



The National Field
Research Centre for
Environmental Conservation
About innovative Environmental Research



Sultanate of Oman
Diwan of Royal Court

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Issue 40



For the first time in the Sultanate

**Omani researchers discover
two species of black widow spider**



The Beginning of Candidature for the Sultan Qaboos Award for Sustainable Development of Environment

The Central Committee for the follow-up and evaluation of the Sultan Qaboos Award for Sustainable Development in school environment has announced the opening of the candidacy for students to apply for educational projects participating in the award on its first session (2018 / 2019) Dr. Mohammed Bin Khalfan Al Sheidi, Advisor to the Minister of Education and Chairman of the Central Committee for Monitoring and Evaluation of the Award, said that when the preparatory procedures are completed, the applications will be received through the electronic system of the Award (sustainable) starting from today, the Sunday. He explained that the system (sustainable) serves as a platform for the joint operations for all of the awards process at the local and central levels. The system is designed to complete all the work of the award electronically, starting with the schools registering their new projects

and manage them through the system, and submit applications for candidacy to participate in the award during the period for application for candidacy, through the local assessment teams and the Central Evaluation Team to evaluate the educational projects nominated for the award, until the announcement of the evaluation results at each award session. "The system's icon will be activated automatically through the educational portal of the ministry, so that schools administrators can access the system through their accounts in the portal and register and run their school projects through the system, according to the data and procedures described in the Schools Manual for the Use of Sustainable System, which has been provided to the coordinators of the award in the governorates, noting that the period of candidacy for the award will extend until the end of March this year" Dr. Al Sheidi added.



"Oman Tistahal" Campaign Welcomed at Albraimi

Oman Environment Services Holding Co. "Be'ah" has organized an awareness campaign in its third station at the public Park of Albraimi Governorate. This campaign comes within the framework of awareness campaigns in which the Omani Environment Services Holding Company (Be'ah) is targeting the tourist areas under the title « Oman Tistahal - Oman is entitled» to apply the proper waste disposal practices towards achieving a sustainable bright future and adopting purposeful awareness plans to reduce and stop waste production. The campaign is planned to include all

Tourist Attractions in the Sultanate. The campaign aims at spreading awareness among the community members to urge them to stop the wrong practices by some citizens while getting rid of waste. Such practices have direct and indirect negative effects. The campaign also aims at spreading the culture of knowing the types of waste and determining which types of waste can be reused to become valuable materials instead of being disposed of at the engineering dump or other sites and thus benefit the citizen himself and the society in general as a result of reducing the amount of waste.



point of view

The Culture of Waste separation

Dr. Dawood Sulaiman Al Balushi
Editor-in-Chief

The culture of waste separation (plastic, food, cardboard, medical, electronic) is a culture that is somewhat absent within Omani society. This may be due to the fact that government authorities did not adopt the concept from the outset. They adopted garbage collection on large garbage containers that were distributed in residential neighborhoods, so that the general public would throw all the garbage together in those containers. These materials are then collected and disposed of in the known ways according to the healthy and environmentally sound principles

The latest awareness campaign launched by Oman Environmental Service Holding Company S.A.O.C (Be'ah) on the subject of waste separation is very important in its content for health, environment and awareness. It indicates that the separation of waste is urgent and necessary to protect health and environmental for the humans and the environment surrounding it, as well as the economic and investment returns that can result from the separation processes. However, the awareness effort remains deficient if it is not compatible with the practical application by providing separated containers in all residential districts in the Sultanate. Each container to be designated for a specific type of waste, in addition to the cooperation of other government agencies and private sector institutions specialized in this field to implement the same method.

There are very successful global experiences in waste separation, intersecting work between government institutions, the private sector and individuals. Therefore, the subject of separating the waste is part of the daily behavior of the community. The individual starts the process of separating the waste on his own because he is accustomed to it from the beginning and realized the importance of this process for the health, environment and the investment in such separated waste that benefit him, the community and the environment around him.

It is not easy to instill and solidify the concept of waste separation culture in Omani society, but it is not impossible. The Possibilities and the essence of culture exist. We only have to intensify awareness campaigns to begin practical application.

