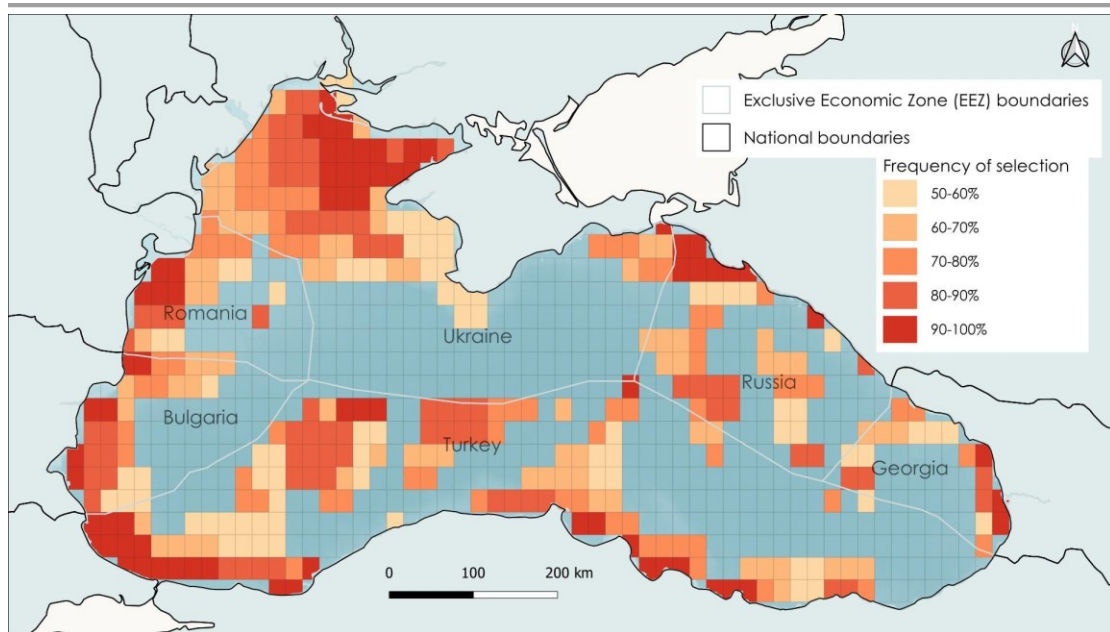
**Scenario:** *Future – RCP2.6 2050*

**Run variant:** *No MPAs - species weights used*



### What this scenario represents:

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2050, using **Representative Concentration Pathway 2.6**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while giving higher priority to species of greater conservation concern.

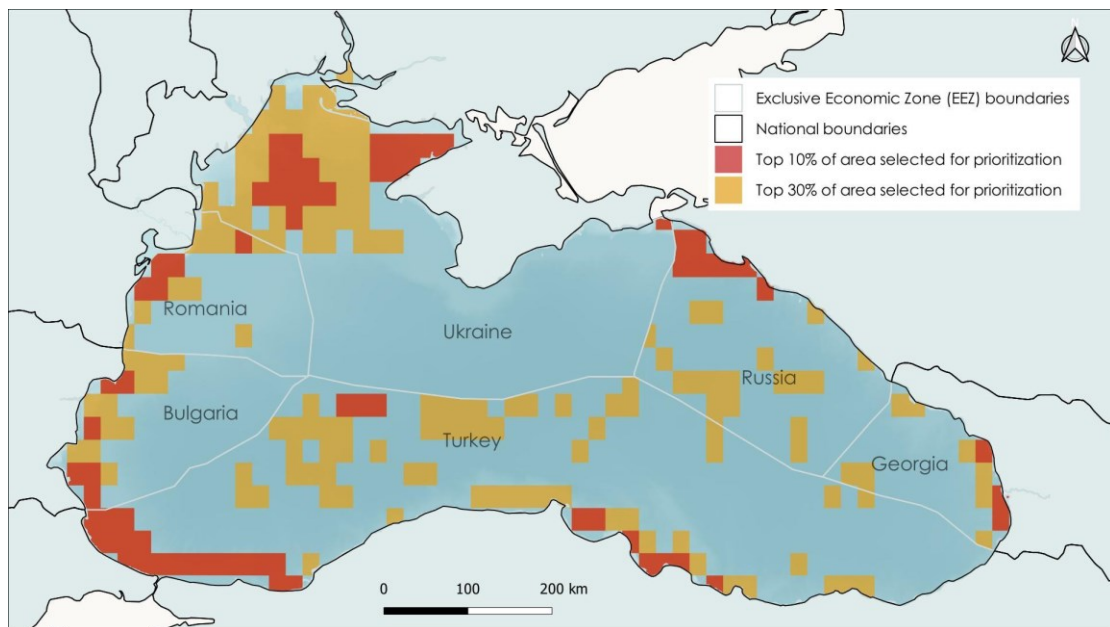
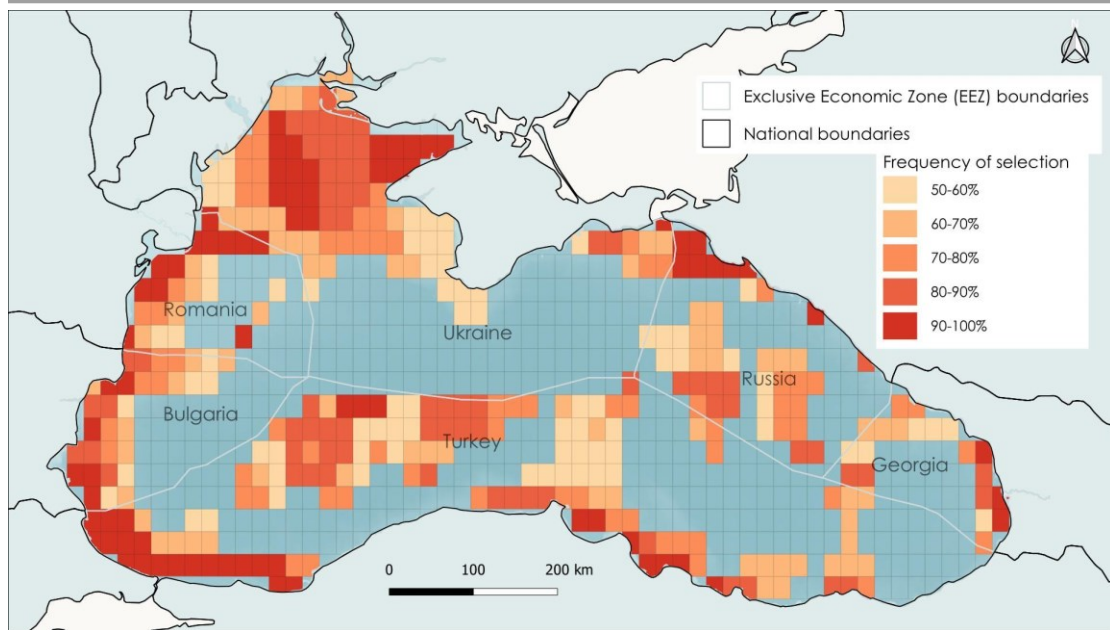


**Scenario:** *Future – RCP2.6 2050*

**Run variant:** *MPAs locked in - no species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2050, using **Representative Concentration Pathway 2.6**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.



**Scenario:** *Future – RCP2.6 2050*

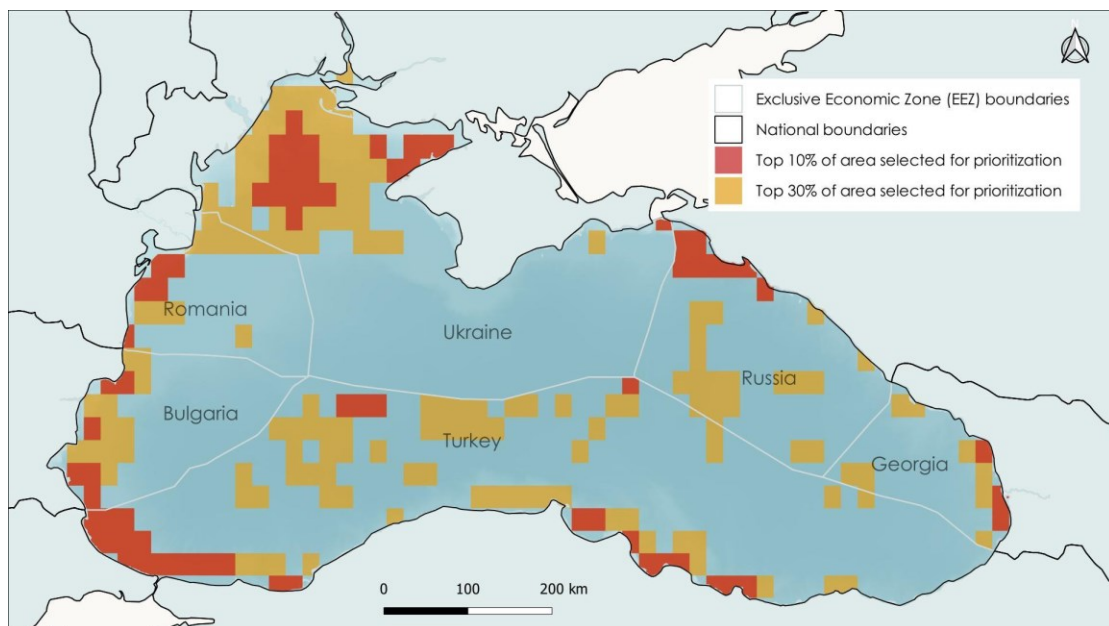
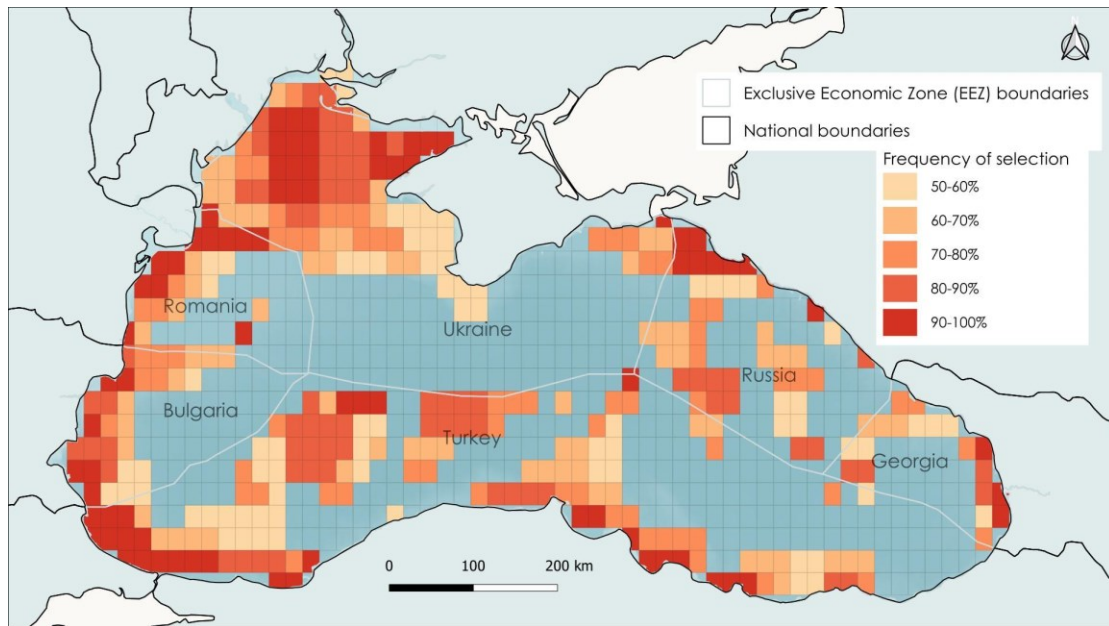
**Run variant:** *MPAs locked in & species weights used*

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**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2050, using **Representative Concentration Pathway 2.6**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.

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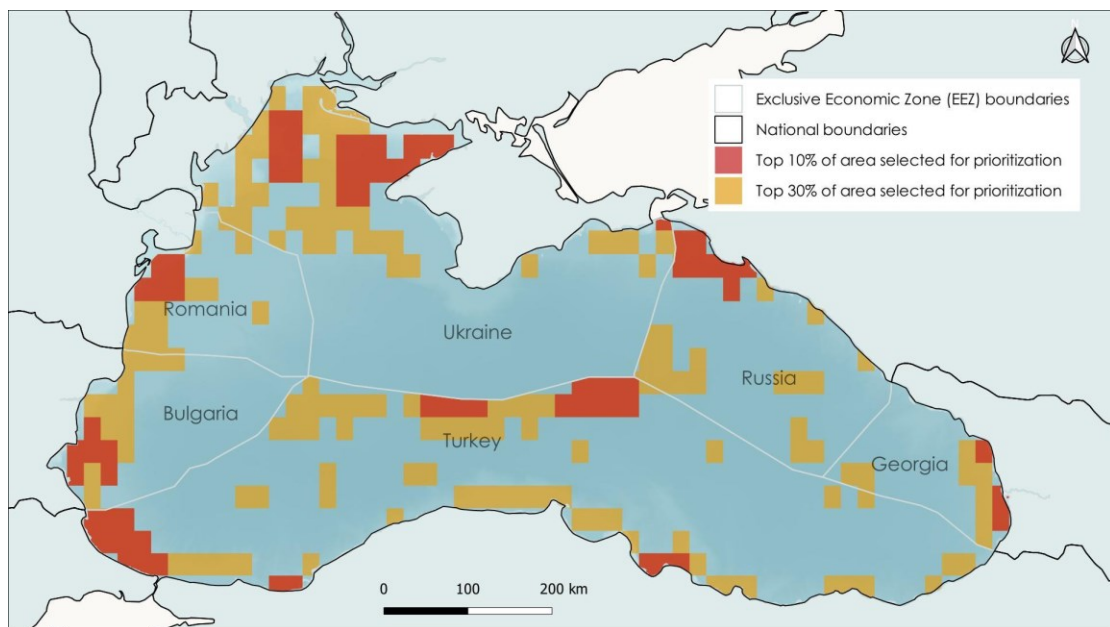
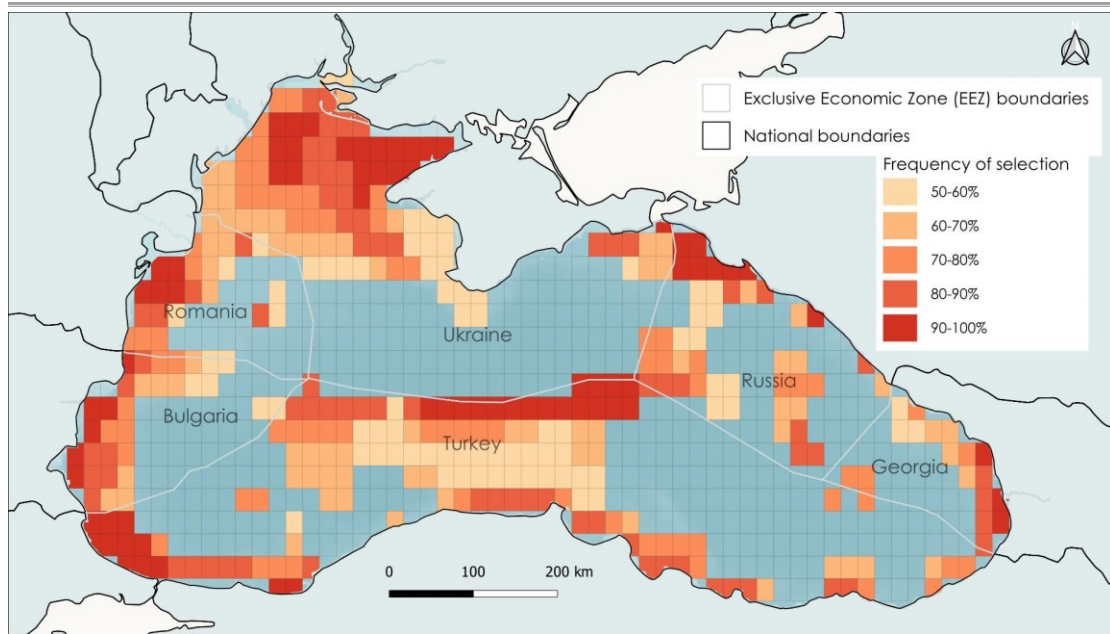


**Scenario:** *Future – RCP2.6 2100*

**Run variant:** *No MPAs locked in - no species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2100, using **Representative Concentration Pathway 2.6**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change.

