



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



Sultanate of Oman  
Diwan of Royal Court

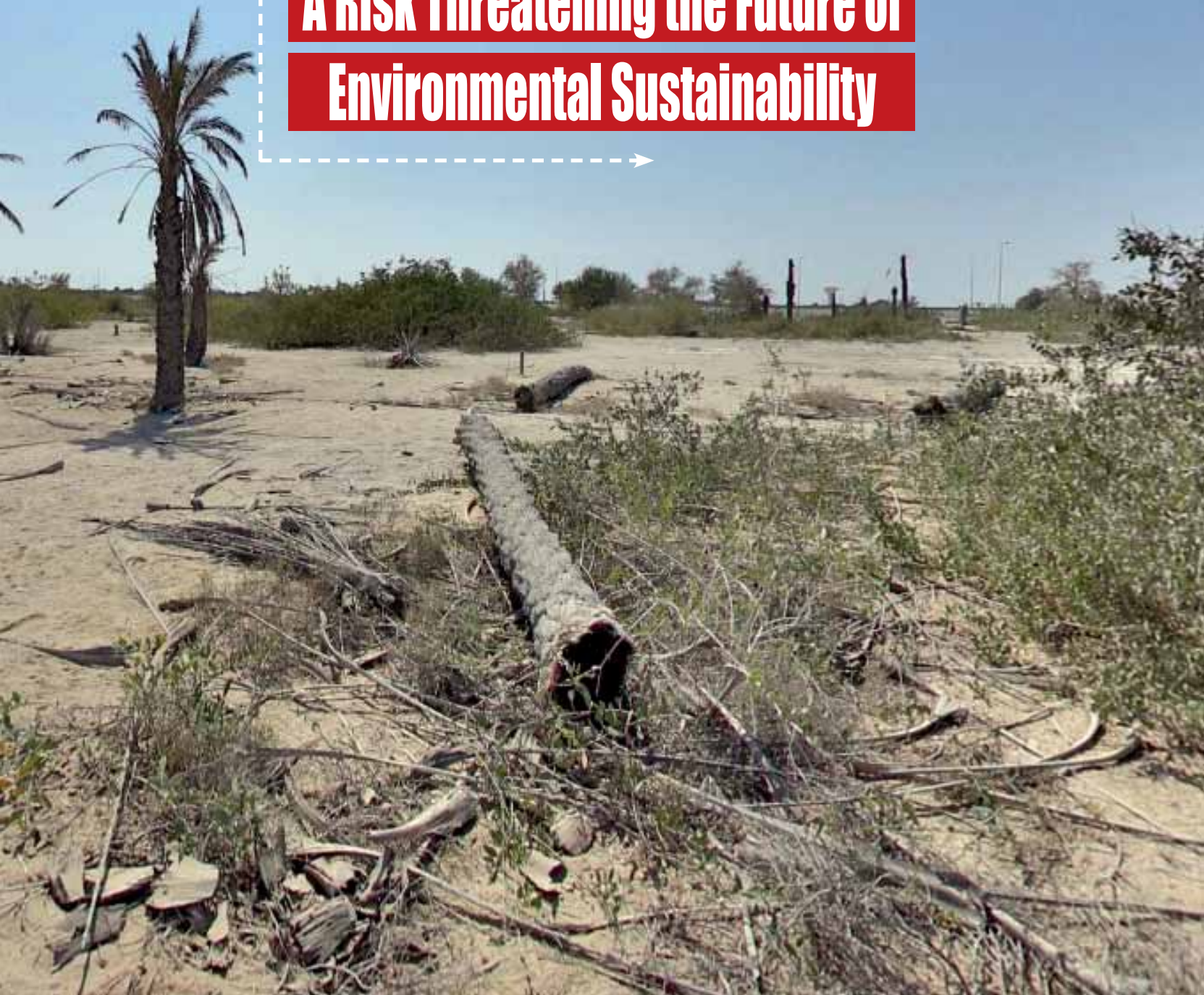
March 2021 - Sha'ban 1442

Environmental monthly newsletter issued by the National Field Research Centre for Environmental Conservation

Issue 64

# Salinization of Freshwater in Al Batinah Coast

**A Risk Threatening the Future of  
Environmental Sustainability**



## The Sultanate Celebrates the World Wildlife Day

The Sultanate participated with the countries of the world in celebrating the World Wildlife Day, which falls on the third of March of each year. This year's celebration is under the slogan "Forests and Livelihoods ... Sustainability for People and Planets", which aims to raise environmental awareness about wild animals and plants in the world, to ensure that international trade does not threaten the survival of these species.

World Wildlife Day is a global event that highlights the links between our planet's forests, the critical lands and the preservation of the livelihoods on which we directly depend, with particular attention to the traditional knowledge of the communities that have managed forest ecosystems and wildlife for centuries. This is in line with the United Nations' Sustainable Development Goals, and its broad commitments to alleviate poverty,

ensure the sustainable use of resources and preserve life on Earth.

The Sultanate is keen to organize events and activities in the field of protecting wild and plant life, highlighting the threats and risks facing the components of wildlife in general, and publicizing the efforts made to combat the trafficking of endangered species and protecting them from dangers, raising awareness of the importance of preserving them, and building national cadres capable of implementing and activating wildlife programs, protecting it from extinction and illegal trafficking at the national level, as well as continuing to make efforts to protect wildlife, taking care of the components of the environment, conserve its resources, and provide suitable environments for the growth and reproduction of the various wildlife with which the Omani environment is rich.