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More Than 120 Experts, Specialists and Academics Share Experiences

The National Centre Participates in the 20th Edition of Sharjah International Forum for the Conservation of Biodiversity

The National Field Research Centre for Environmental Conservation (NFRCEC) participated in the 20th edition of Sharjah International Forum for the Conservation of Biodiversity which was organized by the Environment and Natural Reserves Authority in the Emirate of Sharjah, UAE. The forum was attended by more than 120 experts, specialists, academics and researchers from around the world. The participants presented their experiences and ideas in the forum, which constitutes a meeting point for experts to discuss various proposals, projects and initiatives on biodiversity conservation. The researchers of the National Centre (NFRCEC) participated by presenting the most important field research conducted by the Centre to establish a database for biodiversity in the Sultanate. The Centre also showcased a number of publications issued by the Centre to educate the public on the most important contemporary environmental issues, specially the monthly Lynx bulletin.



Key Topics

The Forum discussed four main themes: the transfer of animal sites in the context of conservation of biodiversity, major biodiversity areas, veterinary and biodiversity conservation, and drones usage in biodiversity field.

Drones

Experts, speakers and participants in the 20th edition of the Sharjah Forum for the Conservation of Biodiversity discussed on Tuesday the importance and necessity of using unmanned aircraft to monitor and follow up species in protected areas. This topic included practical and applied workshops, in-depth discussions about downloading images, how to process them, important results of such use, and a general introduction to the technical side of the topic.

The participants also discuss how to prepare and plan, and the importance of unmanned drones for protected area management, where unmanned aircraft are used to monitor and control species in protected areas. The aircraft supports the efforts in data collection to determine protection priorities and actions to be taken within nature and wildlife preservation programs.

To take advantage of the latest technologies for studying and control biodiversity, the drones will take pictures of areas that are difficult to reach while checking the numbers of birds and species in general, without having to approach them. Experts will also benefit from the accurate images these aircrafts will provide on birds and their breeding sites. It is an important

Animals Moving Operations

The Forum discussed the use of the guidelines of the International Union for Conservation of Nature «IUCN» to review the moving of animal to preserve diversity in the region, taking into account other aspects such as preparing captive animals for release, evaluating success, monitoring the post-launch process and discussing current issues including surplus management and rehabilitation Animal lesions and animal moving in response to development.

Criteria for Identifying Areas of Biodiversity

The Forum also reviewed ways to use the IUCN Global Standard for the Identification of Major Biodiversity Areas, to continue the work begun in 2018 through the application of definitions, criteria and demarcation procedures for the major biodiversity areas of a new set of sites and species, including fresh water ecosystems.

The Role of Veterinary Medicine

The forum discussed the role of veterinary medicine in the conservation of biodiversity. It is a broad topic that deals not only with pathogenic organisms in animals, but also takes into account the impact of living organisms on their environment and vice versa. More discussion will be provided on disease surveillance and tumors as well as the best management practices related to the moving process with a focus on animal well-being.



technology and an effective means of collecting data in terms of cost and time.

Drones also help to monitor and follow up on all animals and plant coverings. They are the watchful eye of the human being, protecting and conserving the environment, especially as its use in the environmental field has spread extensively, where they can collect huge amounts of information in a short time.

They take pictures in live colors, measure the levels of leaky radiation that humans cannot reach, measure levels of sulfur dioxide above volcanoes, and other environmental tasks, including the protection of endangered animals, monitoring of and biological diversity and species habitat.

The Forum Objectives

The main objective of the forum is to contribute to the development and formulation of protection strategies and action plans relevant to endangered species in the Arab region. The Forum depends on the IUCN's Conservation Assessment and Management Plan developed by a group dedicated to the protection and propagation of animals. The forum is an important meeting and interaction point for experts and specialist from all over the world to exchange experiences, information and knowledge that help them to learn about the nature of natural life in the UAE specially and the Arabian Peninsula in general, because it has a great biodiversity, which helps the Forum to organize various plans for the protection of wealth and biodiversity in the Arabian Peninsula.