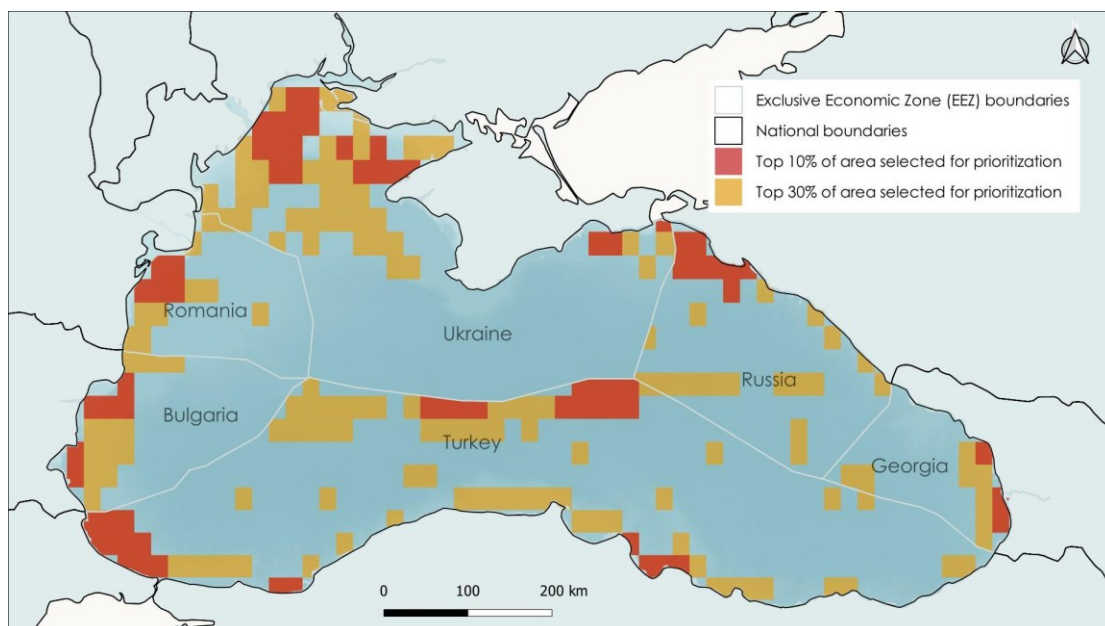
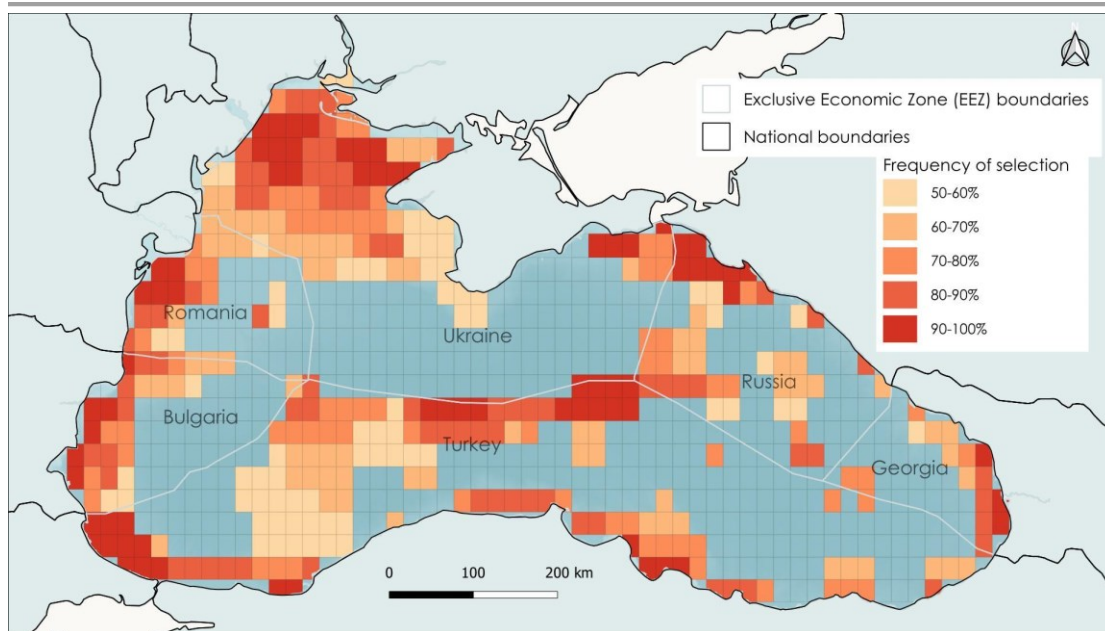




**Scenario:** *Future – RCP2.6 2100*  
**Run variant:** *No MPAs - species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2100, using **Representative Concentration Pathway 2.6**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while giving higher priority to species of greater conservation concern.

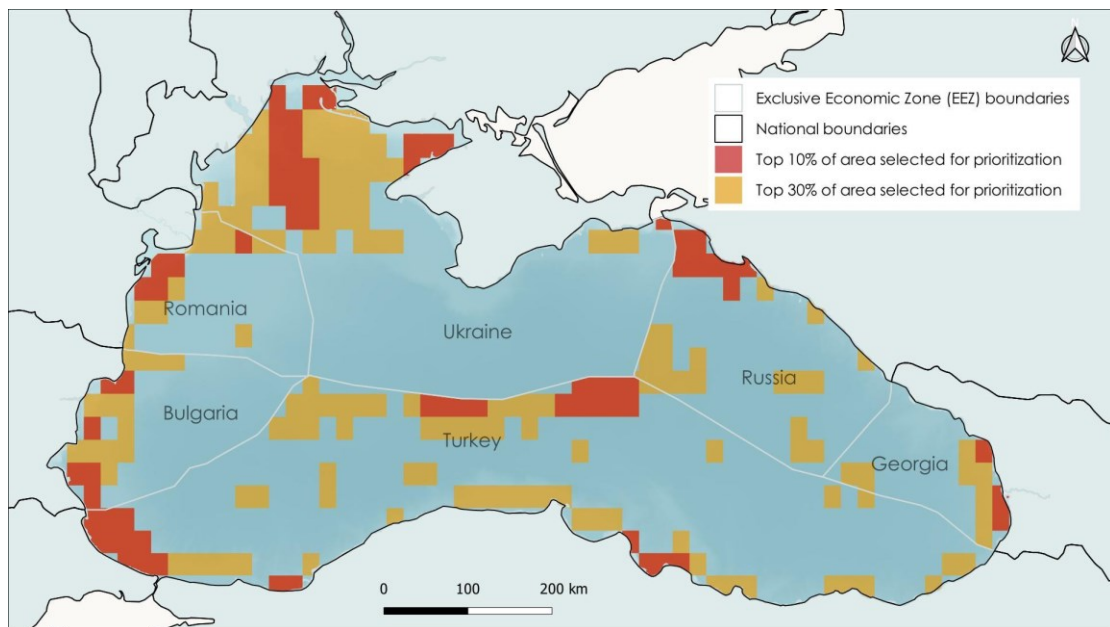
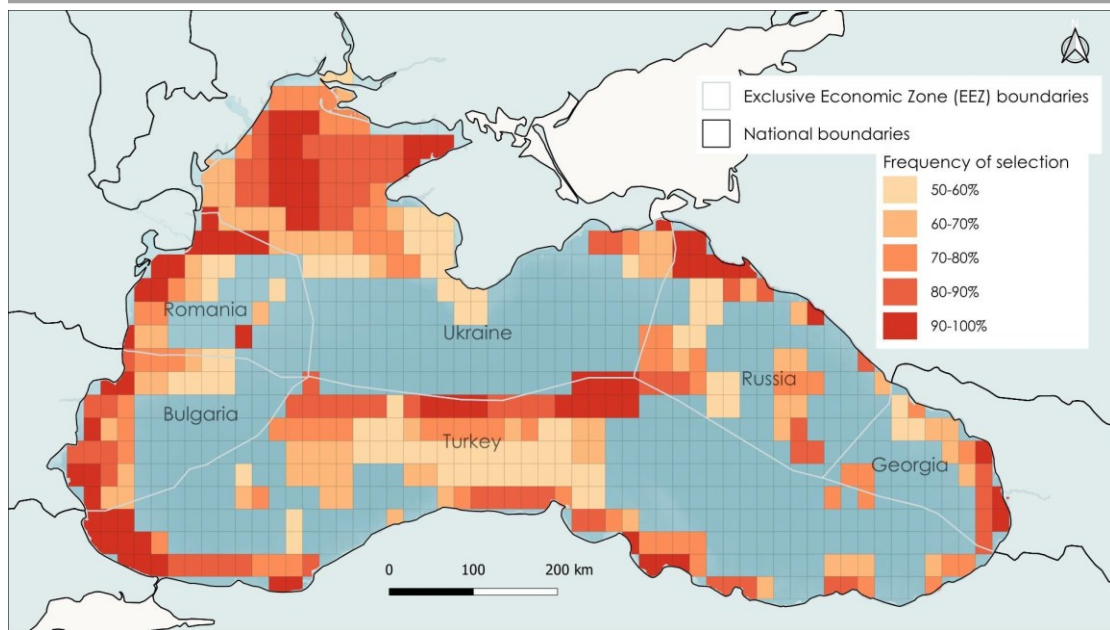


**Scenario:** *Future – RCP2.6 2100*

**Run variant:** *MPAs locked in - no species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2100, using **Representative Concentration Pathway 2.6**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.



**Scenario:** *Future – RCP2.6 2100*

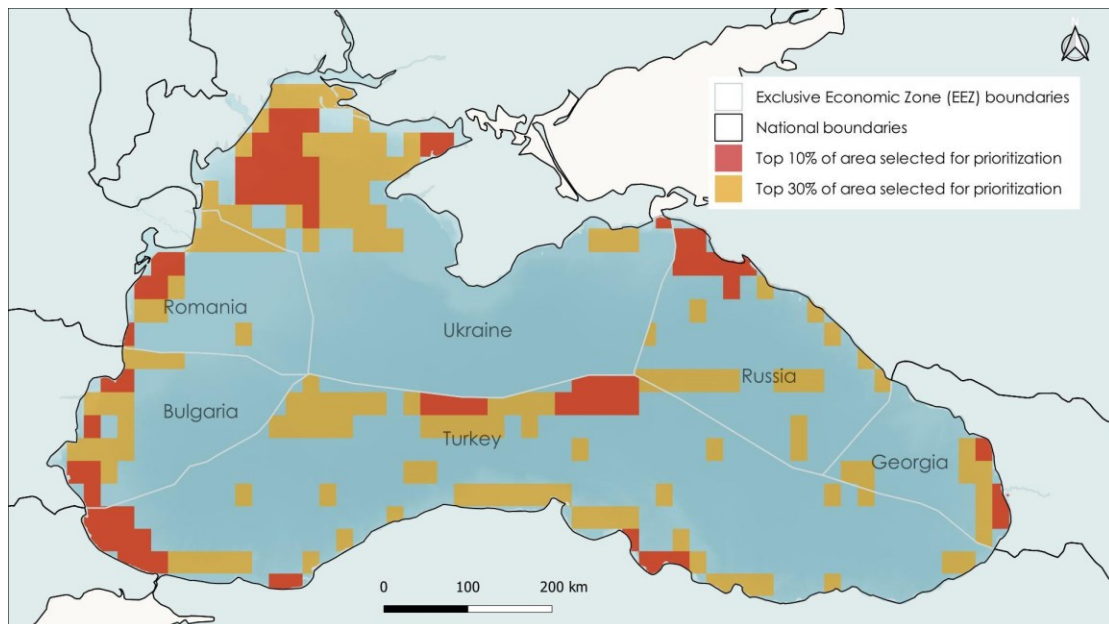
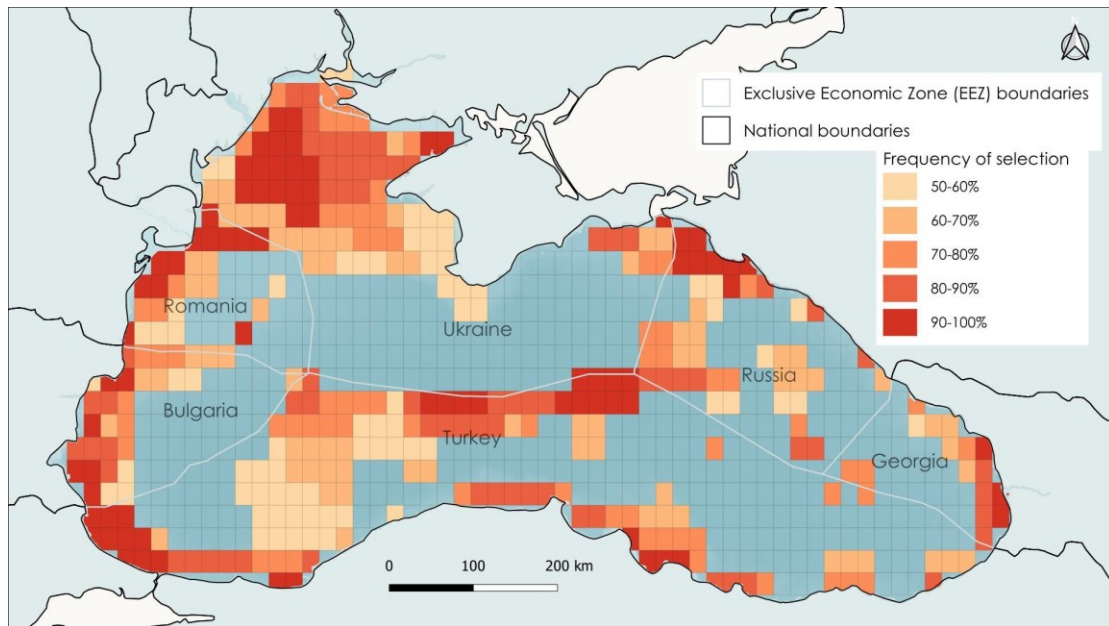
**Run variant:** *MPAs locked in & species weights used*

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**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2100, using **Representative Concentration Pathway 2.6**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.

