



# 2030 Ocean's Odyssey



# A Story by youth for youth

This story has been written and designed by the students of the Bogaerts International School in Brussels for Horizon Europe Mission Ocean, seas and waters, Mission Starfish, in a series of virtual workshops organized by European Commission staff. It is inspired by Mission Board report for 'Mission Starfish 2030: restore our ocean and waters' of September 2020.



Hi, we are the slipper lobster and the starfish. The two of us are very good friends and we will take you through this story.

## Say hello to our Characters



Oil & Money  
Defendant's Attorney  
Greed



Judge



Mother Earth



Mother Earth's Attorney



Witnesses Rubber Ducks



Expert witness Seal



Witness Trash Monster Blob



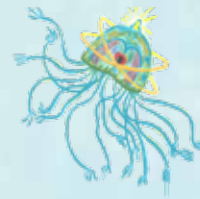
Witness Orca



Witness Dolphin



Witnesses Lionfish



Witness Jellyfish



Witness Plankton



Witness Pufferfish

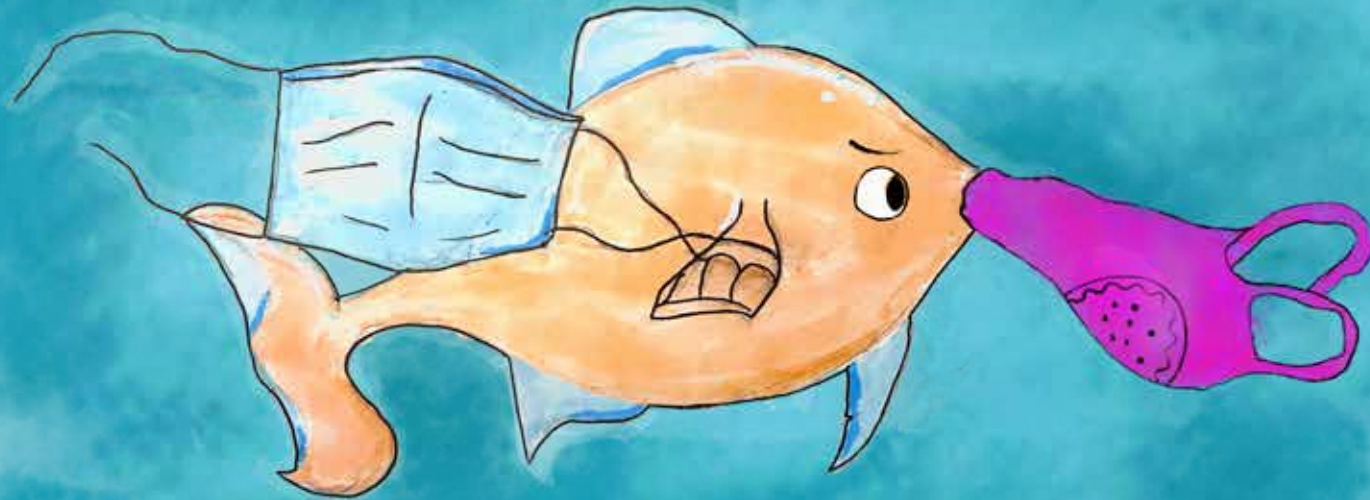


Witness Turtle



Once upon a time ...

there was little Timmy. He thought that he could eat a plastic bag and play with a discarded face mask ...



Oh no! He got the face mask entangled in his fin and he's sick of having eaten the plastic bag.  
Who will save him?!

It is too late ... little Timmy has died ...



More and more marine and water animals are suffering and dying from plastic, chemical pollution, oxygen depletion, climate change and other human impact on the ocean and waters ...



# A little later ...

Mother Earth!  
Look, little Timmy has  
lost his life!  
He choked on a plastic  
bag and got entangled  
in a face mask!



I can't stand this anymore!  
This has been the last drop!  
These humans have a beautiful  
Earth, why must they destroy  
more of it?!

I should bring this to them and  
see who is responsible for these  
gruesome acts. Let's go to court  
to have them banished from our  
ocean and waters!



This is where our  
story begins ...



No, the story began  
much earlier when the  
humans started destroy-  
ing our ocean and water.



It's about time  
to do something  
about this!





Upset and deeply concerned Mother Earth has asked Ocean and water court to hear her case against ocean and water polluters, humans and their companies. All the water and marine animals come with her to the court ...

Good morning humans and animals, calling the case of the marine and water life of the world against the ocean and water polluters.

The charges being discussed today are the chemical pollution, garbage islands, plastic contamination, ocean acidification and eutrophication.

It is suggested that these cause death and harm to marine life. We will hear how the defendant may be causing this. Are both sides ready to begin?

Oh, come on, this is an exaggeration!

Mama Earth, do you see MEEEEEE???

I'm curious what the other side came to say ...





The judge asks Mother Earth as the plaintiff to present her opening statement ...



They contaminated the water cycle!

Hello your Honour!  
We are ready.

I'm the Mother Earth and I stand here today as the plaintiff against the polluters to defend my precious ocean and water from the harm that they are enduring.

We will show that the defendant has created dangerous garbage islands the size of France, littered the ocean with plastic, caused ocean acidification and eutrophication. This has disrupted Earth's water cycle.



The defendant supported industries releasing chemicals that affect people's and marine life's health. They have tricked their own consumers into believing that they do no harm by using the products that harm the Earth. Your Honour, I ask you to banish all polluters from my ocean and waters forever.

Finally, they give us a voice!



Did you know that ...



Imagine, that the water dinosaurs drank still circulates through the water cycle today!



Why does the water cycle matter to all of us?

The water on Earth circulates in a closed cycle. It evaporates from the ocean and land, condensates in clouds and returns on land and ocean in the form of precipitation (for instance rain, snow, hail) and returns to the ocean through rivers and streams and through infiltration in the ground. The water cycle makes life possible on Earth. It supports many human activities, not only agriculture, energy production and many industries, but also our leisure activities (such as water sports and skiing).

Hello!  
I am the seal, your science expert! I am here to explain the scientific terms used in this story.  
Don't hesitate to ask me.



What is the water cycle?





Now it is the defendant's turn to make his opening statement ...

Hello your Honour. We are more than ready!  
I denounce every statement that Mother Earth, the plaintiff, has just made. Your Honour, I am here to defend the good name of humans everywhere and their rightful needs.

Mother Earth has been far too quick at placing all the blame on us without mentioning the fact that there are natural processes that exist for millennia and have nothing to do with humans or their companies. For instance, the nutrients are present naturally in the ocean and water.

Hush, perhaps they do have something important to say ...  
Who are they?



Typical human, can think of himself only, but what about us?





And he continues with his statement ...



The dead zones occur because of microorganisms that harvest oxygen.

The ocean has been changing its chemistry over time even before humans walked on this planet.

What Mother Earth asks is ridiculous! It would cause death to all humans. We cannot live without water and ocean.

