



Workshop European Atlas of the Sea

www.european-atlas-of-the-seas.eu

1 Climate Change - Temperature anomalies?

Using the map Sea surface temperature anomalies, answer the following questions:

In which sea or ocean has temperature increased the most?

Why do you think this area is warming more than the rest of the ocean?

In which sea or ocean has the temperature decreased the most?

Why do you think this area is becoming colder?



2 Climate Change – Sea level rise & coastal erosion

Using the map on Relative sea level trends, answer the following questions:

By how many millimeter (on average) per year is the relative sea level rising along German coasts? What do you think will happen in the future?

Are there places where the relative sea level is falling? What do you think is the reason for this?

Using the map on Coastline erosion, answer the following questions:

What has happened to the German coastline along the North Sea and Baltic Sea in the last 10 years? What do you think will happen in the future?

Around which European sea is the coastline expanding (coastline accretion)? What do you think is happening here?



3 Overfishing

Using the map **Catches by country**, answer the following questions:

Which 3 European countries catch the most fish? How many tonnes of fish do they catch in a year?

How many tonnes of fish does Germany catch in a year?

Using the map **Stocks by fishing zone**, answer the following questions:

In which sea or ocean is the majority of the fish populations (stocks) overfished?

Are they close to the countries that catch the most fish?

Using the map **Quotas by species**, answer the following question:

How many tonnes of the following fish species is Germany legally allowed to catch?:

- Cod?
- Haddock?
- Atlantic Salmon?

Do you think these quotas are sufficient to restore fish stocks?



4 Beach litter

Using the map **Beach Litter - Composition of litter according to material categories**, answer the following questions:

Which is the most abundant type of litter? What do you think are the reasons for this?

Which monitored beach is closest to Hamburg:

- In the North Sea?
- In the Baltic Sea?

What are the differences in litter composition between these two beaches?

Using the dataset on beach litter composition available at bit.ly/2kx4dQb, answer the following questions:

What are the different survey types during which the data was collected?

What are the advantages and disadvantages of the different survey types?



Investigate the evolution of European beach litter composition through time and answer the following questions:

In what year(s) do you see the largest changes in litter composition along the European beaches?

What types of litter are increasing or decreasing?

What are the possible causes for these changes?

Investigate changes in data collection through time and answer the following questions:

How many beaches from each country were surveyed in 2018?

Are the changes in 2018 representative for Europe?

Are there any changes in data collection in 2012?



Using the map **Beach Litter - Composition of litter according to material categories** and your previous findings, answer the following questions:

Which country has a lot of paper litter?

Did this country change the number of sampled beaches in 2012?

Which countries have a lot of glass litter?

Are there significant changes in the number of sampled beaches in these countries?

What can you conclude on the causes of the observed changes in the litter composition along European beaches?



Extra exercises using the map Beach Litter - Composition of litter according to material categories and the dataset available at bit.ly/2kx4dQb:

Per group, pick a European country and investigate how the composition of beach litter has changed over time.

Per group, pick a beach where the survey type is “cleaning” and investigate how beach clean-ups change the litter composition.