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RCP 4.5

**Scenario:** *Future – RCP4.5 2050*

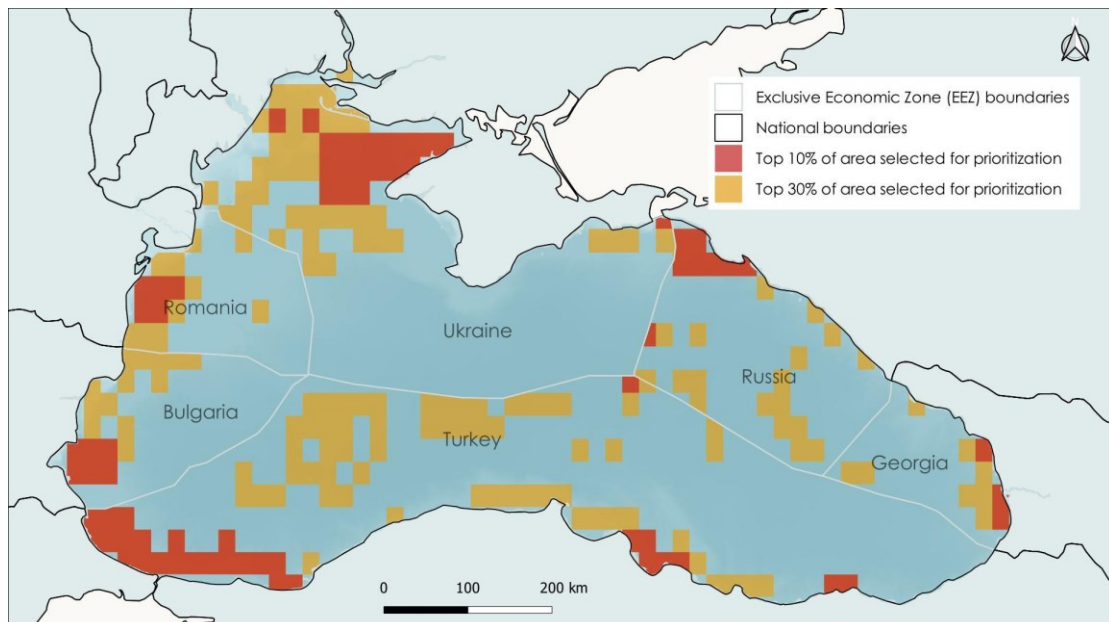
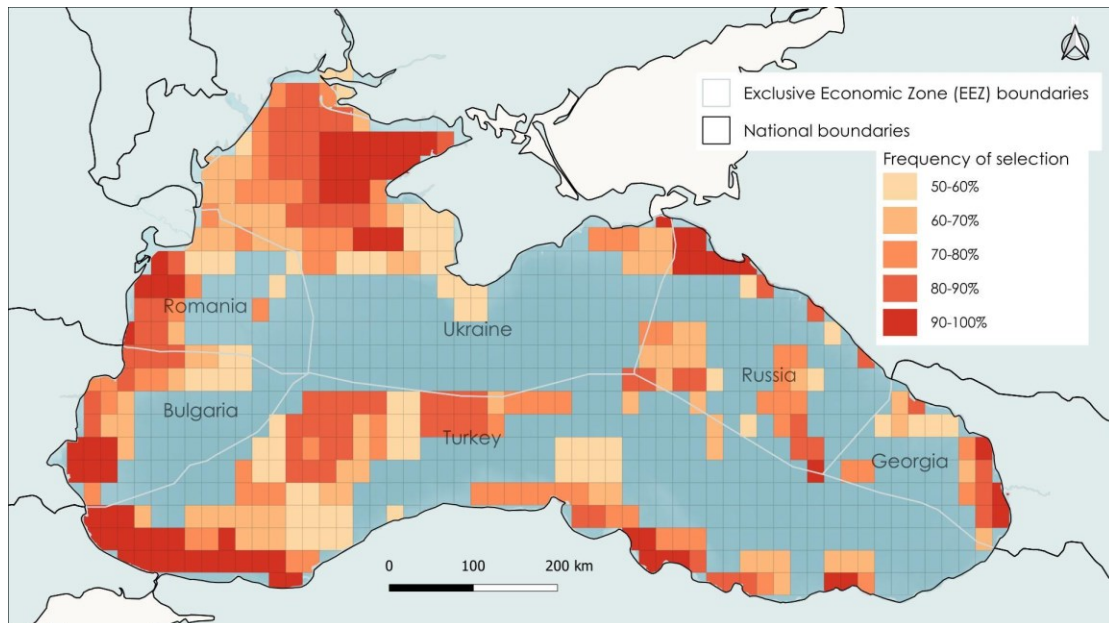
**Run variant:** *No MPAs locked in - no species weights used*

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**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2050, using **Representative Concentration Pathway 4.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change.

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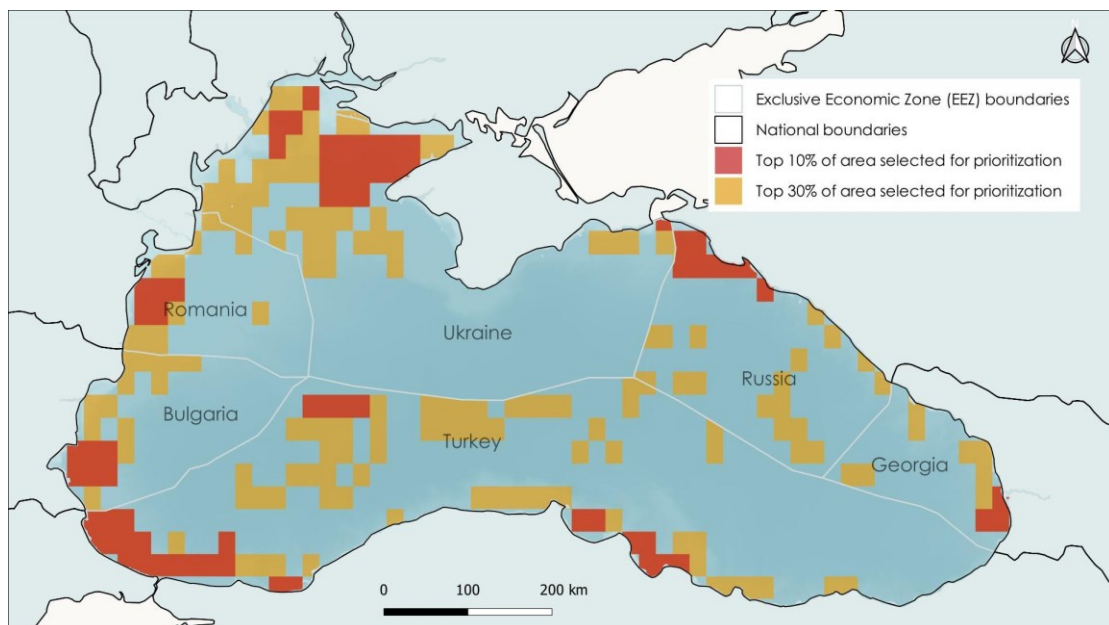
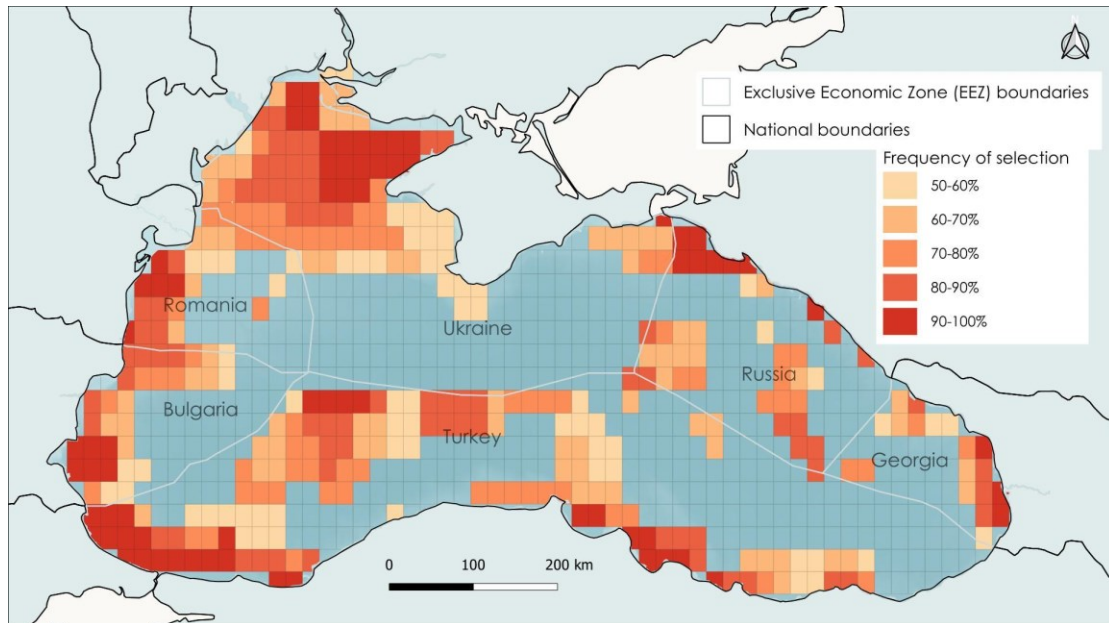




**Scenario:** *Future – RCP4.5 2050*  
**Run variant:** *No MPAs - species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2050, using **Representative Concentration Pathway 4.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while giving higher priority to species of greater conservation concern.

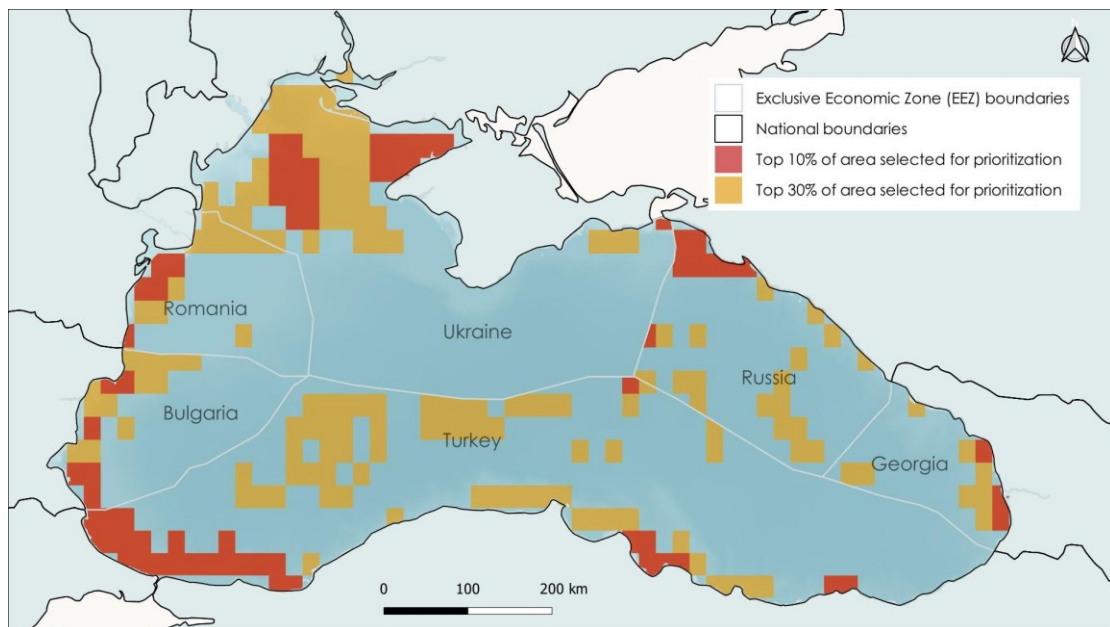
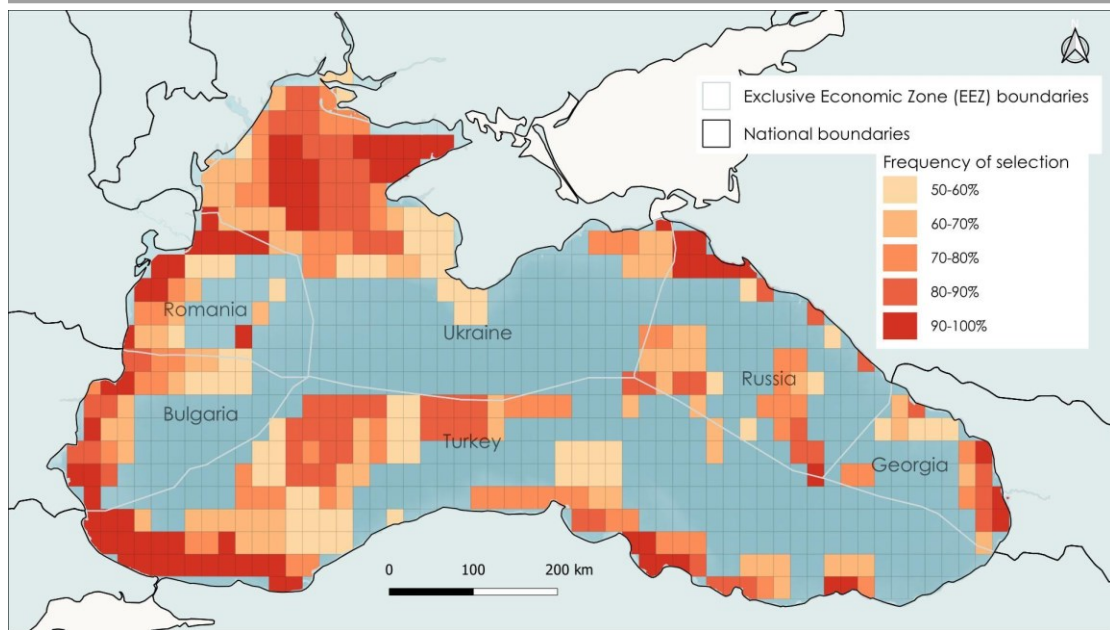


**Scenario:** *Future – RCP4.5 2050*

**Run variant:** *MPAs locked in - no species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2050, using **Representative Concentration Pathway 4.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.