Your Honour, I ask you to dismiss this case immediately.

Do you think that he may be right?

He says only what suits him and his humans and not the whole truth.





The judge asks Mother Earth to present her witnesses and evidence. Mother Earth calls as a first witness the Pufferfish to testify about the death of his friends caused by eutrophication.





The pufferfish testimony continues ...



He means fish-friends ...

I'm not going to lie and say that this was an unusual way to die as I know various „fishiends“ that have been taken by these strange hands, and these poor fish don't come back.

Now that's really tragic!

There are dead zones in that area and massive eutrophication!

Did you notice anything particular about the tragic death of this small zebrafish?



... can you remind me what are dead zones?  
... and what is eutrophication?







We, pufferfish are marine and estuary fish known for our special defences.

We can fill our especially elastic stomachs with water and sometimes with poisons to avoid being eaten by predators.

This looks awful! How can we stop it?



Here we are!  
Thank you!

The old grumbling pufferfish sobs and weeps.

He begins to ramble on and on about the disappearance of many of his other friends, a topic which is far more important to him than being at the court.

The judge is enraged: „Where is the science in this?!“ she asks the defense attorney. „I will not have my courtroom turned into a circus!“

The plaintiff's attorney replies „Yes, I'm sorry your Honour. We will concentrate on science shortly. But please do see his sorrow and his pain, they matter in this case as much as science does.“

„My expert witness, the seal, can confirm that in other areas marine and freshwater fish and other animals suffocate because of oxygen depletion from water caused by excessive algal blooms that feed on human pollution from sewage and agriculture. The humans and their activities have created dead zones of unimaginable size that suffocate every living being that gets in such place.“

The plaintiff's attorney further explains „You see, there is more to this, the pufferfish are native to the tropical waters. These waters have a history of having red tides that are caused by harmful algal blooms. The harmful toxins that these algal blooms emit can cause serious health effects on fish and humans. The disappearance of his friends is caused by this.“



# Did you know that ...

## Eutrophication:

Plentiful nitrogen and phosphorus from agricultural run offs and sewage present in water cause algal blooms in lakes and seas. The dead algae sink to the bottom and decompose. This removes oxygen from water and water organisms suffocate.

Large dead zones exist in many seas because of this. The algae also produce toxins, which can make animals and even you sick.

## Dead zones:

Organisms living in water need oxygen, along with food, to survive. Surplus nutrients, such as phosphorus and nitrogen, trigger algal blooms.

The dead algae decompose, which requires a huge amount of oxygen. The use of oxygen results in oxygen deficiency, which creates dead zones (hypoxic zones). In 2004 scientists counted 146 hypoxic zones in the world's oceans; in 2008, that number went up to 405. All the organisms present in those zones die from suffocation.

Since 1900 the oxygen has been depleted from 5 000 to 60 000 km<sup>2</sup> of the Baltic Sea. This is why the Baltic Sea has the largest dead zones in the world.

Yes, unless you swim away ... really fast!

Does this mean that I die when I get into a dead zone?





„Mother Earth, please tell us, what the defendant has done that has brought you to this court with these were serious charges. Tell us ... for little Timmy, our zebra fish....“ invites the plaintiff's attorney Mother Earth to speak ...



Mother Earth is furious now!

The green nut has nothing relevant to tell us!

Counsel, you are breathing underwater because of your diving apparatus. You have that choice.

The fish and other sea creatures of our blue waters are not so lucky! The polluting runoffs from your sewage and agriculture literally rob ocean dwellers of their chance to breathe. There is more to this however ...



Are you surprised? All they do is deny everything.





Eeeeh, is it also in my body now?



Yes, it concerns all of us!  
By the way - what are PCBs?

All this has been done only to improve people's lives! Do you at all realise that thanks to medicines, fertilisers and pesticides people live longer and healthier lives and have enough food on their plates every day?!

Your Honour, I can confirm that in the last 100 years chemical pollution from human activities was on the rise. In particular organic compounds, such as pesticides, PCBs, toxic metals and pharmaceuticals have impacted negatively many marine organisms.

Our beautiful corals, seaweed and seabed are tainted by the presence of chemical pollution and plastic debris. The chemical pollution is impacting the health of all who live in the ocean. It accumulates in their bodies, without them even knowing about it.





# Did you know that ...



Well, you live on the sea bed where many chemicals end up as a part of sediments.

Good that I am not using a toothpaste.



## Chemical Pollution:

Since the industrial revolution humans produced and released into the environment many chemicals of which they have only much later learnt that they may be dangerous for marine and water life. The most important chemical contaminants include organic compounds (pesticides, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs)), toxic metals (mercury, lead, cadmium, arsenic, copper and zinc) and pharmaceuticals and personal care products (PCCPs). The climate change, driving ocean acidification and increases in ocean and water temperature, may contribute to increased toxicity of those pollutants to marine and water organisms.



Since these chemicals at the end accumulate in my body, I wish I could feel as well as I look ... at least I'm still alive and can share this story with you!



## Bioaccumulation

is a buildup of harmful substances in an organism mainly because the intake of the harmful substances is higher than their degradation or excretion by the organism.

**Biomagnification** means that a harmful substance is present in ever higher quantities in the successive steps of the food chain. This may happen because of substance's persistence, quick accumulation or slow degradation or excretion by the organism (because the substance does not dissolve in water).

When oil spills release toxic chemicals into the ocean, they bio accumulate in the highest levels of the food web which kill fish, birds and marine mammals that are at the top of the food chain.



## Did you know that ...



So, they are useful, but we don't know how to get rid of them ... perhaps recycle?

So, what are all these chemicals good for?



### Persistent Organic Pollutants, POPs

are organic compound molecules resistant to natural degradation. After being consumed by marine and water life they accumulate in their fatty tissues as they dissolve in fats rather than in water. Many POPs were used as pesticides, solvents, fire retardants, heat exchange fluids, paint additives and are products of combustion processes.

Because of their bioaccumulation and their capability to harm human health, food chains and the environment there are many restrictions that the international community placed on POPs by the Stockholm Convention on Persistent Organic Pollutants.

**PCBs (Polychlorinated Biphenyls)** are organic substances that include chlorine atoms. They are very difficult to break down by natural processes. Their stability made them useful for many industrial applications, such as coolants for electric equipment, carbonless copy paper production and heat transfer fluids. They accumulate in water organisms, mainly in their body fats, and at the sea floor. They stay in the environment for a very long time and may contaminate food chains. Many of them are toxic to marine and water organisms and may cause cancer to humans.

**Dioxins** are organic substances that include oxygen. They are by-products of industrial processes such as pesticides manufacturing and burning of waste. They are highly toxic to both, marine and terrestrial life and may cause cancer to humans.

