

This special issue
is dedicated to the
50th anniversary of
Black Sea



A C A S A

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Issue nr.3

Onboard Seashine vessel



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We are prepared for the expedition! We are planning to study the jellyfishes' invasion in the Black Sea. For a period of five days, we will examine the aquatic creatures' behavior, we will establish the causes of the invasion and we will try to find a solution to this major problem. The trip began! It's ten a.m. and we're leaving Constanta's harbour, following the south direction. I must go because my team is waiting for me. I promise I will come back with news!

The Seashine team

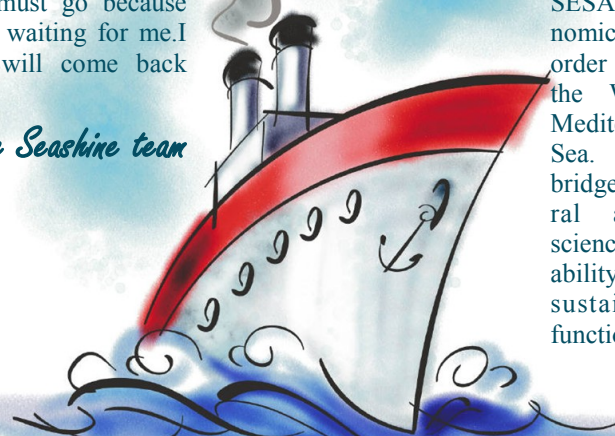
In the second page, you will find more information about our team's experiment: the jellyfishes' invasion. You can read about the plankton and look at the pictures taken in the oceanographic mission.



SESAME aims to evaluate and predict changes in the Mediterranean and Black Seas ecosystems and in their ability to provide key goods and services with high societal importance, such as tourism, fisheries, ecosystem biodiversity and climate change. The two seas are unique and evolve very rapidly, with large annual variability and abrupt fluctuations. For this reason, SESAME will merge economic and natural science in order to study the changes in the Western and Eastern Mediterranean and Black Sea. To this end, it will bridge the gap between natural and socio-economic sciences in order to assess the ability of the ecosystems to sustain these essential functions.

In the third page, we present to you an interview with the scientist Sorin Balan. Also, you will find our mates' opinions on "How the seashore will look in 50 years?".

In the fourth page, you will find details about our new equipment, the "menu of the day" and news about our daily life on Seashine.



EXPERIMENT DETAILS

8th of July, 2009, 12.00 –
The start of the SESAME
Romanian experiment

Dear all,

Today is another great day. We are onboard Seashine vessel. We have a calm Black Sea and a very good weather. All the researchers' teams are preparing for the experiment: the invasion of the jellyfishes. We are 2 technicians and 7 scientists. Our byologists, Florin Timofte and Mihaela Muresan, are investigating the congestion of jellyfishes, when the sea water is getting warmer. The

jellyfishes zooplankton have been growing because of the phytoplankton's accumulation and because of the decrease of the zooplankton, like mackerel and saurel, lessended after overfishing. Last year we



Luminita and Luana are trying to find a solution for the jellyfishes' invasion

observed that the warm water jellyfish, Rhizostoma pulmo, had an uncommon increase. In August, they flocked into Constanta's harbour. Overfishing, chemical pollution and global warming are what jellyfishes love. It's proved that in their first phase of evolution, polyp, some species of jellyfishes are ranging if they are put in warm water. To set measures to their "invasion", we'll "introduce" in the Black Sea some species from the Atlantic Ocean, like saurel, to downsize the



In the Indo-Pacific region the box jellyfish kill 100-200 people each year.

gelatinous populations. Our second Sesame expedition it's over. The experiment has succesfully ended, and we found out that the saurels can stop the jellyfishes to come to our harbour, but they aren't enough. Fishing is the biggest problem.

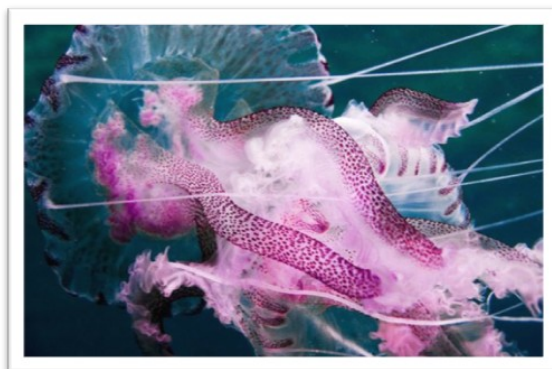
The Seashine team

Plankton are midwater dwellers unable to swim against currents. They don't need to, since their world is a small volume of water around them, a little drifting world inhabited by tiny plants - unicellular microalgae, microscopic "herbivorous"

and predatory animals - infusoria, amoebas, various crustaceans, invertebrate and fish larvae; their gametes and eggs; algal



THE "PHOTO OF THE DAY"



Our talented photographer, Silviu, succeeded in taking some gorgeous photos. The crew voted and this is the "photo of the day"!

INTERVIEW WITH SORIN BALAN

Reporter: What are the causes of the invasion of jellyfish in the Black Sea?