**Scenario:** *Future – RCP4.5 2050*

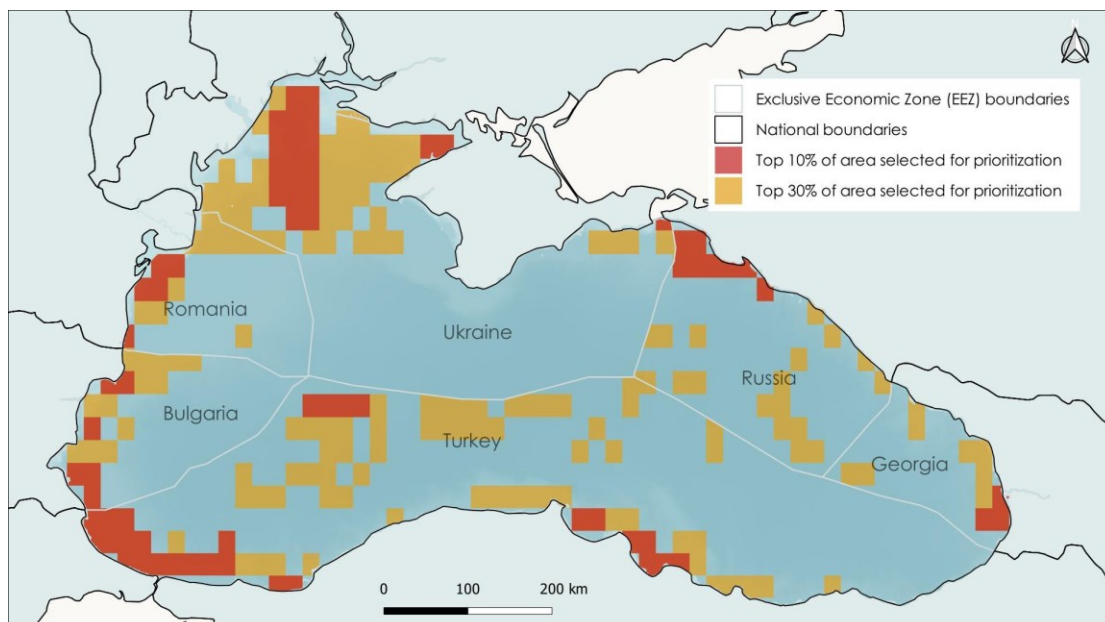
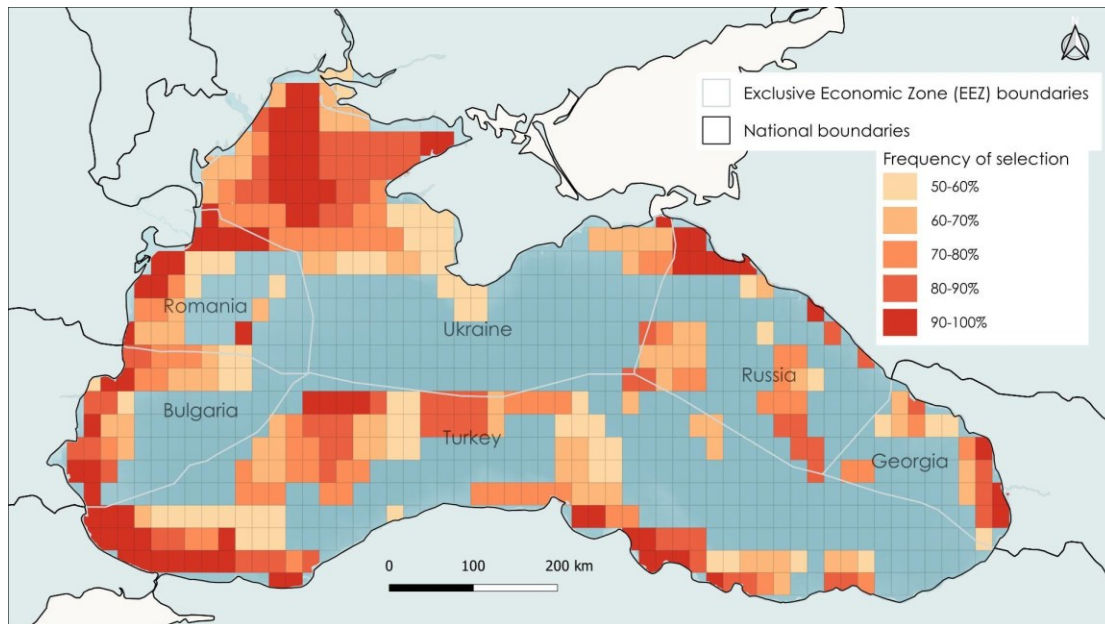
**Run variant:** *MPAs locked in & species weights used*

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**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2050, using **Representative Concentration Pathway 4.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.

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**Scenario:** *Future – RCP4.5 2100*

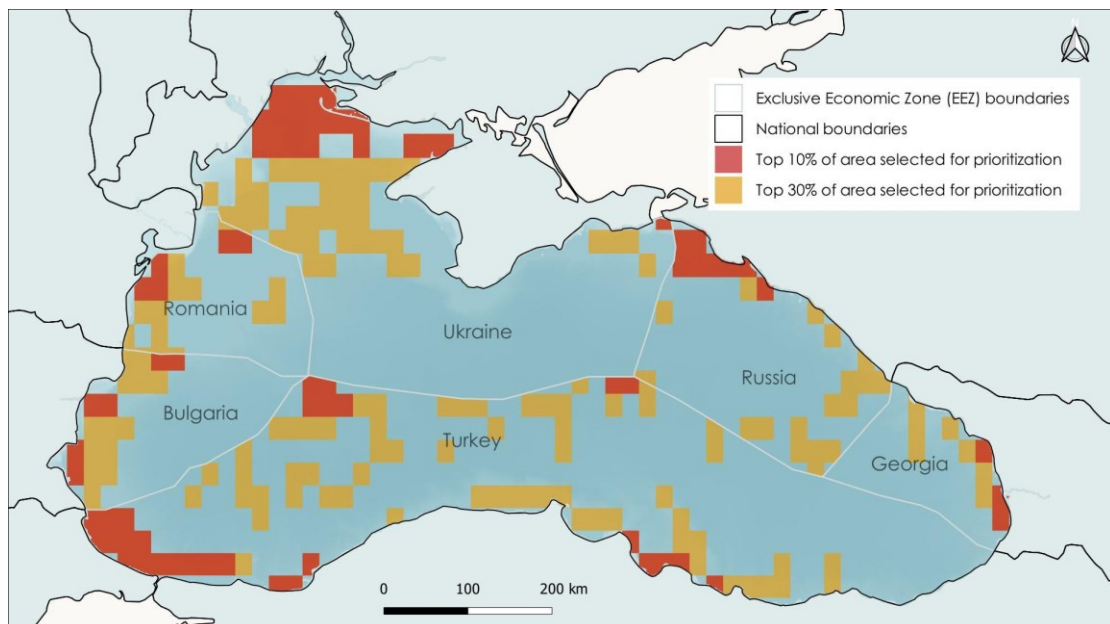
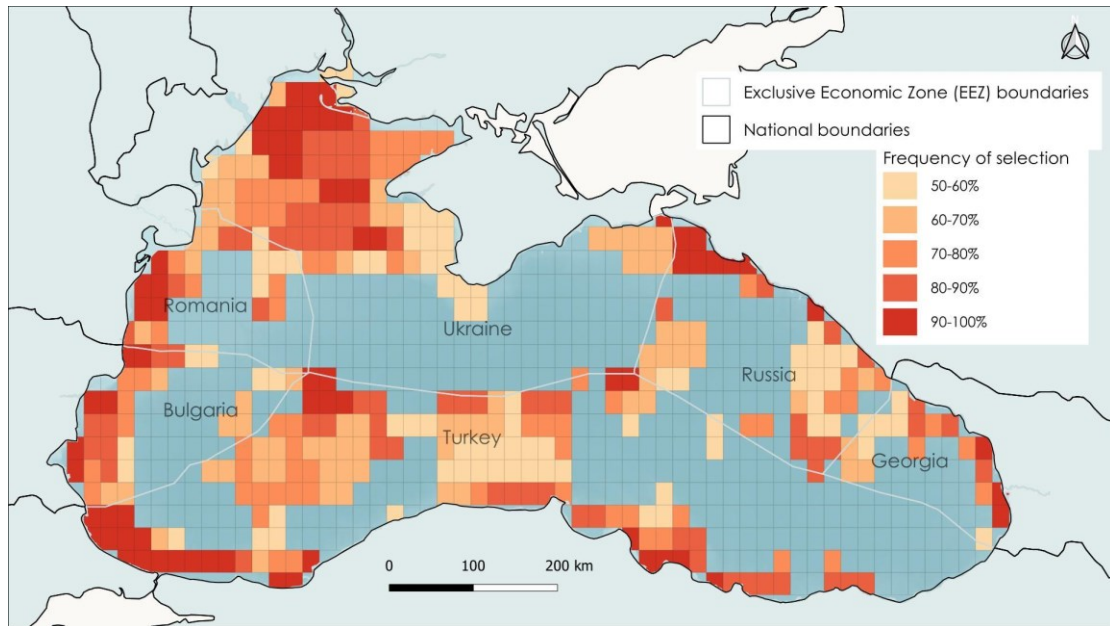
**Run variant:** *No MPAs locked in - no species weights used*

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**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2100, using **Representative Concentration Pathway 4.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change.

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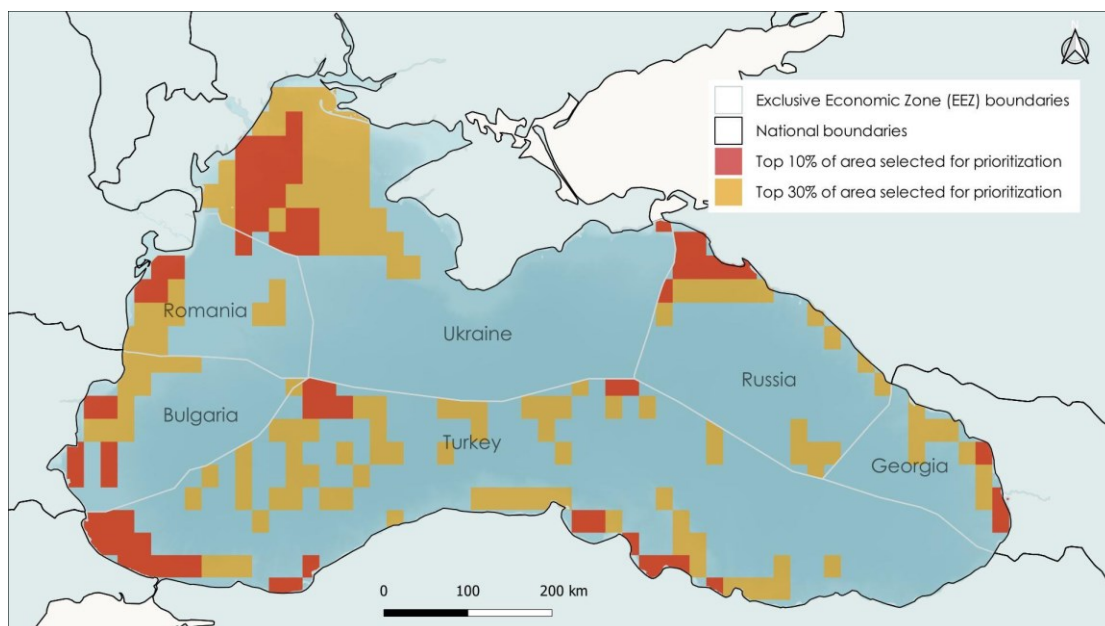
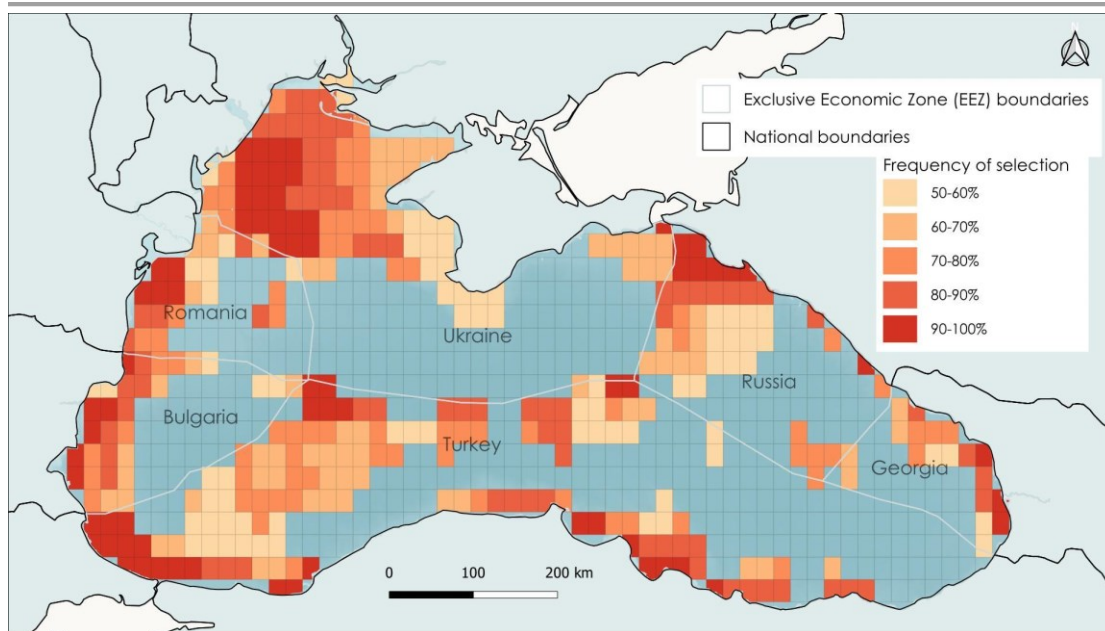




**Scenario:** *Future – RCP4.5 2100*  
**Run variant:** *No MPAs - species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2100, using **Representative Concentration Pathway 4.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while giving higher priority to species of greater conservation concern.