### Mercury (Hg)

is a liquid metal in its elemental inorganic form, toxic even in small quantities. The most toxic form of mercury is methylmercury  $[\text{CH}_3\text{Hg}]^+$  that can accumulate in food chain due to bioaccumulation and biomagnification. This may lead to high concentrations of mercury in fish and shellfish eaten by humans. The main source of methylmercury are bacteria living in sediments that form methylmercury from human sources (e.g. burning of fossil fuels and coal) and natural sources (volcanos and rock weathering) of inorganic mercury in rivers, seas and ocean. In the ocean, the highest methylmercury concentrations occur in the depths between 100 -1 000m where many marine organisms live.

Methylmercury pollution affects most marine mammals at the top of the food chain.

They are useful for many human activities, but the humans realised only much later that these chemicals stay with all of us for very, very long time. This is because they do not decompose in the environment through sun, the action of light, water or bacteria.





Your Honour, I am calling other witnesses to testify about the plastic pollution that the humans and their companies spread in the ocean.

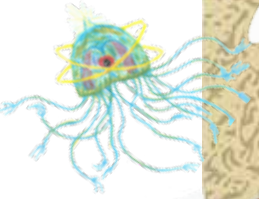


Our family, friends and we dolphins swim out further and further for cleaner water and less pollution, but oh, how it finds you everywhere!



My little brother ate a flipflop because he had mistaken it for his dinner, poor thing!

I want to sting every human in this courtroom for my oyster friends!



I got stuck with a plastic bag around my neck for so long, my teenage kids thought it was a new fashion style!



Wow! Is there anyone who has not had an encounter with plastic?

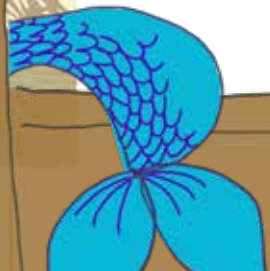
I got tangled up in a plastic wrapper on my way back home from school. If it weren't for my neighbour who happened to swim by, I could have starved to ... death!



Our family, friends and we have seen all the other animals suffer from this pollution, all around the blue waters, can you believe it? This is a nightmare and it cannot go on for any longer.



No! That's because everyone is affected by this!





# Did you know that ...



Hope this is all.  
I'm really worried!

How comes that  
all my friends  
come across all  
this plastic all the  
time?



## Plastic:

is a very convenient material used by all of us. We have produced 9, 2 billion tons of plastic between 1950 and 2017. It's estimated that every year, 8-20 million tons of plastic end up in the ocean. We clean up from the ocean only 10,5 % of this huge volume! Plastic breaks in the ocean into tiny pieces (microplastics) that are eaten by marine animals and sea birds and make them sick. Turtles, marine mammals and sea birds as well as other marine animals get entangled in discarded fishing gear and other plastic or get hurt by it.

## Garbage patches:

are large areas covered by litter, fishing gear, and other marine debris. They form because of gyres. Gyres are moving ocean currents, which pull trash and other debris that then are deposited in the center of the gyre. The rotating currents shift and move, causing the garbage patches to change shape and location. The largest garbage patch is the **Great Pacific Garbage Patch** with a surface area of about 1,6 million square kilometers, which is **3 times the size of France**. These garbage patches have caused many alien species of fish and bacteria to be carried to other ecosystems. Due to photo-degradation plastics break into microplastics and potentially harmful bacteria hitch rides on them to new areas.

This is because the human discard in the ocean somewhere between 8-20 tons of plastic every year of 300 million tons produced annually!





## Did you know that ...



But all this could be cleaned! If only people made a little effort and cared ...

Plastic from cloths, how is that possible?



### Microplastics:

are tiny pieces of plastic under 5mm. Microplastics can be divided into two categories: Primary microplastics (microbeads) are small polyethylene pieces used in toothpastes, air blasters, facial cleaners and cosmetics. Secondary microplastics are smaller pieces of plastic from various disintegration processes, for instance caused by sunlight exposure for a long period of time. These include fibers from our cloths and other daily use items.

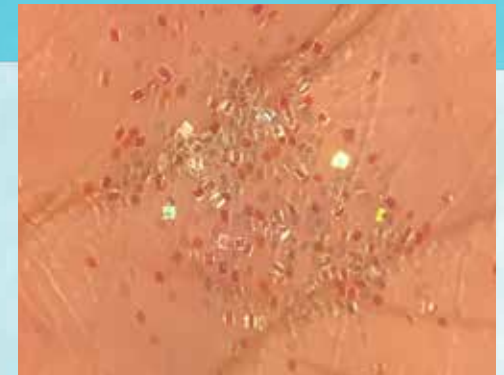
A 2015 study revealed that in Denmark 5 500 to an estimated 14 000 tons of microplastics are released into the environment from cars, truck tyres and even from the footwear.

Marine animals including birds and turtles consume microplastics, which end up blocking their digestive systems and change feeding behaviour, reduce growth and reproduction. Some consumer so much microplastic that they slowly starve to death. It is estimated that each year, 100 000 marine organisms die from plastic entanglement and another 1 million seabirds die from plastic consumption.



### Microplastics and nanoplastics:

are plastic particles of size equal and less than 100 nm (1/10 000 mm). These particles are harmful for organisms because they are absorbed into their digestive tracks and are transported into their tissues and organs. Microplastics have the ability to damage cells, injure tissues, and cause inflammation but they cannot pass through cell walls but nanoplastics can pass that barrier into individual cells.



As people wash their clothes, tiny polyester fibres or other synthetic materials break off and end up in waste water. The waste water flows into rivers and with them into the ocean.



Mother Earth calls the jellyfish to testify about acidification of the ocean and its impact on marine life ...

Would not be so bad, perhaps it would wake them up ...



That's not our problem. We are never going to the coral reefs and have no interest in oysters! Besides, where is the proof that we have had anything to do with it?!

In my youth coral reefs were full of color and life. Now, many are grey and lifeless. Many of my friends whose bodies are covered in shells complain that their shells are so thin they barely protect them. Without their shells they are sick and dying! I have lost all my oyster friends.

You, the jellyfish are practically immortal. Can you tell us what you have observed for the last 100 years in the coral reefs and other parts of the ocean?



I bet he will soon sting the humans in this court room!