Calls for
in-depth
studies
on this
faction of
spiders

For the first time in the Sultanate

Omani researchers two species of black

Prepared by Reasercher:
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Photo:
Ali Al-Raisi



2016 © Ali A. Al-Raesi
Latrodectus sp.
Dhofar, Oman
Collected by Said Al-Shanfari



Omani researchers have discovered two species of the black widow known as *Latrodectus* belonging to the Theridiidae family for the first time in the Sultanate of Oman. This study, in which these two species were identified as previously studied in the Arabian Peninsula which were carried out by researchers B-Conflack and van Harten in 2002 recorded six species in both Yemen, Saudi Arabia and Kuwait and did not record any of the species in Oman, and compared the specifications

of the reproductive and reproductive types of species according to descriptions of the species found in some countries of the Arabian Peninsula and Socotra. This species is characterized by its differentiated name between acute and medium (depending on the type of spider under this species) of mammals because it contains toxic proteins known as Latrotoxins, a neurotoxin that causes symptoms of Latrodectism. Rarely, death is associated with a certain type of black widow.

discover widow spider



Results

The study revealed two species of black widow spider in Oman:

(*Latrodectus cinctus*), which is widespread in the northern regions of the Sultanate (samples were collected and observed in the governorates of Muscat, the interior, the north and south of the east and the north and south of Batinah and Buraimi and the phenomenon was not possible to do the survey in Musandam) Is different from the other species of the absence of the hourglass hour in the lower abdomen, but the

■ ■
The study in the definition of these two types was based on a study by the researchers B. Conflack and Van Harten in 2002

■ ■
The study showed the presence of the first type (*Latrodectus cinctus*) in many northern governorates of the Sultanate

■ ■
The study recorded a presence of type 2 (*Latrodectus geometricus* C.L. Koch) in Dhofar Governorate only

presence of the red band in the middle of the abdomen from the upper side, and as the toxicity is not studied, but some reports that it is highly toxic, and was observed as a kind not aggressive.

2. *Latrodectus geometricus*: This type of record was recorded in the Kingdom of Saudi Arabia and the Republic of Yemen. The present study proved its presence in the southern Sultanate of Oman in Dhofar Governorate only. It was not observed in any of the northern governorates of the Sultanate. The toxic amount of this species is 57 µm and the LD 50 of the mouse is 233 µm. Thus, the sting symptoms of this type are local to the place of sting and the surrounding area, which is not a type. Aggressive.

Phenotypic variation

There is also the phenomenon of sexual differentiation of the species (Sexual dimorphism), which falls under the genus of the black widow *Latrodectus*, where the male differs from the female, small size, and color varies according to stages of age development, and the species to which it belongs, often characterized by the characteristic black color and red band in the upper or ventral side of her abdomen. The presence or disappearance of red band in the abdomen, depending on the species, which expresses a warning signal to her predators. It is rare to notice the male and the female is often noticed that the nets of her house are woven in random and tangled threads in diameter ranging from 10 to 30 cm, and the texture is thicker compared to the fabric of other spiders living on the roofs of houses (*Pholcidae*).

Homes

The black widow spider builds its houses next to the cracks or holes in the corners of the walls, sidewalks, the walls of the outer houses, farms and protected agricultural houses where the cracks or holes take shelter in case of danger. Their homes are often in contact with or close to the earth, rarely seen at a height of half a meter from the ground. The black widow spider is a non-aggressive spider. The female rarely leaves her home except to move from one place to another. Therefore, the spider does not attack the victim only after touching the fabric or enter the scope of her home.



The National Centre Participates in the Tourist Exhibition at the Royal Armed Forces Museum



By: **Fatimah Al Zidjaliah**

The National Field Research Centre for Environmental Conservation (NFRCEC) participated in the tourism exhibition organized by the Ministry of Tourism in the Museum of the Sultan Armed Forces, which witnessed a wide participation of governmental, private and civil society institutions, as well as many small and medium enterprises.

The exhibition which was entitled (Discover the beauty of the Omani heritage and the collections of the Museum of the Sultan's Armed Forces) included the traditional Omani genres, the handicraft and pottery works, and Artifacts that deal with some legacies and vocabulary of the ancient Omani heritage. The exhibition aimed to enrich the awareness in society and to identify and promote

the collections of the Museum of the Sultan's Armed Forces through the participation of productive families and some craftsmen and other initiatives of young people in the field of electronic applications industry which aimed at promoting the Sultanate tourism. The exhibition was sponsored by Mr. Adel bin Almurdas Al Busaidi, the advisor of the Ministry of Tourism and attended by the Staff Officer, Brigadier, Saleh bin Ahmed Al-Hinai, Head of the Military Protocol and Public Relations at the Chief of Staff Presidency of the Sultan's Armed Forces. The Centre showcased some of the field tools used in field work and research projects such as camera traps, animal traps, wireless communication device used for communication and emergency cases and GPS device. The exhibition was well received by visitors and students of education institutions in the Sultanate.