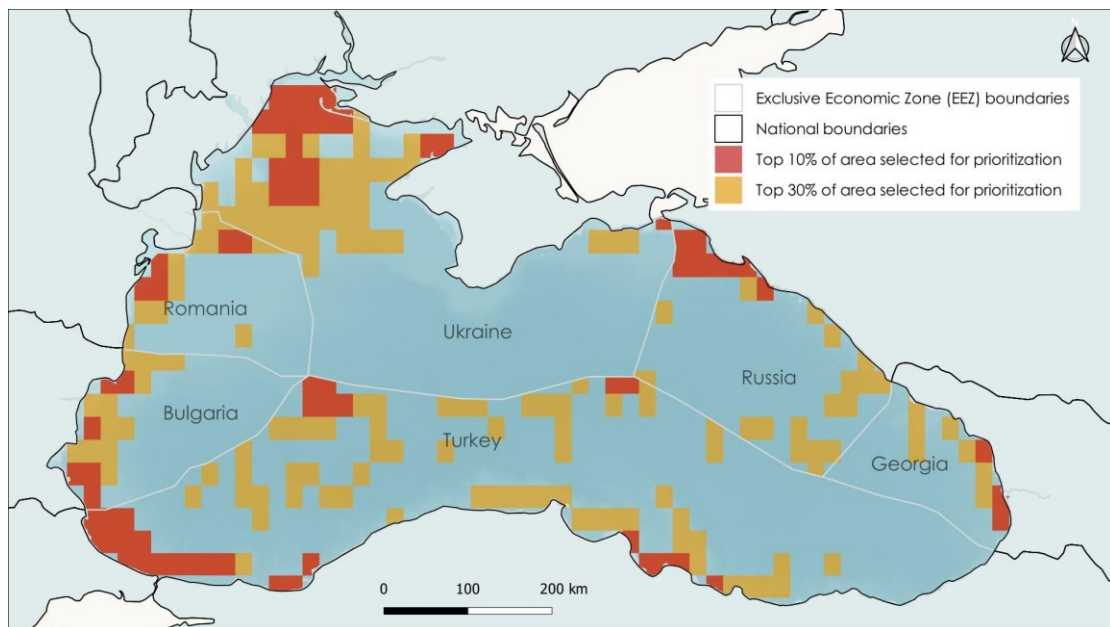
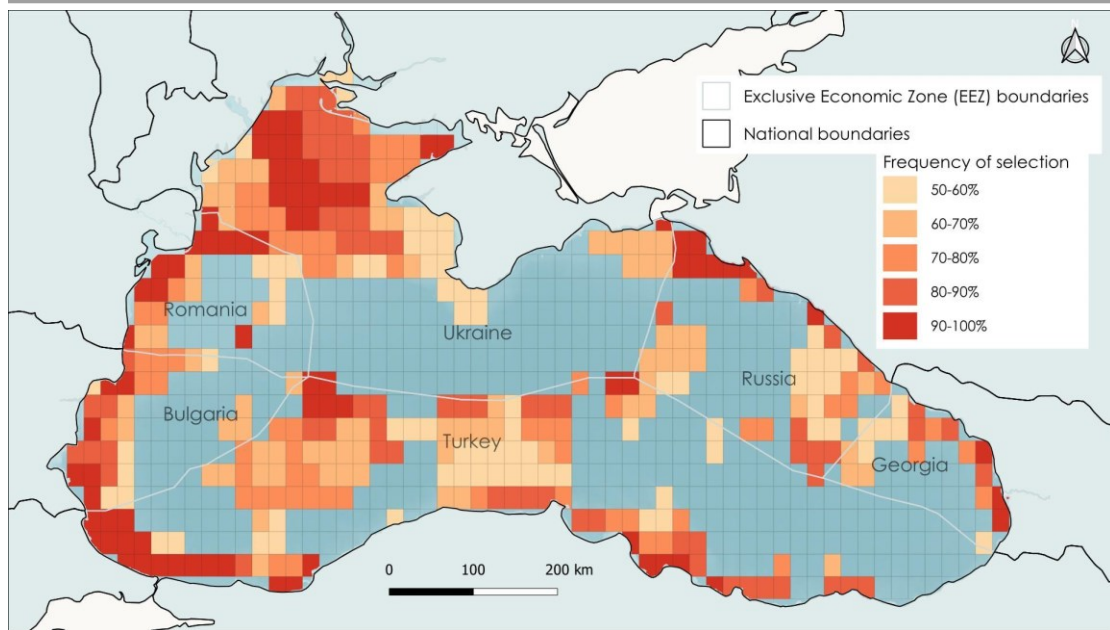


**Scenario:** *Future – RCP4.5 2100*

**Run variant:** *MPAs locked in - no species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2100, using **Representative Concentration Pathway 4.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.



**Scenario:** *Future – RCP4.5 2100*

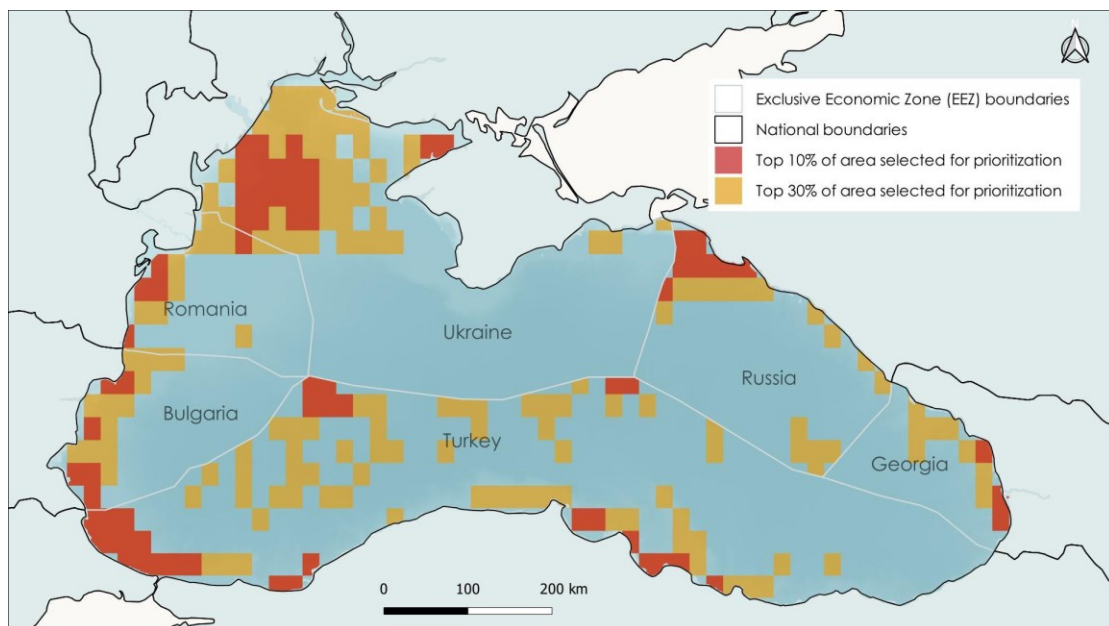
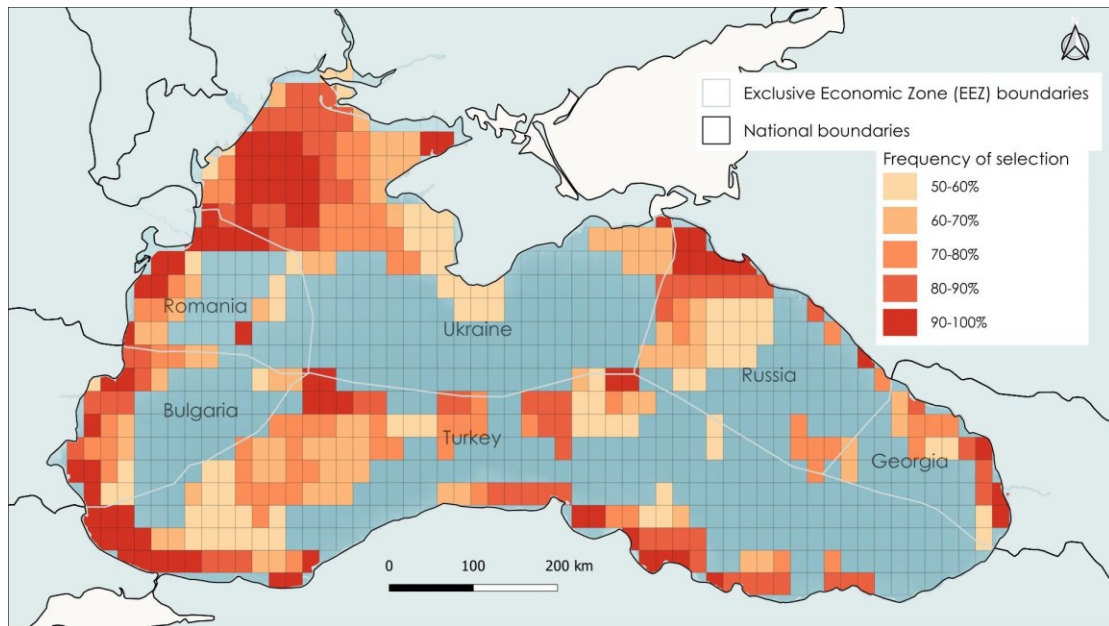
**Run variant:** *MPAs locked in & species weights used*

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**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2100, using **Representative Concentration Pathway 4.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.

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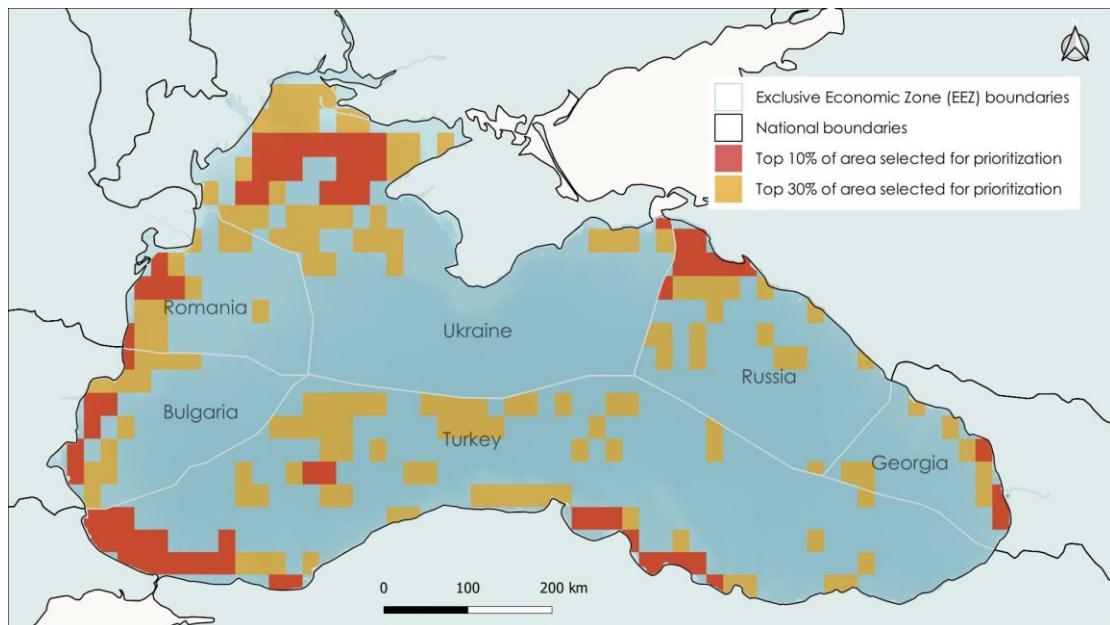
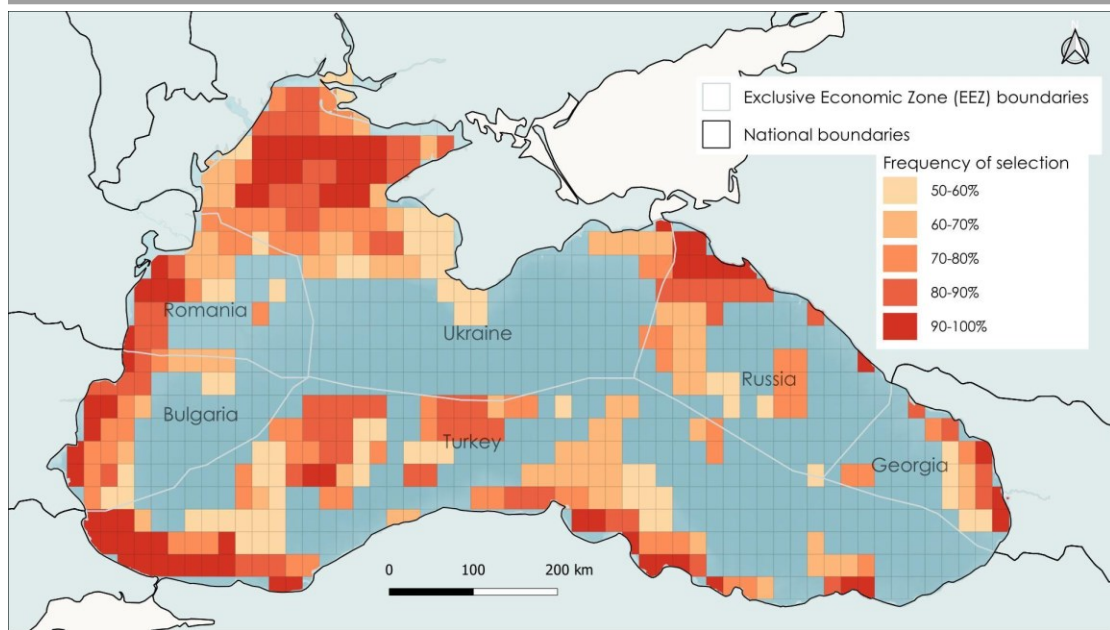
RCP 8.5

**Scenario:** *Future – RCP8.5 2050*

**Run variant:** *No MPAs locked in - no species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2050, using **Representative Concentration Pathway 8.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while giving higher priority to species of greater conservation concern.

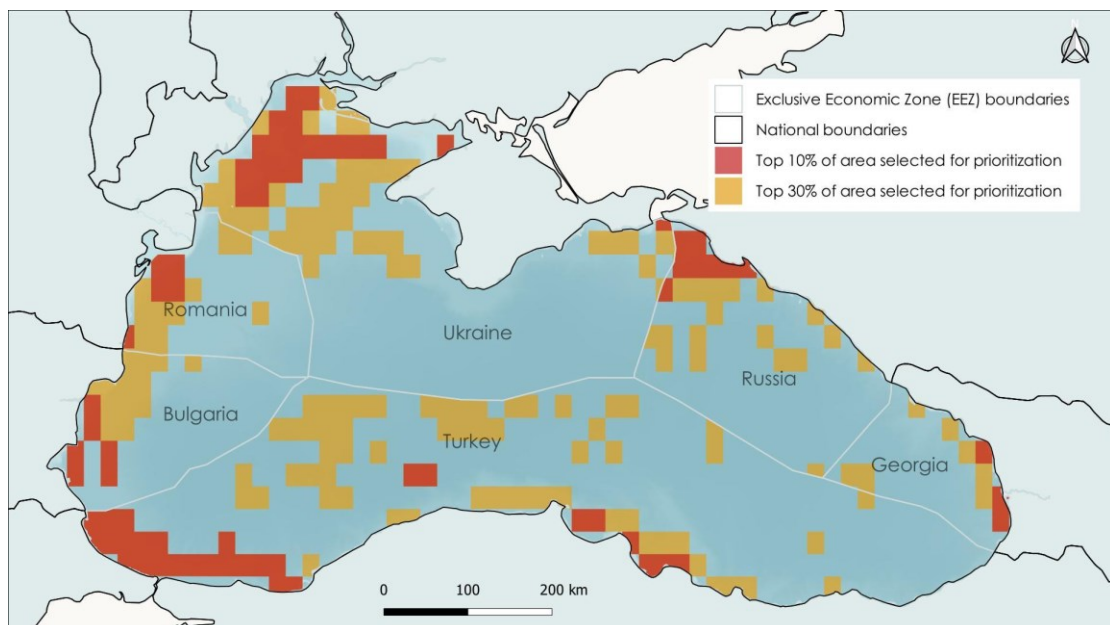
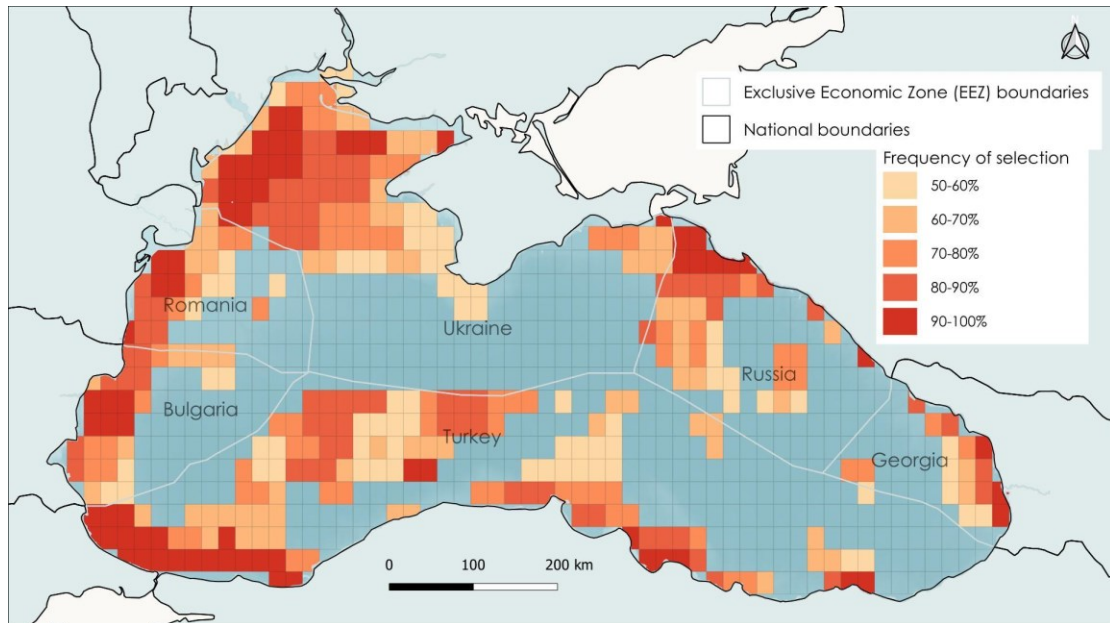




**Scenario:** Future – RCP8.5 2050  
**Run variant:** No MPAs - species weights used

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2050, using **Representative Concentration Pathway 8.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while giving higher priority to species of greater conservation concern.