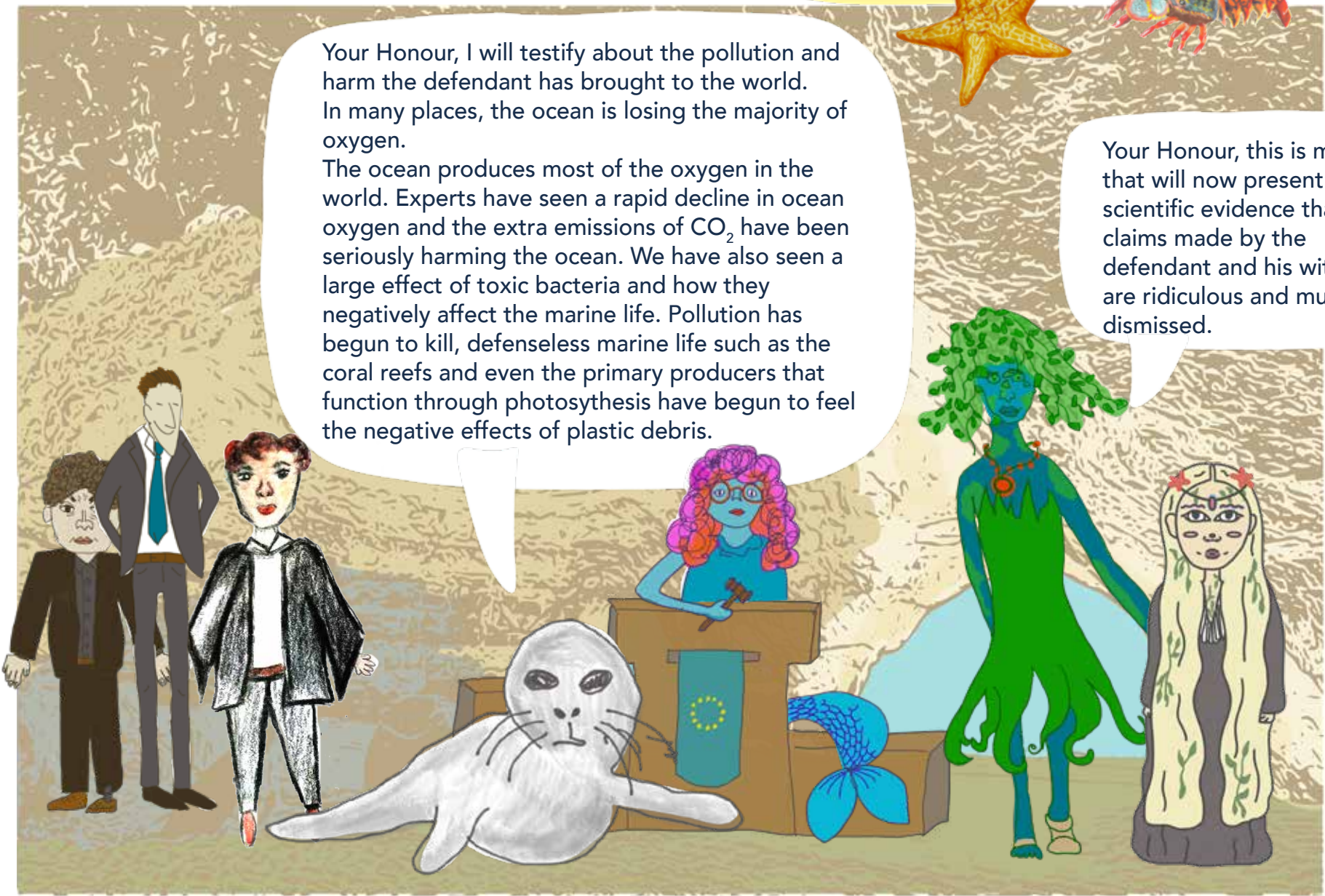
Mother Earth now calls the seal as an expert witness ...

Let's hope that this will convince the judge she does not seem pleased ...

Finally someone brings the facts in

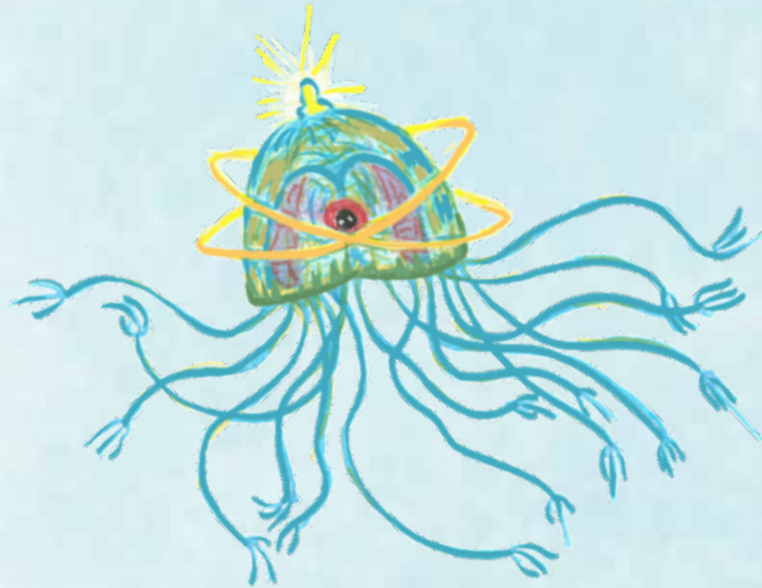
Your Honour, I will testify about the pollution and harm the defendant has brought to the world. In many places, the ocean is losing the majority of oxygen. The ocean produces most of the oxygen in the world. Experts have seen a rapid decline in ocean oxygen and the extra emissions of CO<sub>2</sub> have been seriously harming the ocean. We have also seen a large effect of toxic bacteria and how they negatively affect the marine life. Pollution has begun to kill, defenseless marine life such as the coral reefs and even the primary producers that function through photosynthesis have begun to feel the negative effects of plastic debris.

Your Honour, this is my expert that will now present scientific evidence that the claims made by the defendant and his witnesses are ridiculous and must be dismissed.





How can they think that we should spend our lives in such devastation?!



The plaintiff's attorney asks quietly the immortal jellyfish on the witness stand „Why do you think this is happening?“

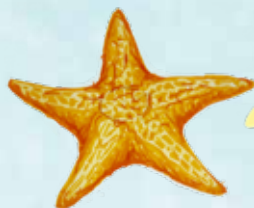
The jellyfish wobbles for a moment in the witness stand and then slowly, thoughtfully answers: “I'm not sure why. But one thing is sure - the people are responsible for this.”

The defendant's attorney jumps up as if something stung him and shouts: „Objection, your Honour, the witness is merely speculating and dreaming all this up. Look at him, he is too old, his memory is failing him! Nothing has changed in the ocean for the last 100 years!“

The judge calmly turns to the plaintiff's attorney: „Counsel, make your case swiftly and avoid speculations!“

The plaintiff's attorney: insists to the witness: „You must have a reason why you think the humans are responsible for this?“

The jellyfish proclaims slowly: „You see, the water in our ocean has changed since the humans began driving cars and building all those factories. The corals say it stitches them and burns them like a fire. It also got much warmer than it used to be. I feel that myself as well.“



They would not like living there themselves and for us it is ok?!



## Did you know that ...



How can we stop this?