Qatar

Celebrates its Environmental Day under the Theme «Our Environment Our Future»

The State of Qatar, represented by the Ministry of Municipality and Environment, celebrated the the Qatari Environment Day in 2019, which lasted for four days under the theme «Our Environment Our Future.» The educational and awareness events of the Qatari Environment Day were very popular among students and families of citizens and residents who interacted with them in morning and evening periods. The aim of these events was to provide everyone with knowledge related to the preservation of the environment and its natural resources. The Ministry stressed that these awareness-raising activities and awareness campaigns will continue and will not be limited to specific events, in light of the importance of protecting and preserving the environment for present and future generations.

Bahrain

A Scientific Study: Bahrain Air is Pure and Safe

An environmental expert at the University of Bahrain conducted a study which revealed that the air inhaled in Bahrain is pure and safe and there is no fear of the presence of carcinogenic or other substances that may cause serious and chronic diseases. The study indicated that air in Bahrain contains a small percentage of aluminum within the range of 1% and aluminum is not classified as hazardous substances as it is also not considered a heavy metal, and that the most effect that it can cause is inflammation of the teeth and sinus diseases only. The study stressed that the dust storms in Bahrain are not a cause for concern, and do not contain contaminants. Air pollution is the result of cars exhaust or living near the factories, and such hazards are always present.

Kuwait

Kuwait Inaugurates Renewable Energy Project

The first phase of the Shaqaya renewable energy project, with a capacity of 70 megawatts, was inaugurated in Kuwait. Kuwaiti Minister of Oil, Electricity and Water, Dr. Khalid Al-Fadhel, said that Kuwait plans to develop renewable energy applications to reach 15% of the total energy used by 2030, including the construction of the Shaqaya renewable energy complex. The minister added that there are other projects for Kuwait which will contribute to achieve the target of energy production from renewable sources, including (Aldabdaba) project, with a solar capacity of 1500 MW, noting that this project will provide the oil sector 15% of its needs.

UAE

UAE Launches its National Turtle Preservation Plan

The UAE's Ministry of Climate Change and Environment has launched the National Marine Turtle Conservation Plan to protect sea turtles and ensure their sustainability in the waters of the UAE. The Director of Biodiversity Department at the Ministry, Hiba Al Shehhi, pointed out that the UAE has made significant efforts to preserve biodiversity in general and sea turtles in

particular, efforts such as the declaration of 15 marine reserves, which account for more than 12 per cent of the total area of exclusive economic water, where turtles use to make nesting and lay eggs. The newly launched plan aims to reduce the direct and indirect causes of marine turtle mortality and improve understanding of its movement and behavior in the waters of the UAE through research.

Saudi Arabia

Saudi Arabia Plans to Invest 80 Billion Dollars in Renewable Energy

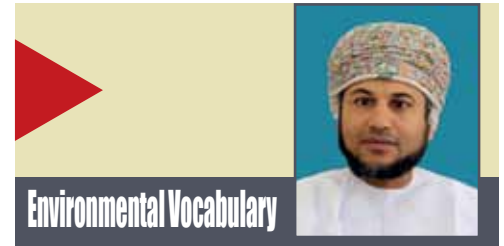
The King Abdullah City for Atomic and Renewable Energy in the Kingdom of Saudi Arabia, has presented 9 projects in the renewable energy sector that the city wishes to implement in partnership with the private sector as part of its efforts to increase local content in the field of localization of renewable energy technology in Saudi Arabia, in line with the objectives of Vision 2030. Saudi Arabia's renewable

energy plans will boost resettlement opportunities and global partnerships with a number of developed countries, such as Russia, China, European countries and the United States. The ownership of renewable energy technologies and their ease of transfer is the key to maximizing this sector. The investment volume will range from 150 billion riyals (\$ 40 billion) to 300 billion riyals (\$ 80 billion).



First Eco-Friendly Cruise Ship

The ship Rundald Amundsen which is expected to start its first appearance in the spring, has successfully completed its first test this week. The exploratory vessel using environmentally friendly technology carried out its first test in the waters of the Strait along the western coast of Norway. The first expedition will be along the Norwegian coast towards Svalbard, Greenland, and the Arctic. The new ship, which will be in service this spring, is characterized by its ice-resistant structure and hybrid energy.