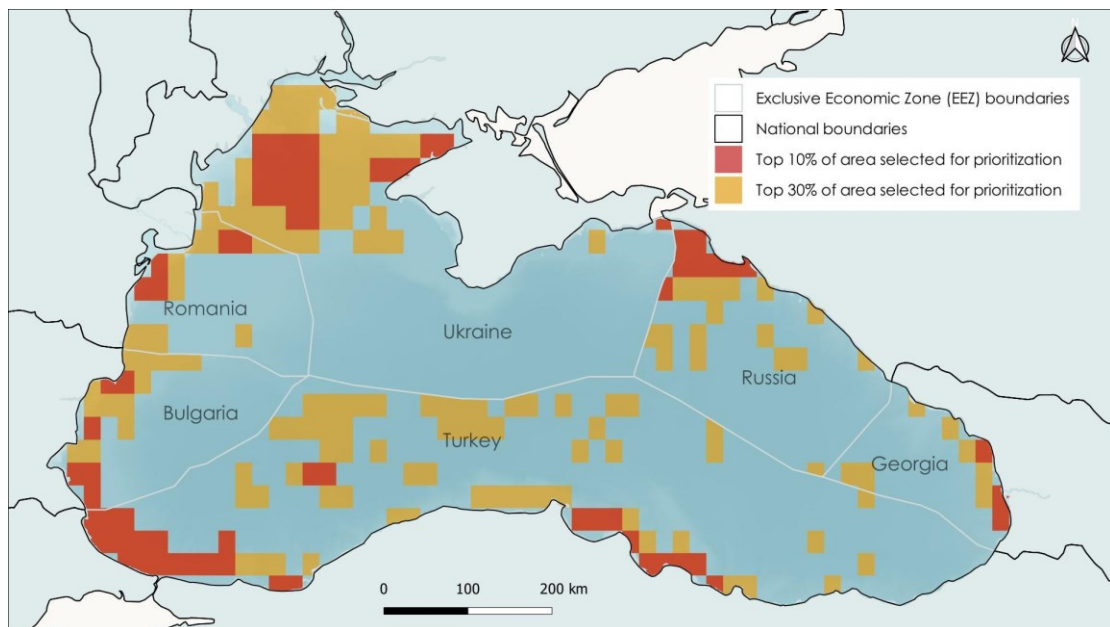
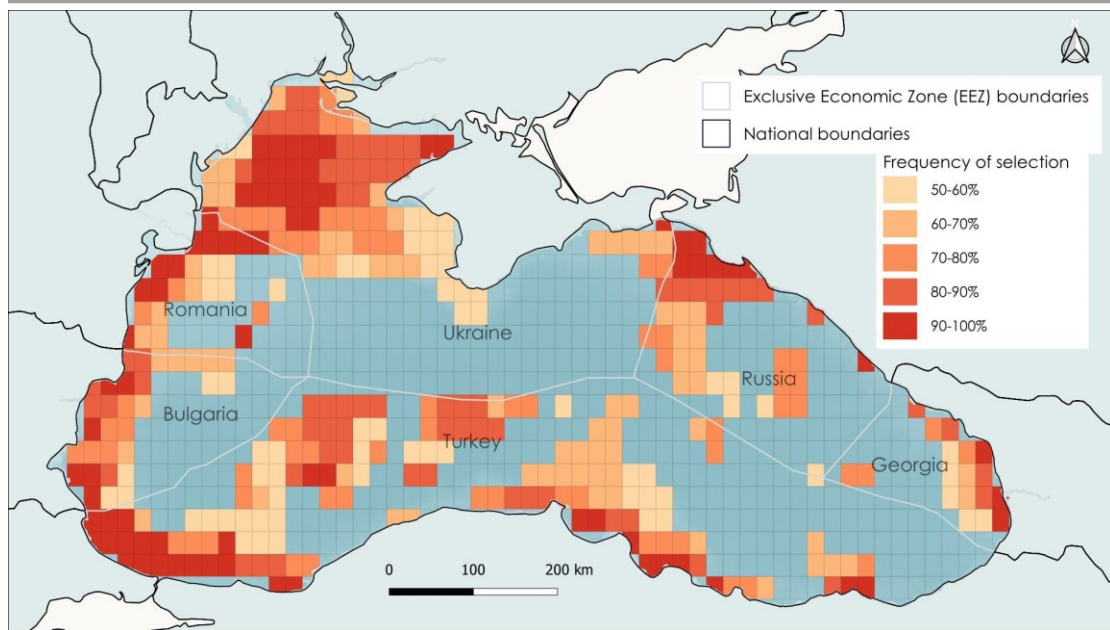


**Scenario:** *Future – RCP8.5 2050*

**Run variant:** *MPAs locked in - no species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2050, using **Representative Concentration Pathway 8.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.

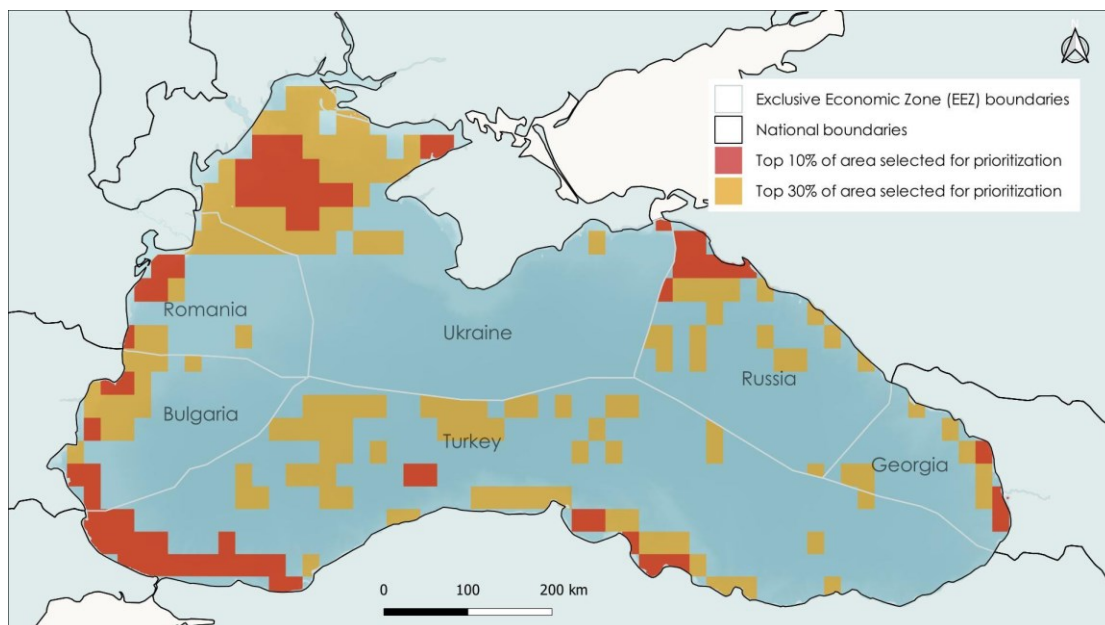
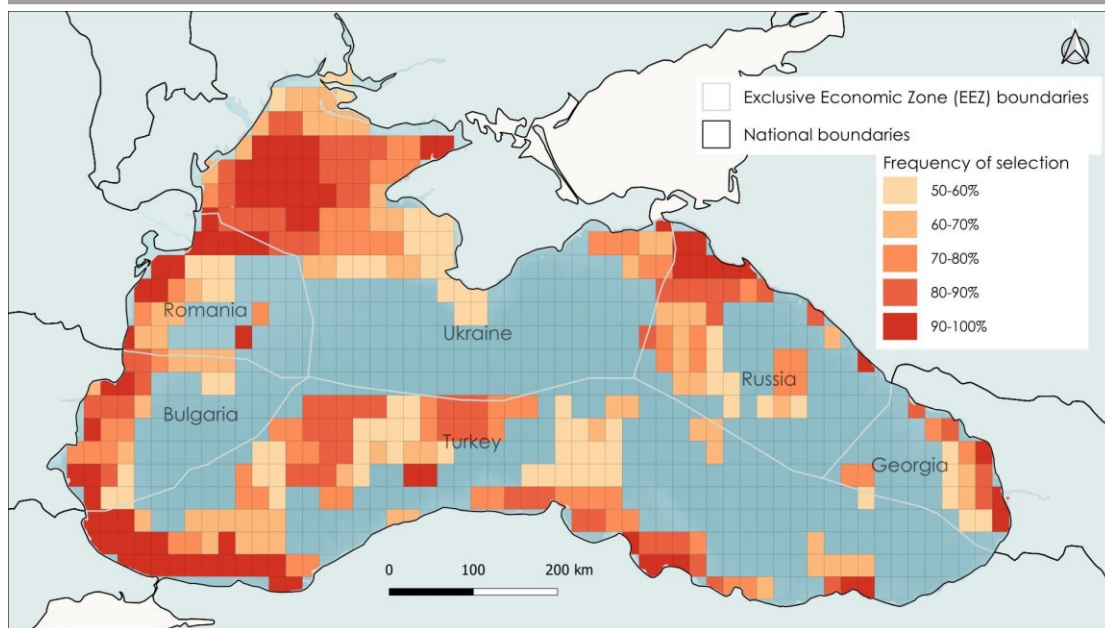


**Scenario:** *Future – RCP8.5 2050*

**Run variant:** *MPAs locked in & species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2050, using **Representative Concentration Pathway 8.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.



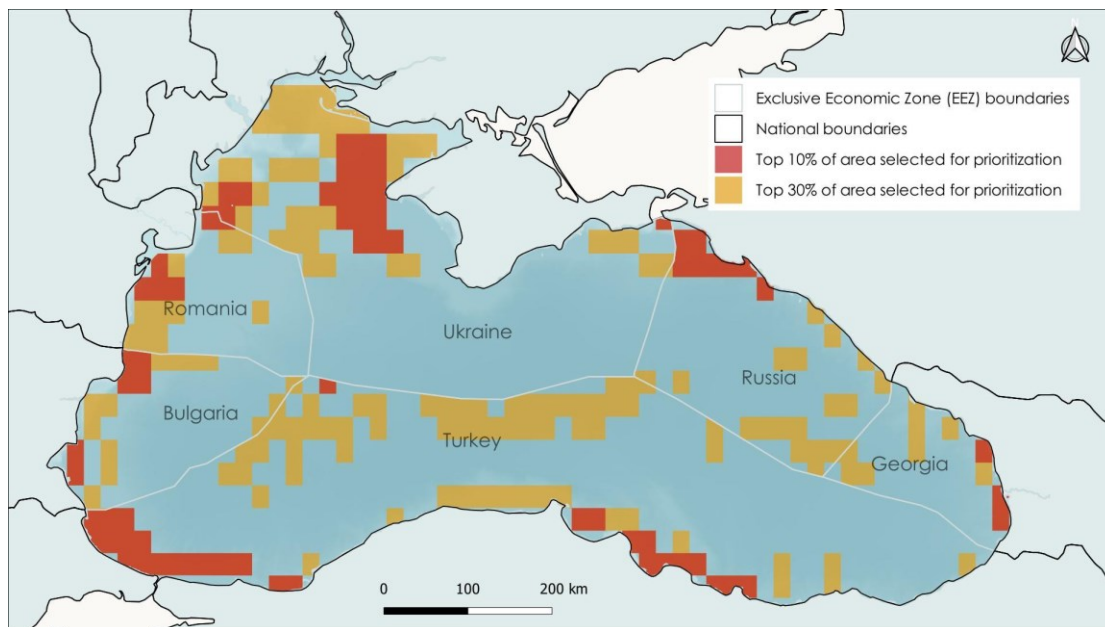
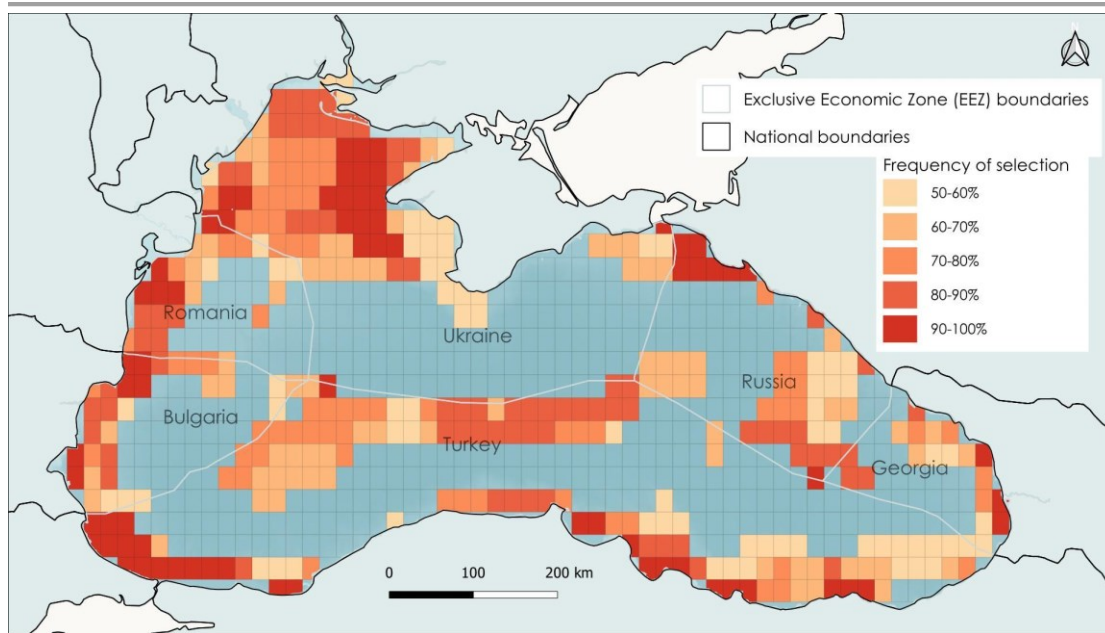


**Scenario:** *Future – RCP8.5 2100*

**Run variant:** *No MPAs locked in - no species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2100, using **Representative Concentration Pathway 8.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while giving higher priority to species of greater conservation concern.