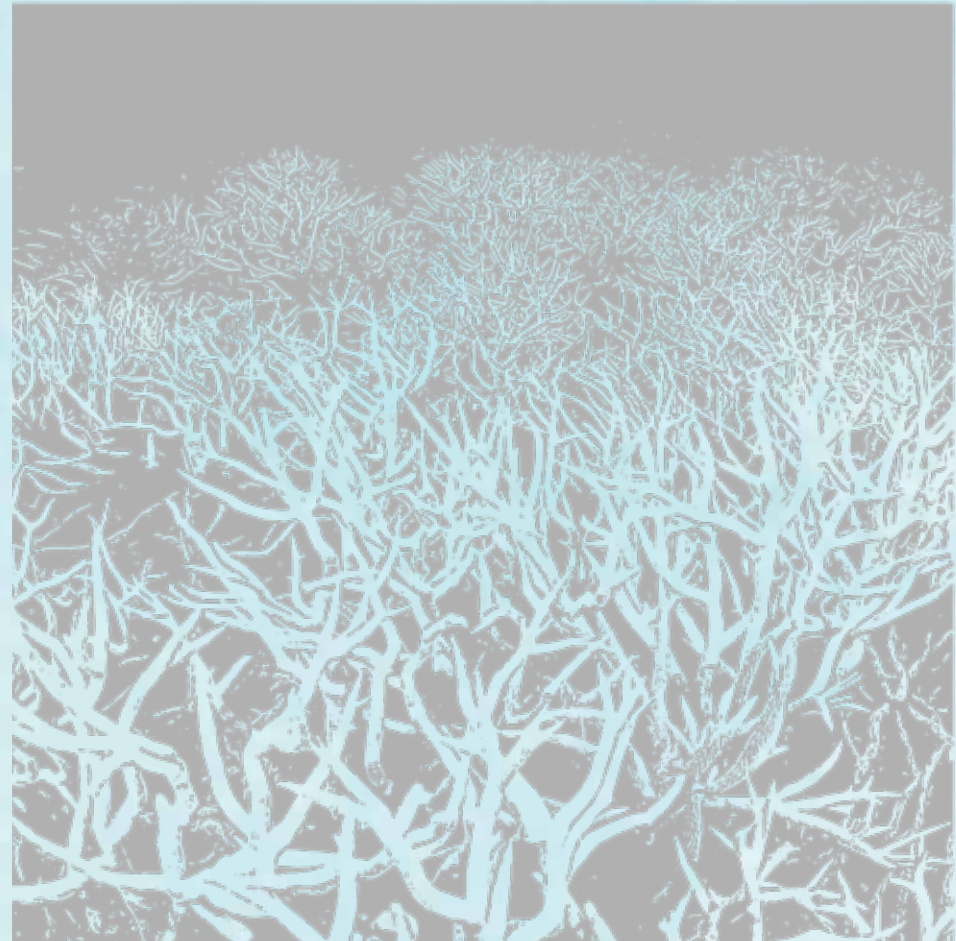
All humans need to reduce the CO<sub>2</sub> they release from their activities!



### **Ocean acidification:**

Is a process in which the pH value of the ocean steadily decreases. This process has been happening since the industrial revolution, around 200 years ago the pH of the ocean was 8,2 and now it is pH 8,1. This change might seem to be very tiny but in reality the ocean acidity increased by roughly 30%. In this process the ocean absorbs higher volume of carbon dioxide (CO<sub>2</sub>) from the air and through various reactions, which makes the ocean more acidic.

Ocean acidification threatens the formation of shells and thus affects shellfish, coral reefs and other organisms with calcium carbonate (CaCO<sub>3</sub>) shells. It also affects larval development.

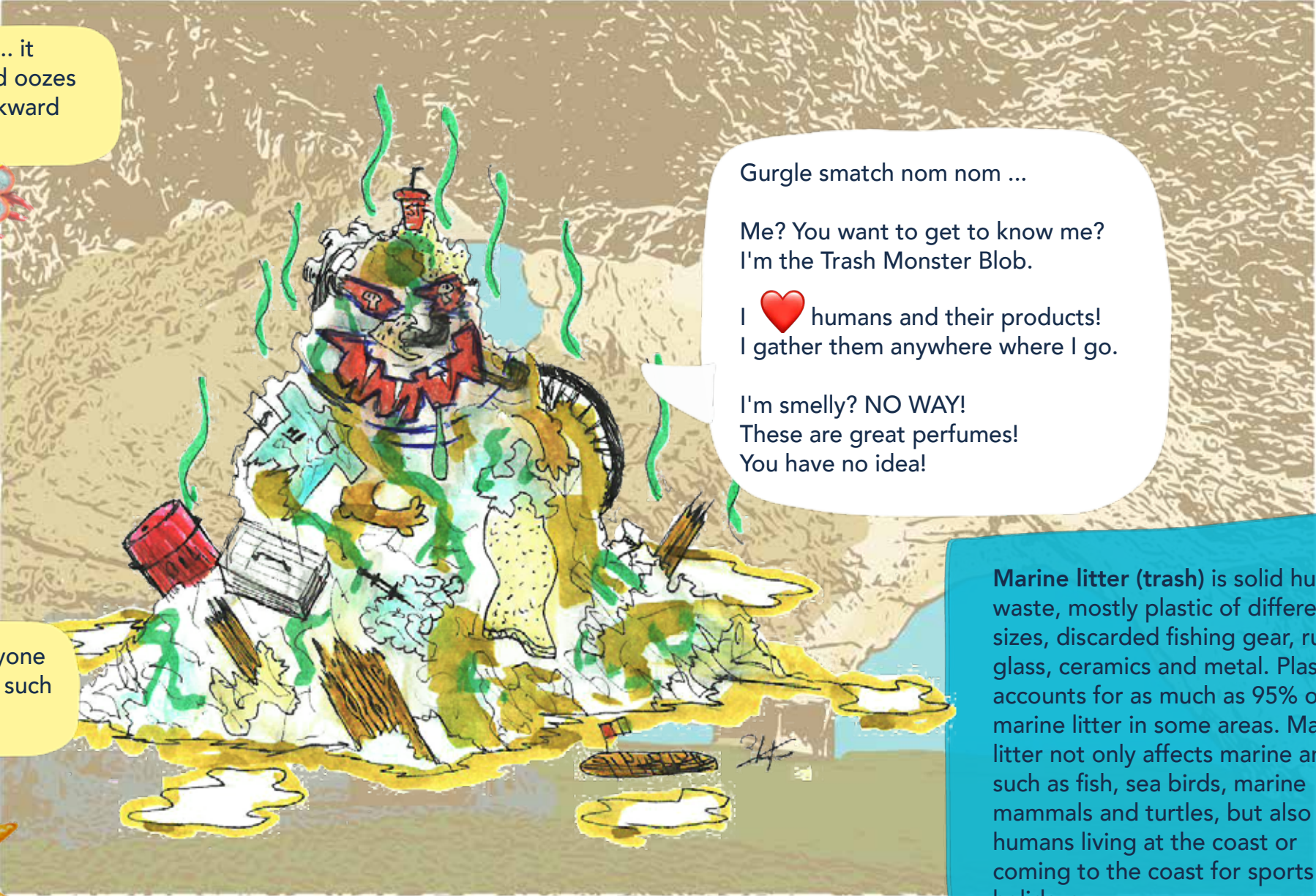


Before the defendant's attorney calls in his witnesses - let's introduce them.  
First, let's meet the Trash Monster Blob

Oh gee, ... it stinks and oozes some awkward liquid ...