Environmental Vocabulary

Smooth Arrow

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With the beginning of every summer, the sea comes out with its hidden treasures and wonders, and gives us from its coffers and generosity. Our tables are full of its products in different shapes, colours and tastes. Delicious in taste, nourishing to the body, and cure from disease. Summer is a season of gifts, where fishes are abundant, and fishnets are full. Fill up our tables with many kinds, some of which are of great value in our hearts, are very popular and not devoid of any house.

If nothing rather than the human as its hunter, this is enough compare to the rest of the traps. It is also a delicious meal in the jaws of giant sharks and whales. With their sharp decline, however, they are still in the top list of fishes that the fisherman targeting in his fishing net, and the best consumer selection for his table. With its low numbers worldwide, it has maintained its ecological balance to some extent with its great ability of survival. It is adapting to temperature fluctuations because of its unique network of small arteries and veins near the muscles and classified as warm blood.

Its silver belly blends with the blue of the ocean, helping it to hide perfectly. Its large size that reaches to six meters and weighing up to 700 kilograms and its ability to change its chest fins contributed to being a very fast fish in swimming with a speed of 62 miles per hour either on the surface or at depths of up to 900 meters

The female puts about 30 million eggs, only two million eggs remain until puberty, while the rest of the eggs go to the table of other marine creatures. This fish lives up to 30 years if safe from the jaws. Its flesh contains oils rich in omega-3 that has a great role in the regulation of the heartbeat and the presence of other materials with significant medical benefits. There have been many reasons came together cause the rise in its global demand. For this reason, many huge ships exist in the middle of the oceans with large factories bulldozing big quantities of this fish and leaving them canned to the world markets. That is why their numbers have decreased and are still if fishing operations are not controlled and unregulated. There are major initiatives in this regard, the 2nd of May each year allocated to the celebration of World Tuna Day. The Sultanate participates in the world celebration of Tuna Day because the Sultanate has a big wealth of fishes belonging to the tuna family. This treasure deserves all of us to make better use of it and to rationalize its use. The tuna fish gives big income and commercial gifts, with great nutritional benefits. It is a national wealth for us and for the future of our generations.

A Study Warns of the Disappearance of Clouds

A recent study warned that the rising greenhouse gases in the Earth's atmosphere could eventually lead to an exit of low-level clouds from the sky. The results found that high concentrations of carbon dioxide in the atmosphere cause the dissolution of marine surface clouds and eventually conceal them, which may make global warming worse.

Without these clouds, the Earth's surface could be exposed to even brighter levels of sunlight, which could lead to global warming above 14 Fahrenheit degrees. This horrific scenario can help explain what happened during the peak temperature rise, about 56 million years ago, during the so-called «The Paleocene-Eocene Thermal Maximum (PETM)», when the Earth experienced a mysterious rise in carbon dioxide, which caused accumulation of

greenhouse gases in the atmosphere in large quantities over thousands of years.

As a result of high concentrations of carbon dioxide in the atmosphere, global temperatures rose from 5 to 8 degrees Celsius, bringing the rate to 23 degrees Celsius. The researchers say the findings provide an alarming view of what could happen if global carbon emissions are not reduced. According to a new study led by researchers at the California Institute of Technology, carbon dioxide concentrations are higher than 1200 ppm, and that can push the Earth to a critical point where the sea clouds become unstable. When these clouds disappear, surface temperatures will increase dramatically.