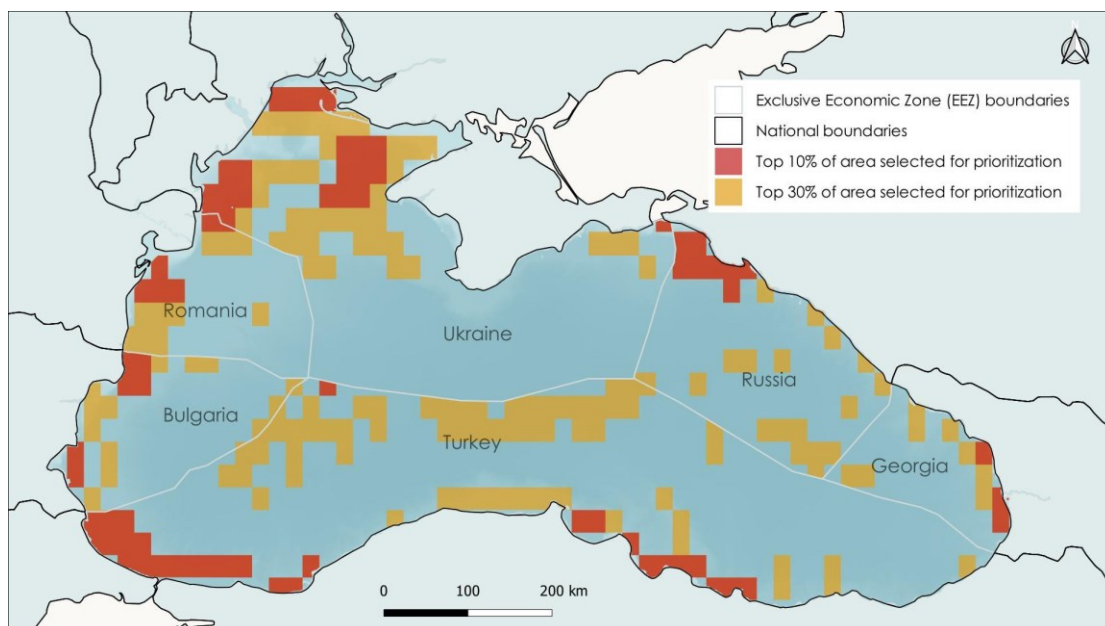
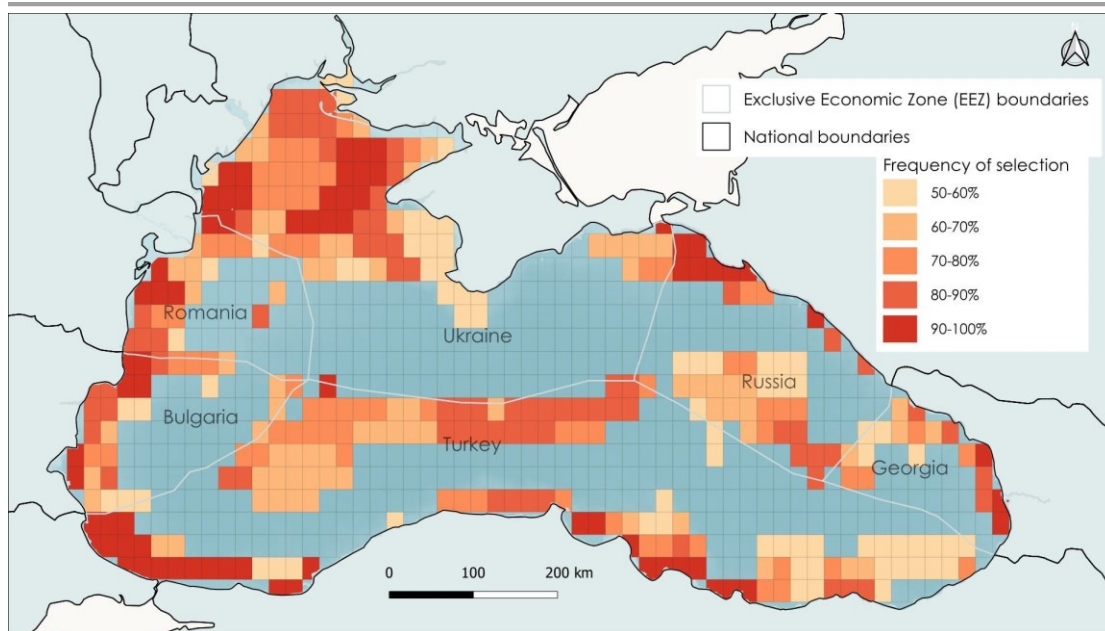




**Scenario:** *Future – RCP8.5 2100*  
**Run variant:** *No MPAs - species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2100, using **Representative Concentration Pathway 8.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while giving higher priority to species of greater conservation concern.

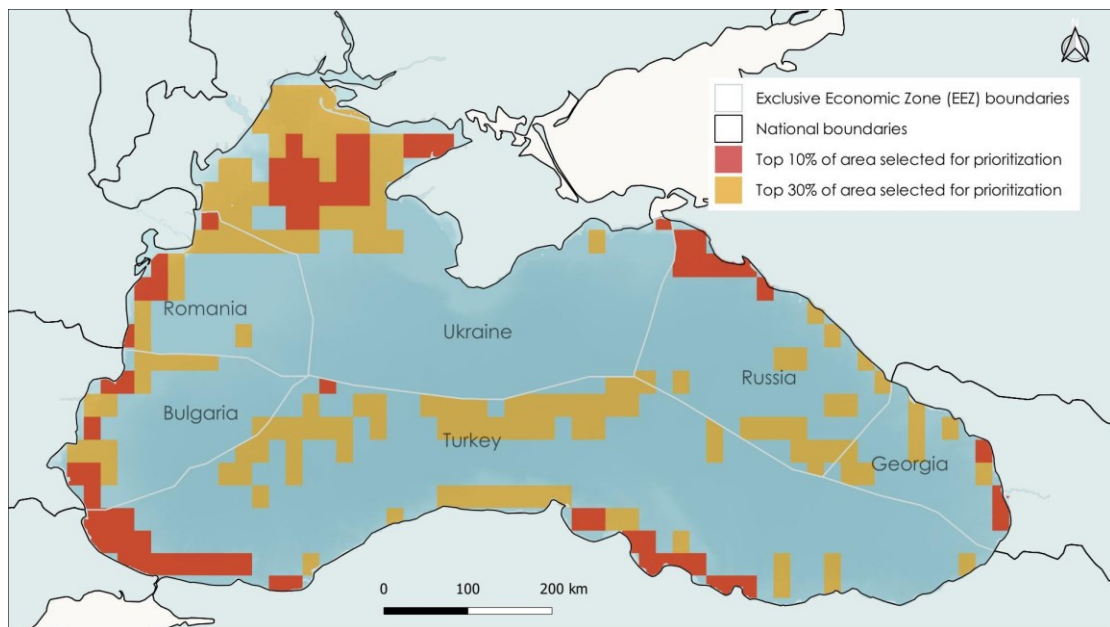
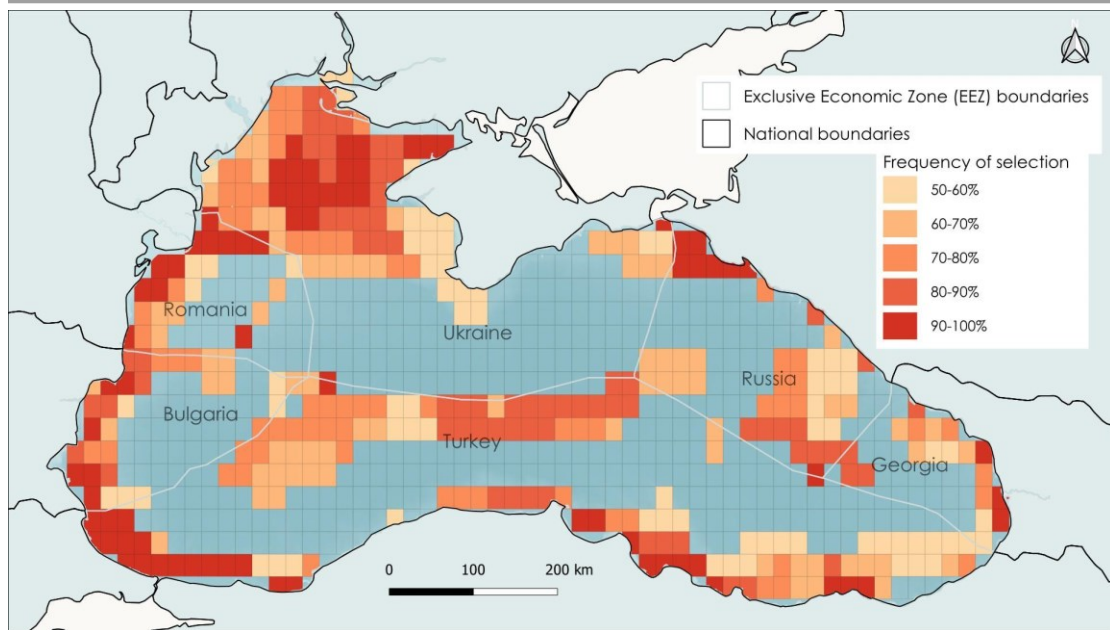


**Scenario:** *Future – RCP8.5 2100*

**Run variant:** *MPAs locked in - no species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2100, using **Representative Concentration Pathway 8.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.

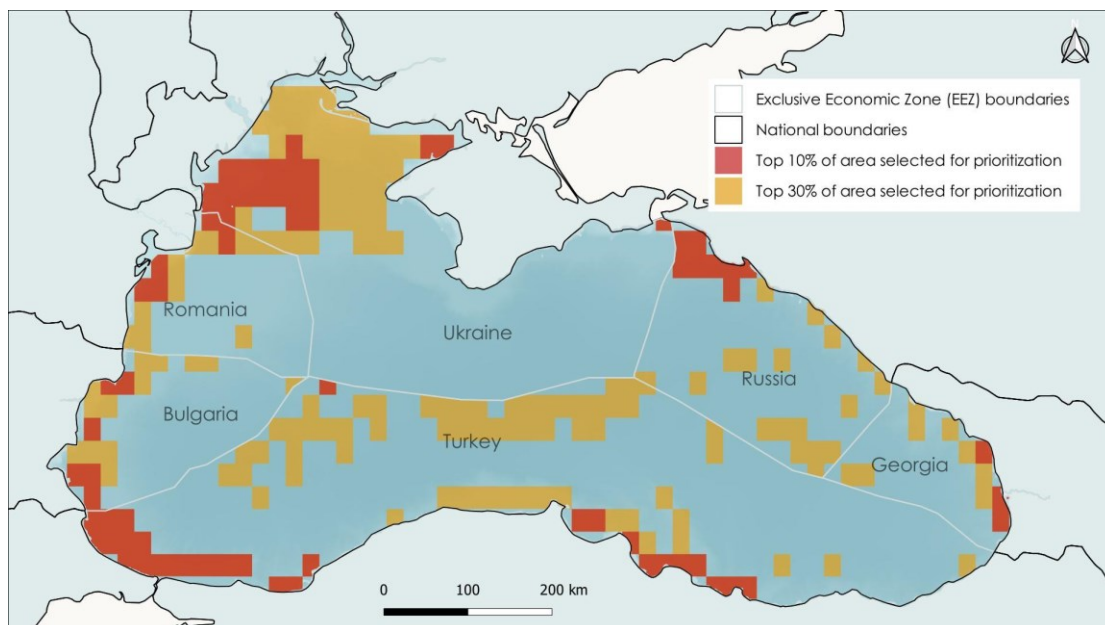
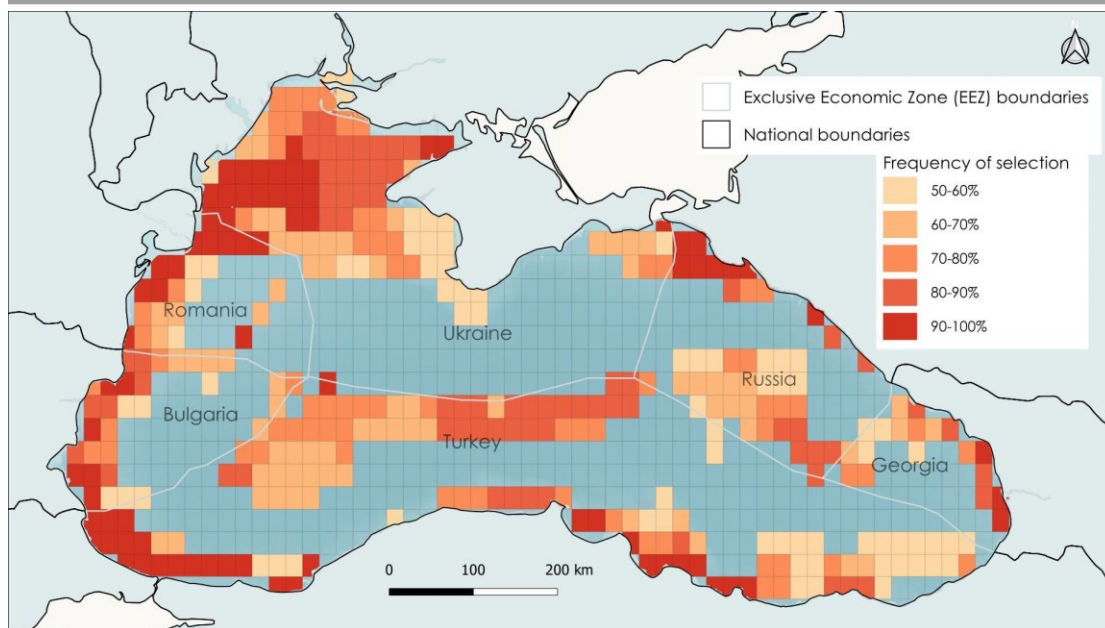


**Scenario:** *Future – RCP8.5 2100*

**Run variant:** *MPAs locked in & species weights used*

**What this scenario represents:**

This scenario explores the future distribution of marine biodiversity in the Black Sea under projected climate change by the year 2100, using **Representative Concentration Pathway 8.5**. It examines how conservation priorities might shift when accounting for changing species distributions due to climate change, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.