How can anyone feel good in such a mess?



Gurgle smatch nom nom ...

Me? You want to get to know me?  
I'm the Trash Monster Blob.

I ❤️ humans and their products!  
I gather them anywhere where I go.

I'm smelly? NO WAY!  
These are great perfumes!  
You have no idea!

**Marine litter (trash)** is solid human waste, mostly plastic of different sizes, discarded fishing gear, rubber, glass, ceramics and metal. Plastic accounts for as much as 95% of all marine litter in some areas. Marine litter not only affects marine animals such as fish, sea birds, marine mammals and turtles, but also humans living at the coast or coming to the coast for sports or holidays.



Now let's meet the three rubber ducks that tell everyone they can do no wrong ...

Ah, yeah, are they not the ones that were shipwrecked?



Hi there, we have made a LOOOOOOOONG journey around the globe!

Hey, I know the rubber ducks! Here is there story!



### The „friendly floaties“ accident

In 1992 a container with 28 000 rubber ducks and other plastic toys fell into the Pacific ocean. The toys travelled through the world oceans. The first ones made their landing on the coast of Alasca in 1992. By 1996 scientists tracked others to Hong Kong, South America and other parts of the Pacific. Thanks to ocean currents the ducks travelled through the Arctic ocean and by 2003 they have washed on the coasts of Europe, east of United States and Canada. They completed 17 000 miles long journey. This shows how plasic thrown into the ocean in places far away from us may end on the beaches in Europe.





The spectators cheer loudly. The defense attorney calls the first witnesses, the trio of rubber ducks, to the stand.

This is getting exciting now!

You'll get your time on the stand to testify, Mother Earth. I promise.

My dear rubber ducks who have braved the harsh waters of the ocean to make their way here, speak of the perfectly legal business of the defendant, trying to create convenience and durability for all of us in the most difficult world ...

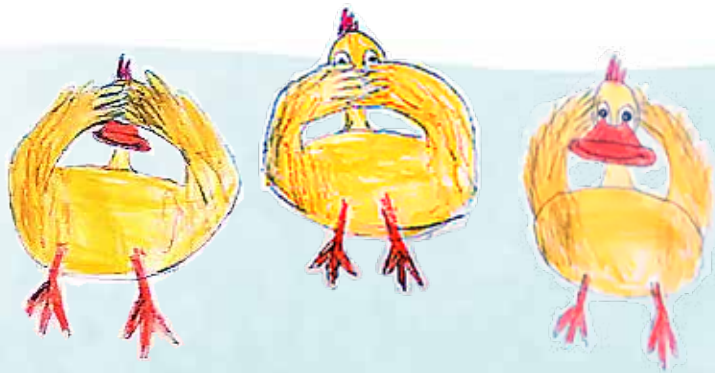
Silence in my courtroom!!

Plastic! This is the issue. I have been telling you about from the beginning! Can't they see the problem?!

But the judge does not agree with you!







Back to the three „See no evil, speak no evil“ rubber ducks crammed into the witness box. The monstrous Trash blob and the defendant's attorney smile at them wickedly.

Plaintiff's attorney jumps: „Objection! Your Honour, the counsel is trying to sway the case with emotionally manipulative language.“

The judge answers calmly: „Sustained. Defendant stick to a reasonable line of questioning regarding your witnesses! Your clients' livelihood and reputation is on the line!“

Defendant's attorney addresses the rubber ducks: „You're made of plastic. You come from the plastic producer here on trial. Do you think you are a danger to the oceans and waterways of our fine planet?“

Rubber Ducks speak one over the other eagerly: „Us, a danger to the planet? Look at us! We are just happy, cute and cuddly bathroom toys. We could not be a danger to anyone! Every child loves us and wants to play with us.“

Surely, the rubber ducks themselves are not responsible for the trash!



Those that throw them away are responsible! Or those who make them?!

One of them, the one with her hands over her eyes, adds creepily: „You see, we don't know what occurred in the factory, but there was surely nothing wrong there! Everything was on the up and up! A fine company! But then we were tossed in the ocean in the middle of the night ...“

„But the ocean, oh, now THAT is another story!“ The rubber ducks seem frightened and suddenly fall silent. They shake nervously on the stand.

Consider that the toy industry uses 40 tons of plastic for every \$1 million in revenues and is the most plastic intensive industry in the world. 90% of the toys on the market are made of plastic.



The defendant's attorney suggests encouragingly to the rubber ducks: „Do tell ...“

He means us!



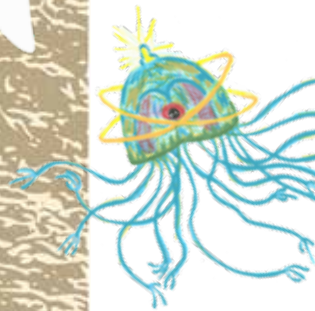
What is he trying to show with that?

And are any of those vicious sea creatures in the courtroom today?

Tossed to and fro!  
Left and right!  
Up and down!  
Over and under!  
Such an aggression!  
Such wetness!  
So many vicious sea creatures wanting to devour us and take a revenge on us!

No way!

Ridiculous!





The atmosphere in the court room is getting thick ...



Don't worry, our Mother Earth will stand up to it!

Your Honour, it's plain to see who the danger is in this courtroom today, the oceans and waters themselves!  
Their actions speak louder than words.

Counsel, tempers are raging. Have your witnesses take the stand and stick to the subject!

Garbage islands! Chemical pollution! Microplastics! Water eutrophication! A ravaged water cycle! Fish are literally suffocating!

WHAT?! This is just a smear campaign! The fish and their friends will not sit back and be bulldozed over by corporate greed and human negligence!



They are getting a bit too far!



The defendant's attorney asks the Trash Monster Blob to take the witness stand ...



He must be kidding!

You are a sea creature as well. Tell us do you mind any plastic or litter in the ocean?

Oh, not at all! I welcome it! You see, I live in the sea as well. These things cause no harm to anyone. And they are extremely useful for all of us.

**Useful?!  
WHAT???**

No, he's serious. How dare he call himself a sea creature?





Mother Earth insists that the seal expert once more takes the stand to rebuff these claims with hard facts and evidence ...



Finally someone brings the facts in!

Your Honour, I will testify about the pollution and harm the defendant has brought to the world. In many places the ocean is losing the majority of oxygen. The ocean produces most of the oxygen in the world. Experts have seen a rapid decline in ocean oxygen and the extra emissions of CO<sub>2</sub> have been seriously harming the ocean.