Sorin Balan: Exaggerated fishing, chemical pollution and global warming are the major causes of this invasion. The seas and the oceans are turning in a jellyfish soup.

R: When did you observed this invasion in the Black Sea?

S. B.: In May, my colleagues observed that big quantities of jellyfish in the high seas, 60 meters depth areas. There is jellyfish overpopulation.

R: Do you think is possible that this kind of invasion of jellyfish will reach the Romanian Black Sea shore?

S. B.: The jellyfish are growing mainly in the high seas, but sometimes they can

get to the shore, looking for food or brought by the tides. Probably some quantities will reach some bathing areas, but don't worry they are harmless for the people.

R: The lack of the food for jellyfish is a major cause for this invasion?

S. B.: The most frequent three species in the Black Sea (Aurelia aurita, Rhizostoma pulmo and Mnemiopsis leidyi) were fighting for the food and because of this, they could only survive from 8 to 10 years one after another.



Scientist Sorin Balan

R: What can we do to avoid this problem?

S.B.: The fishing should be restricted, the pollution resources from harbors should be limited and factors which are destroying the environments should be eliminated. Anyway these invasions

cannot be avoided in one place but everybody should be conscious and in this way the people in charge to take action and begin some programs to rehabilitate the environments and I'm not speaking here only about the seas or oceans.



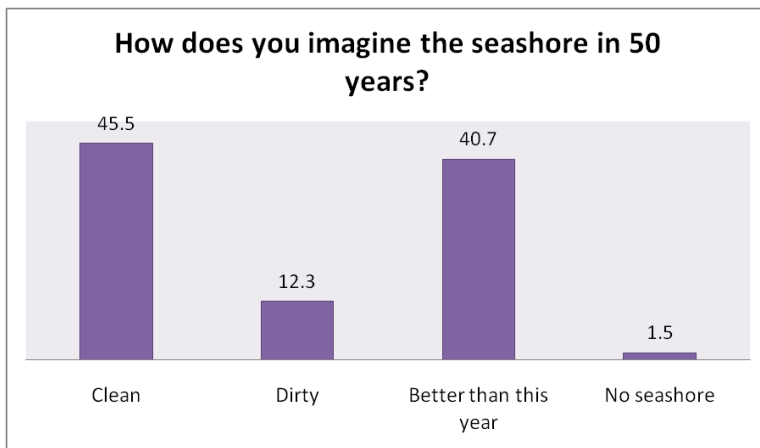
MESSAGES FROM YOU

Alexandra: I keep my fingers crossed for all the team! I hope you will succeed in finding a solution for the jellyfishes' invasion.

Daniel: Keep it that way! You're a great team!

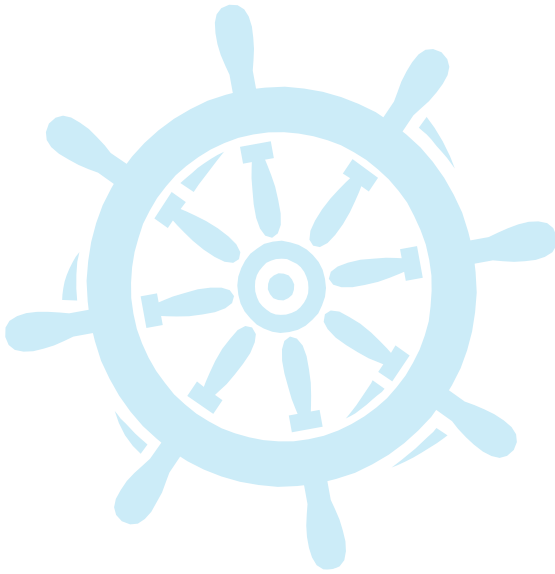
Ruxandra: I read your newspaper every month! You do a great job.

THE CLASS OPINION



It looks like most of our classmates are optimistic. They think that in 50 years the seashore will be clean (45.5%) and better than this year (40.7%). Some of them are imagining that the seashore will be dirty (12.3%) and some others are thinking that it will be no seashore because of the climate changes.

EXPERIMENTAL EQUIPATION



Using the funds allocated to the research, we have bought a new scientific equipment. First, we bought a new model of microscope, a performant one, with exceptional optical performance, a 3000x zoom range. We also bought a “special” camera, designed only for the microscope. With them, we can obtain clear video records with the creatures that we are studying.



The microscope



The camera

THE MENU OF THE DAY

Our technical engineer, Andrei, received tuesday a challenge from my teammates. He accepted the challenge and Wednesday he cooked for us. Yummy! It was so good! Even now I remem-



THE WEATHER

Today was one of the most beautiful and hot days. At 18 o'clock a short summer rain has begun, leaving behind a beautiful rainbow. The good weather helped us to finish the experiment.

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- <http://www.hallo.ro/>
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THE SEASHINE TEAM

Name and address of the class: 9AD3, “Ovidius” Highschool Constanta, Romania, 2, Basarabi street, 900710

Age—15-16 years old

Number of students: 12

Coordinating teacher:

Carmen Bucovalea