# Worst case climate change scenario

**Scenario:** *Worst case scenario*

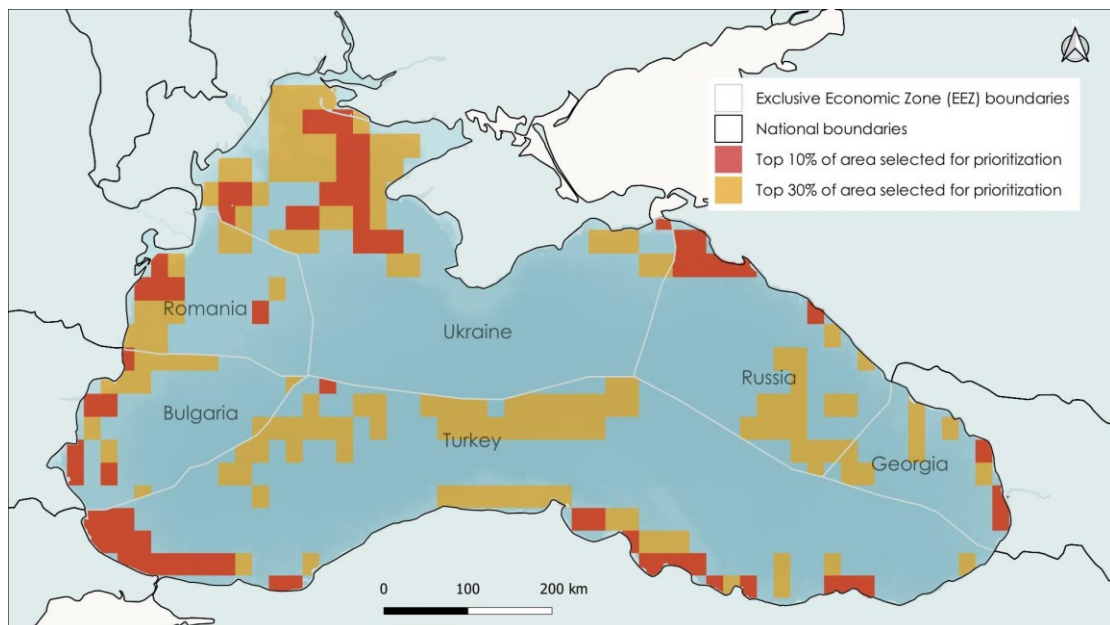
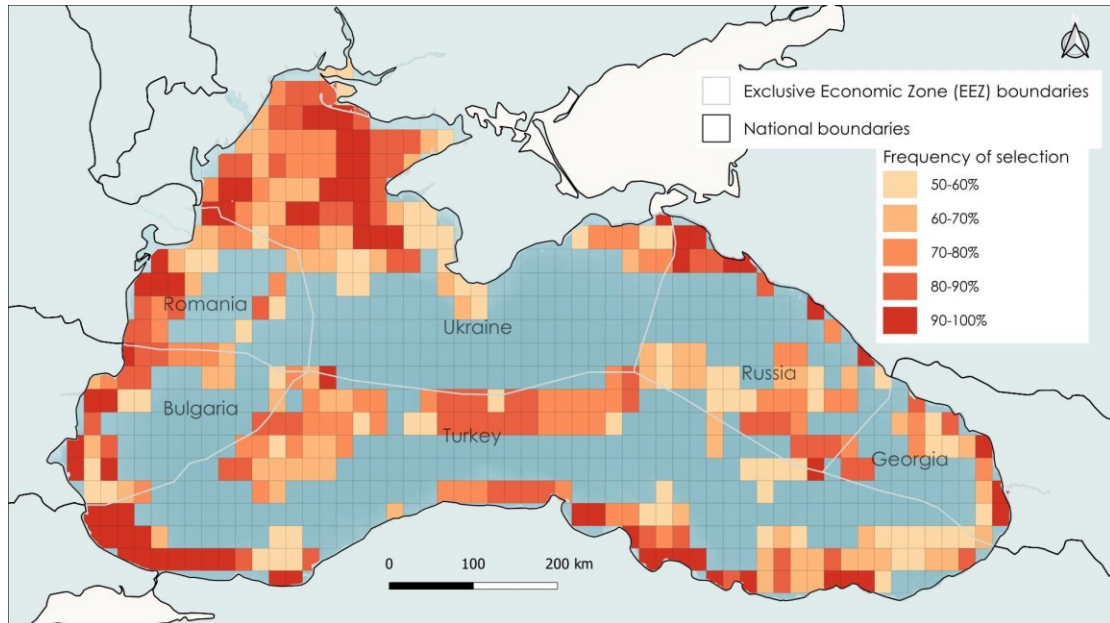
**Run variant:** *No MPAs & no species weights used*

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## What this scenario represents:

This scenario explores conservation priorities for the Black Sea under a severe climate change future (RCP8.5 - year 2100), combining multiple climate change components to identify areas likely to remain valuable for biodiversity even under extreme warming.

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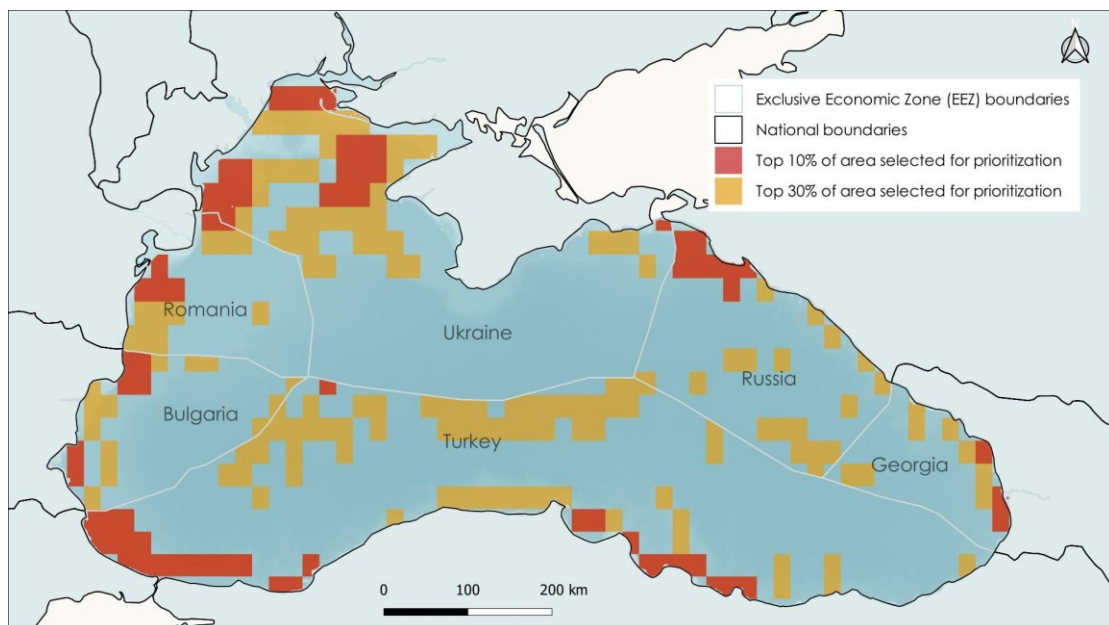
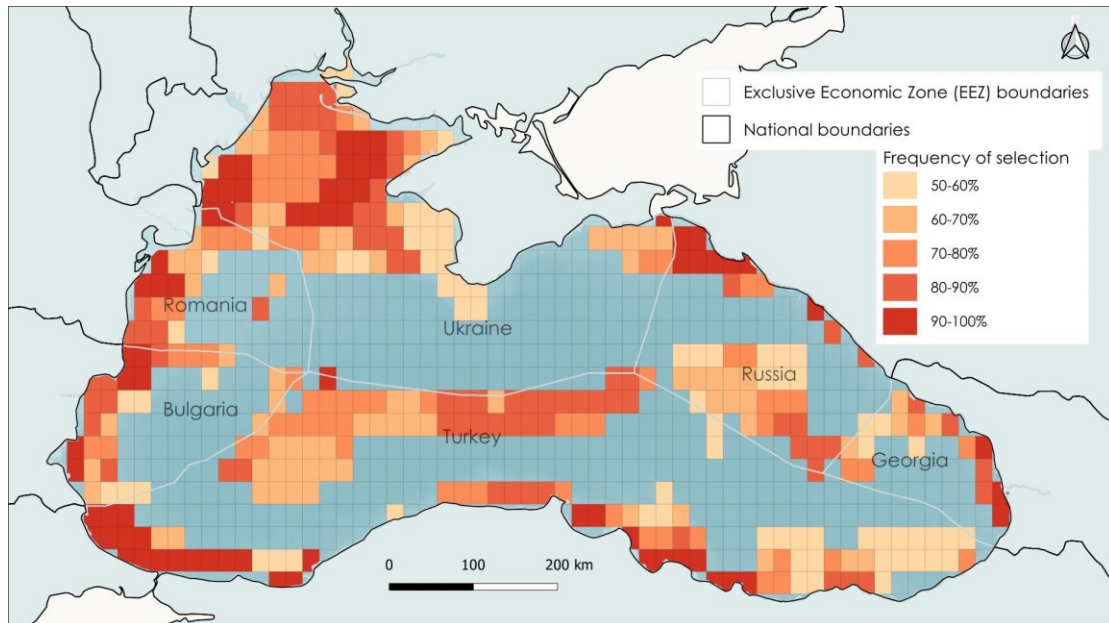
**Scenario:** *Worst case scenario*  
**Run variant:** *No MPAs - Species weights used*

---

**What this scenario represents:**

This scenario explores conservation priorities for the Black Sea under a severe climate change future (RCP8.5 - year 2100), combining multiple climate change components to identify areas likely to remain valuable for biodiversity even under extreme warming, while giving higher priority to species of greater conservation concern.

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**Scenario:** *Worst case scenario*

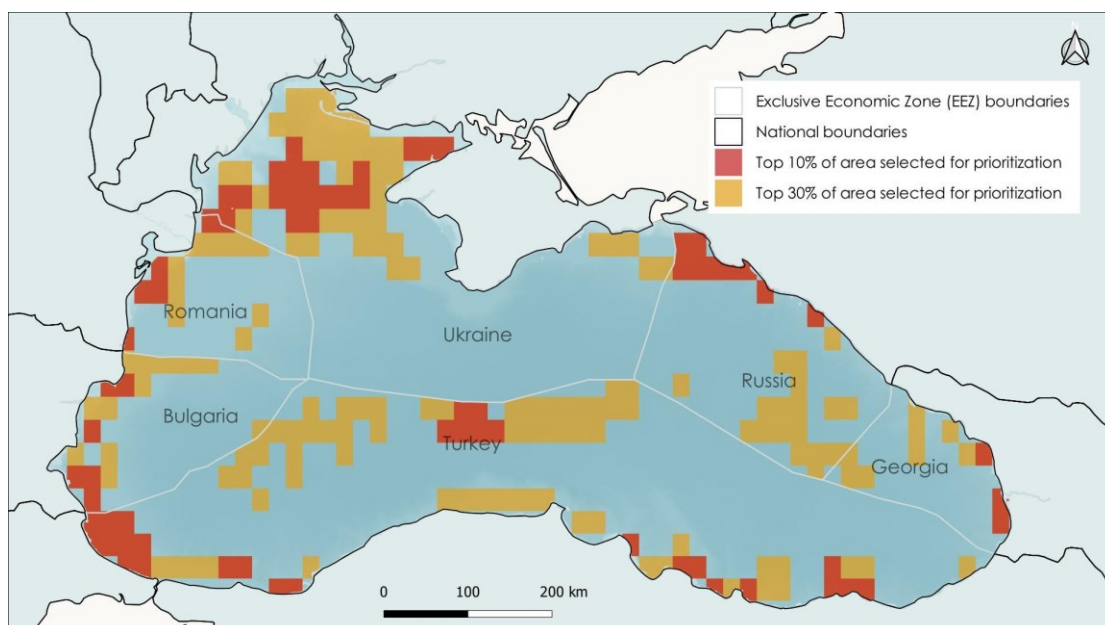
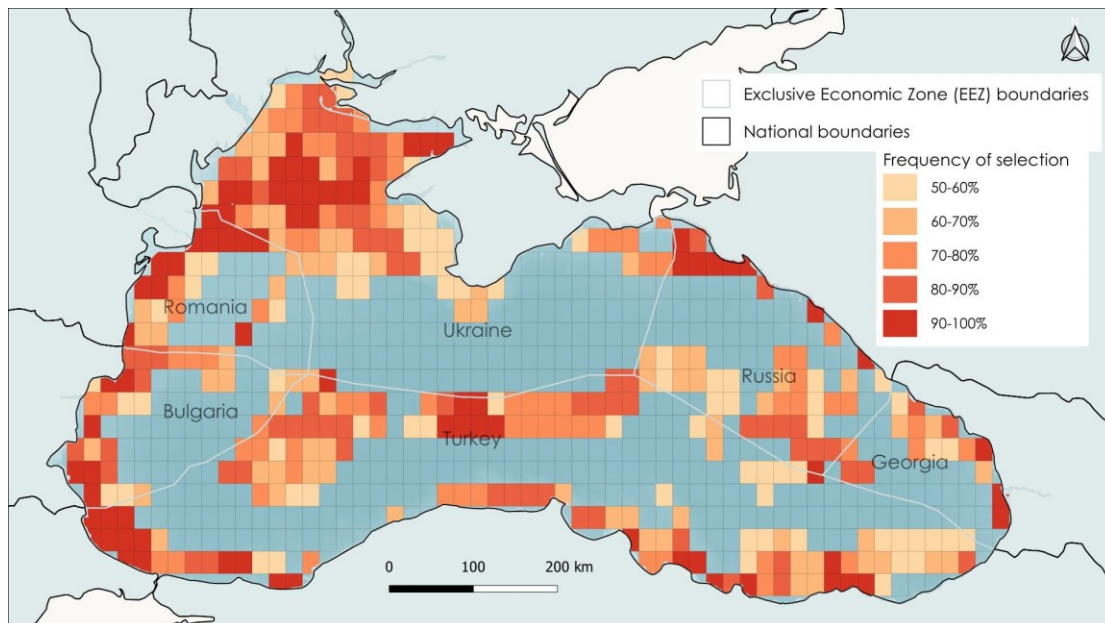
**Run variant:** *MPAs locked in - no species weights used*

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**What this scenario represents:**

This scenario explores conservation priorities for the Black Sea under a severe climate change future (RCP8.5 - year 2100), combining multiple climate change components to identify areas likely to remain valuable for biodiversity even under extreme warming, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution.

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**Scenario:** *Worst case scenario*

**Run variant:** *MPAs locked in & species weights used*

---

**What this scenario represents:**

This scenario explores conservation priorities for the Black Sea under a severe climate change future (RCP8.5 - year 2100), combining multiple climate change components to identify areas likely to remain valuable for biodiversity even under extreme warming, while ensuring existing Marine Protected Areas (MPAs) remain part of the solution and giving higher priority to species of greater conservation concern.

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