We have also seen the effect of algae blooms and toxic algae and how they negatively affect marine life through dead zones devoid of oxygen. Pollution and plastic kill defenseless marine life, such as the coral reefs and even the marine plankton feel the negative effects of pollution and plastic debris, in particular micro and nanoplastic particles.

Your Honour, this is my expert. He has a lot to say to these ridiculous claims made by the defendant and his witnesses.

You may find the truth too turbulent ...

We want the trust and only the truth ...

There may be more to the truth than you can bear ...



Let's hope that this will convince the judge, she does not seem pleased ...



Hi, I'm a Mariana Trench Lobster. I live in the depth of the ocean, where there is no sun light. I do not see so I hunt by sensing vibrations. Recently scientists found that I have eaten tiny pieces of plastic from the seabed.

**Consider this:**

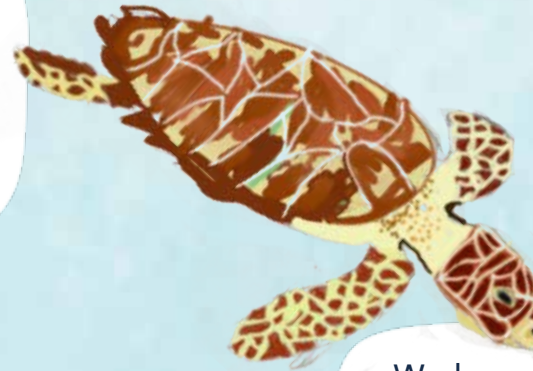
Currently humans throw 8-20 million tons of plastic into the ocean every year, and only 10,5% of this volume is actually cleaned up!

If humans don't stop polluting at this rate, it is estimated that there will be 34 billion tons of plastic in the ocean by 2050.

It's estimated that there are 5 trillion pieces of plastic floating around in the world oceans.

Every minute one garbage truck load of plastic ends up in the ocean.

It is said that by 2050 there will be more plastic than fish in the ocean.



Hey, starfish where are you? Will I still be able to see you with all this plastic between us?

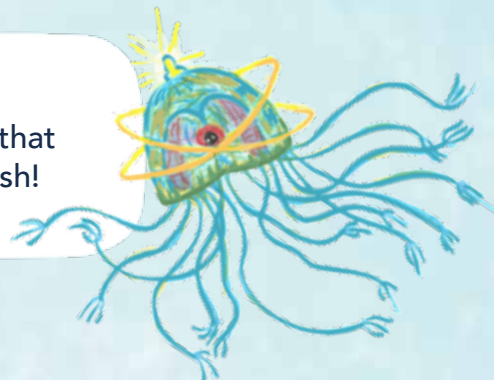


We love eating jellyfish and snap at anything that looks like them. Unfortunately, a floating plastic bag looks exactly like a jellyfish - though it tastes awful. We either suffocate on them or they block our digestive system and we die of hunger.



You will ... if humans clean up their mess ...

NO! Don't eat that human trash!





Listening to the words of the seal expert the Trash Monster Blob begins to transform, leaving behind a mountain of debris, crying and shaking ...



Woow - see who is emerging from the Trash Monster Blob!

Humans have ruined my life! I have believed in them so much! I have served them! No one doubted the fact that I was part of the human organization. I want to pay them back for all the abuse. I believe that it is the time now to explain to my Mother Earth, and all my old friends that stand united here, my reasons for turning my back on my home. I have been alive for centuries and all I have seen is how the humans have destroyed our world ...

Octopus, humans are creatures of this world as well! All I want is for them to simply see the wrong in their actions and fix it.



Yeah - I'm free!!  
Mummy look  
I'm here!



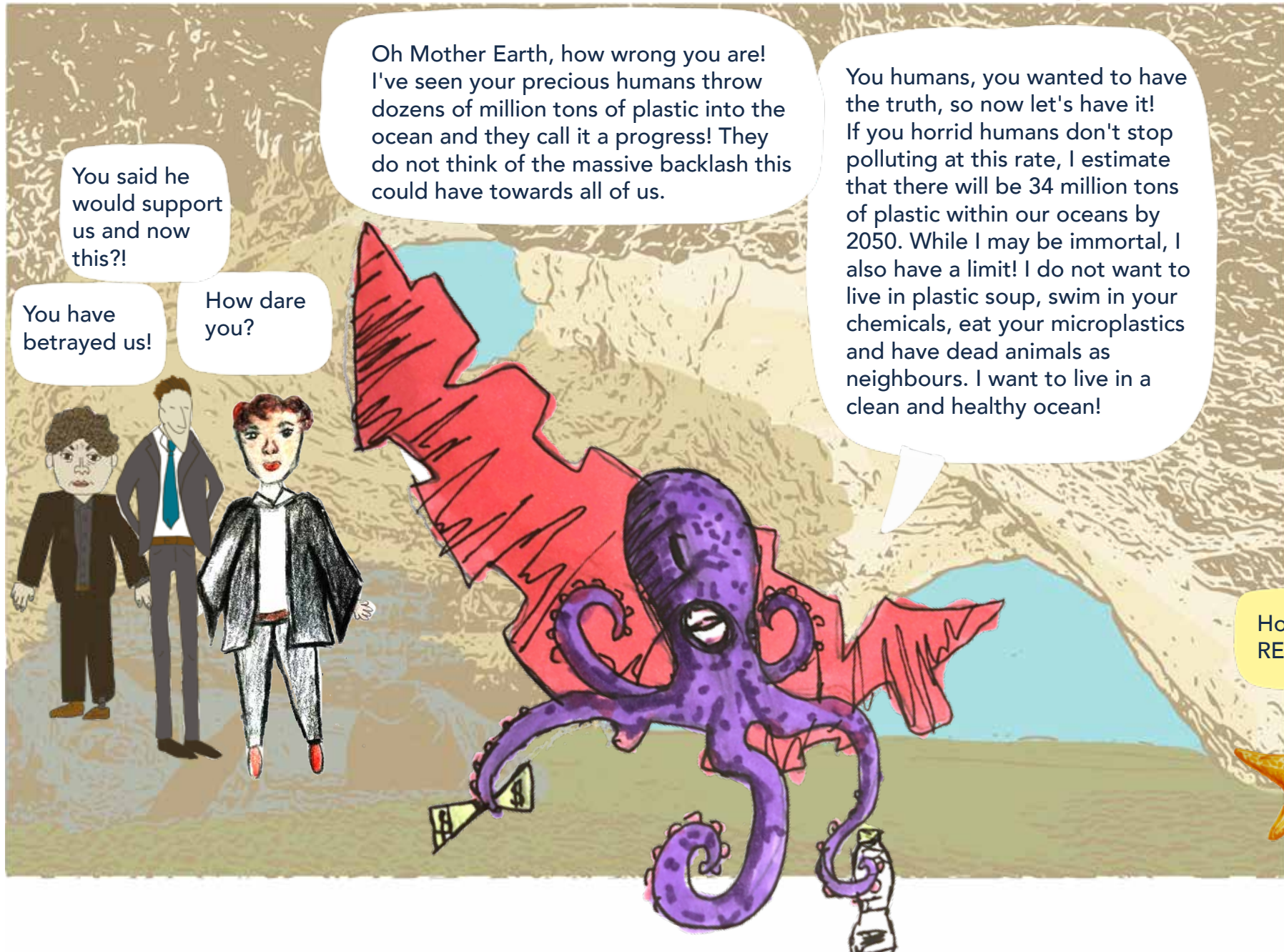
Darling!!! Oh, this  
is just beautiful!