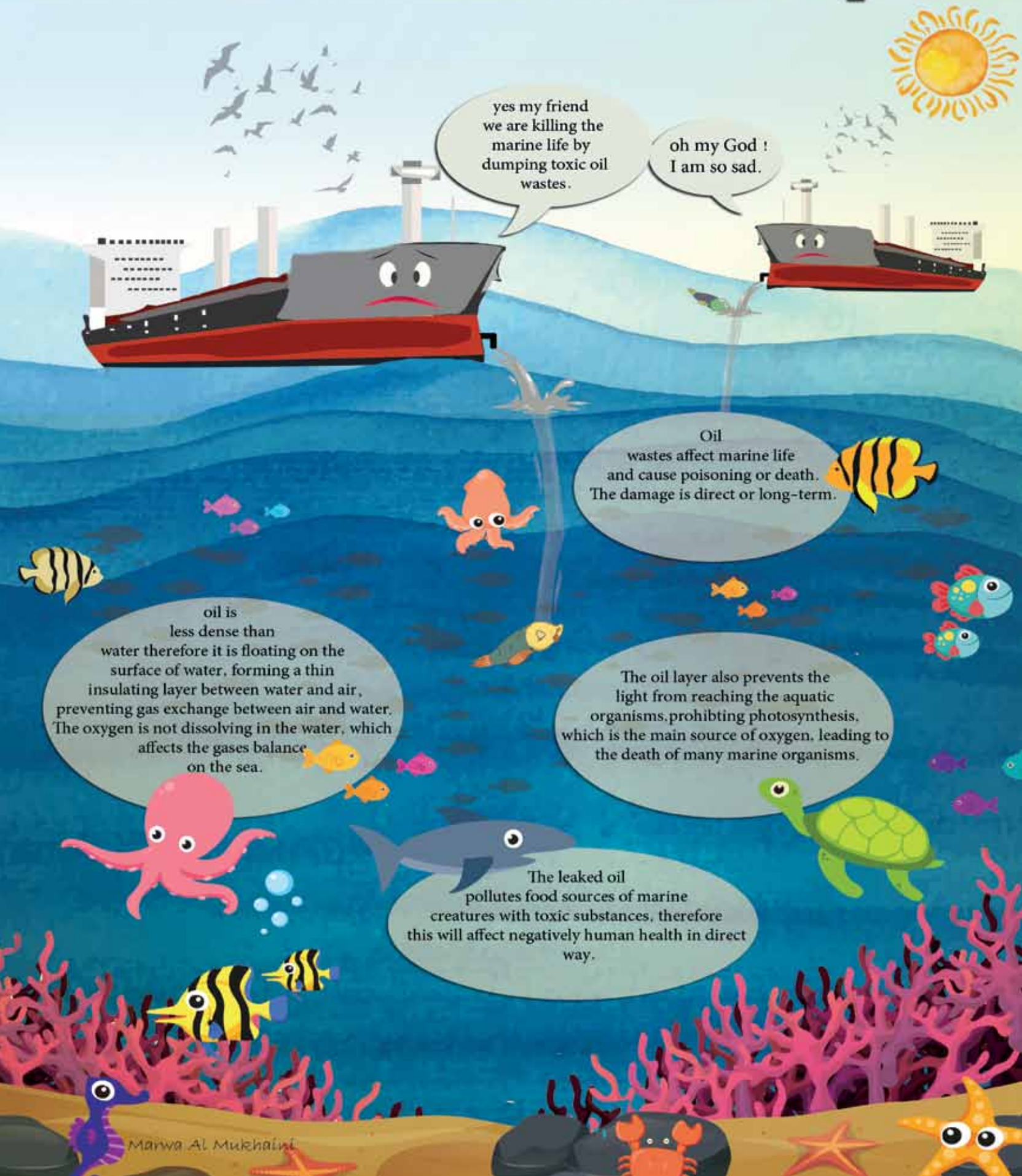
Low-level cloud layers cover about one-fifth of the subtropical ocean, shading the surface of the earth from sunlight by reflecting it to space.

First Recorded Case of Extinction Due to Climate Change

The Australian government has said that small brown mice living on an island in northern Australia are the first mammals in the world to become extinct because of the climate change suffered by the inhabitants of the Earth, according to a CNN report. These mice lived at their which was the small island of Bramble Cay, located between Queensland district and Papua New Guinea. According to the report, none of the environmental experts and scientists have seen this type of rat for almost 10 years, to show later that this species of mammals extinct despite efforts to protect its existence.



Oil wastes from ships



yes my friend
we are killing the
marine life by
dumping toxic oil
wastes.

oh my God !
I am so sad.

Oil
wastes affect marine life
and cause poisoning or death.
The damage is direct or long-term.

oil is
less dense than
water therefore it is floating on the
surface of water, forming a thin
insulating layer between water and air,
preventing gas exchange between air and water.
The oxygen is not dissolving in the water, which
affects the gases balance
on the sea.

The oil layer also prevents the
light from reaching the aquatic
organisms, prohibiting photosynthesis,
which is the main source of oxygen,
leading to the death of many marine organisms.

The leaked oil
pollutes food sources of marine
creatures with toxic substances, therefore
this will affect negatively human health in direct
way.