Shocking!



And the Octopus continues ...



You said he would support us and now this?!

You have betrayed us!

How dare you?

Oh Mother Earth, how wrong you are! I've seen your precious humans throw dozens of million tons of plastic into the ocean and they call it a progress! They do not think of the massive backlash this could have towards all of us.

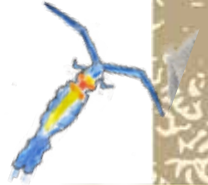
You humans, you wanted to have the truth, so now let's have it! If you horrid humans don't stop polluting at this rate, I estimate that there will be 34 million tons of plastic within our oceans by 2050. While I may be immortal, I also have a limit! I do not want to live in plastic soup, swim in your chemicals, eat your microplastics and have dead animals as neighbours. I want to live in a clean and healthy ocean!

How much?? REALLY???





After a careful deliberation, the judge has come to a conclusion ...



So, we will have all a healthy life!

Based on the evidence presented, in particular considering the surprise testimony of the octopus, the defendant has been found responsible for plastic and chemical pollution in our ocean and waters, dead zones in the seas and changes to the chemistry of our ocean and waters of Mother Earth that threaten livelihoods of all marine and water animals and ultimately the existence of humans themselves.

The court orders all humans to become aware of all the damage they have done to our ocean and waters. They need to clean it up and to stop any further damage. You must do that by the end of 2030!  
With that, the case is closed. You should all go and start working now!

Finally justice done to our cause!

But lobster, we all have to work together to make it!



# All this needs to be done by 2030!

- Each European should become a citizen of our ocean and seas
- Build digital twin of our ocean and waters

## FILLING THE KNOWLEDGE AND EMOTIONAL GAP

- Halt water eutrophication
- Zero plastic litter
- Zero spill of chemicals, nutrients and other pollution
- Regulate and reduce underwater noise

## ZERO POLLUTION

## REVAMPING GOVERNANCE

- Integrated and participatory EU system of ocean and water governance
- EU leadership for effective global ocean governance

## RESTORE OUR OCEAN AND WATERS

- Actively regenerate degraded habitats
- Protect EU waters
- Renaturalise rivers and waters

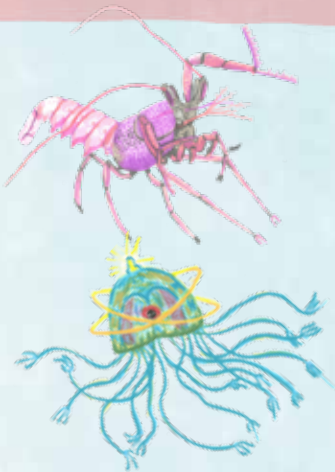
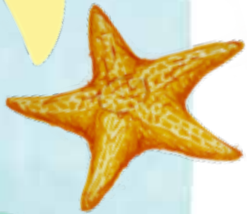
## REGENERATING MARINE AND FRESHWATER ECOSYSTEMS

## DECARBONISING OUR OCEAN, SEAS AND WATERS

- Climate-friendly waterborne transport
- Renewable low impact ocean energy
- Sustainable aquaculture
- Thriving blue biotech bringing innovations to all of us
- Sustainable blue tourism

How do we fix all these problems that we have created? Is it at all possible?

Yes, sure we can fix it! Here is what we need to do!





Your companions on this journey were ...



The starfish have neither blood nor brain yet they exhibit very complex behaviours. They can live up to 35 years. They can regrow damaged arms and regenerate after injuries.

The slipper lobster lives at the depth of around 50 m. He is native to the shores of Hawaii, hiding inside corals and rocks. His only defense against predators is hiding in a tight spot so that no one can catch him.



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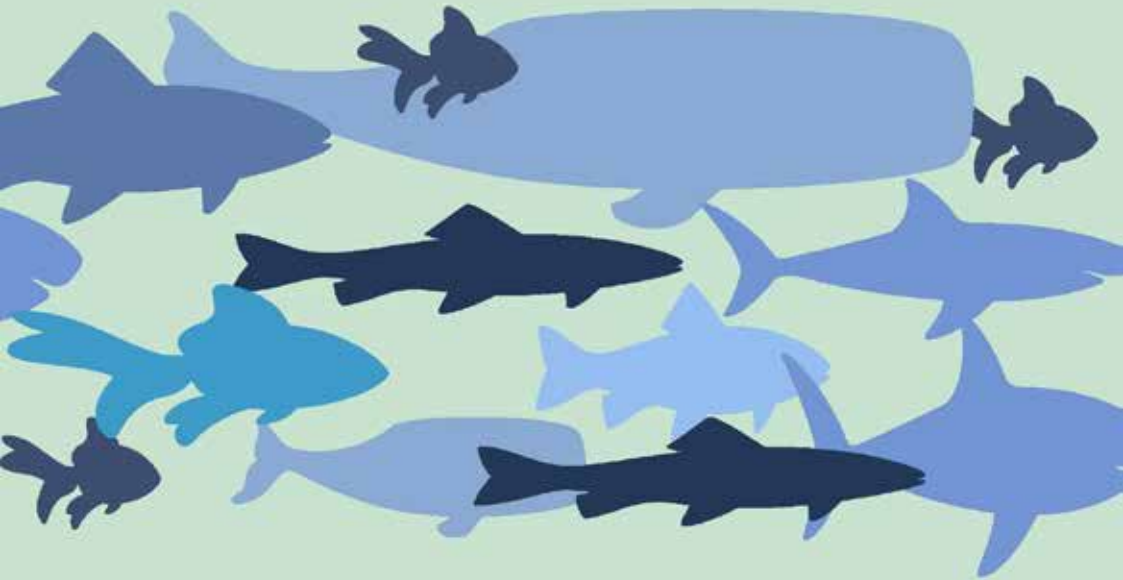
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# POLLUTION



# SOLUTION

## HERES WHAT YOU CAN DO!

In every house around the world, we are all guilty of using every day items that pollute! Here are a few items in your house that can be bought as organic or recycled products for good prices!

### clothes!



### Household items!



# Impressum



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All the other photos come from the Commission audio-visual service portal, from <https://audio-visual.ec.europa.eu/en/search?mediatype=PHOTO&page=1>



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