## The Sultanate Participates in the Meetings of the Fifth Session of the United Nations Environment Assembly

The Sultanate participated in the meetings of the Fifth Session of the United Nations Environment Assembly with an official delegation headed by His Excellency Saleh bin Sulaiman bin Ahmed Al Harithi, the Sultanate's ambassador to the Republic of Kenya and the Sultanate's permanent representative to the United Nations Environment Program. Meetings were held via teleconference with the participation of the ministers and the heads of agencies concerned with the environment or their representatives from the member States of the United Nations Organization, as well as the participation of regional and international organizations, civil society organizations and youth associations concerned with the environment, in the presence of more than 155 countries and more than 500 participants. His Excellency Saleh Al-Harathi chaired the consultative meetings of the Asia-Pacific Group and the Arab Group, in addition to attending

the leaders' dialogue platforms, which expressed the concerns of the world countries and their interests in the policies and strategies related to the environment and the need to do more for economic recovery after recovering from the Corona pandemic (Covid-19). His Excellency the Sultanate's ambassador to the Republic of Kenya and the permanent representative of the Sultanate to the United Nations Environment Program delivered the Sultanate's speech at the high-level session. In that session, he highlighted the efforts and achievements of the Sultanate in various environmental fields and achieving the 2030 Sustainable Development Goals, as well as the importance of working to recover from the Covid-19 pandemic, wishing that the planet, with its lands, mountains, plains, rivers, seas and oceans, safer, more peaceful, with greener and sustainable environment for the current and future generations.



point of view

## Thanks Uncle Aqeel Ba-Omer

Dr. Dawood Sulaiman Al Balushi  
Editor-in-Chief

The photo that has been taken by the Omani photographer Abdul Rahman bin Ali Al Hinai of the elderly uncle, Aqeel Ba Omar on the beaches of the Wilayat of Salalah in the Governorate of Dhofar, while he was collecting, before sunrise, heaps of trash left by others on the beach highlights an example that must be emulated. The example of love towards environment, the homeland and the readiness to defend them. This image represents an iconic man, an old man that his back bowed for under the weight of the years, but still he refuses the behavior of leaving the waste on the beaches for the winds and waves to scatter them and also refuses the acts that affect the marine environment and distort the general scene. That is why he decided to collect such waste by himself and put it in the place designated for it.

The careless behavior that has recently appeared on various beaches of the Sultanate, the careless behavior of throwing piles of garbage on the ground after spending quality time with family and friends, is one of the most negative and dangerous phenomena that harms the Omani environment. This phenomenon has begun to cause great concern to the responsible authorities for cleanliness and preservation of the environment. It is important to reduce such behavior by increasing environmental awareness among various groups of society about the importance of preserving the beaches and marine ecosystems from pollution, degradation and extinction.

When that photo was published on social media, it won the admiration of many, and everyone emphasized the spread of the phenomenon of throwing garbage on various beaches of the Sultanate. This is a negative phenomenon that must be studied, There must be an effort to limit it. Some observers also stressed the importance of applying strict legal penalties in order to stop damaging the beaches' environment through piles of waste. We must intensify awareness campaigns, and exert efforts to increase garbage containers along the beaches so that it should not be an excuse for lazy people to throw waste on the beaches.

Finally, we hope that the conscience and sense of the uncle Aqeel Ba Omar and his intense love for the Omani environment, may awaken in us a sense of responsibility so that the conscience of an ideal person such as uncle Aqeel Ba Omar may grow in us, and that uncle Aqil Ba Omar will be a model for us and an example to be emulated. Thank you, uncle Aqeel Ba Omar. Thank you for your great heart, and we ask God to prolong your life and keep you healthy.

### Editor

D. Dawood bin Sulaiman Al Balushi

### Technical Review

Khalifa bin Badawi Al-Higgi

### Editorial Board

Issa Al-Samsami  
Marwa Al-Mukhainia  
Hana Al-Hinai  
Mohamed Al-Mqaimi

Zakaria Al-Mawali  
Abdullah Al-Sabei  
Mohamed Al-Haddabi

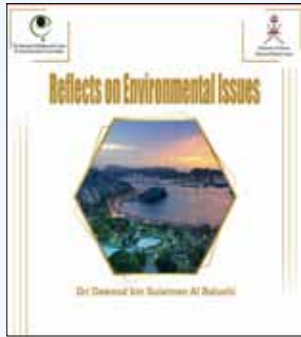


The National Field Research Centre for Environmental Conservation (NFRCEC) at the Diwan of Royal Court, recently issued a number of scientific, awareness and educational books in the field of preserving the environment and preserving its natural resources. These books came within the scientific and awareness plans of the centre in enriching the Omani library with specialized knowledge in the environmental field, as well as a contribution to enhancing informational knowledge of ecosystems and the importance of preserving them and working on methods to develop them and protect them from degradation and extinction. These books have been issued in both Arabic and English, and printed in environmentally friendly papers.



# The National Centre (NFRCEC) Issues a Number of Scientific and Awareness Books

## Reflects on Environmental Issues



Among the most important of these books is the book that is entitled: (Reflects on Environmental Issues) by Dr. Dawood Bin Sulaiman Al Balushi. In this book, the author discusses a group of diverse environmental issues and topics, both local and global, using a number of writing styles such as suspense, literary creativity, fictional style, and direct method in dealing with his issues. The book was divided into six main chapters. In each chapter, a group of different issues and topics were discussed. In the first chapter, the sublime concern of the late Sultan Qaboos bin Said - may God bless him - in the Omani and global environment.

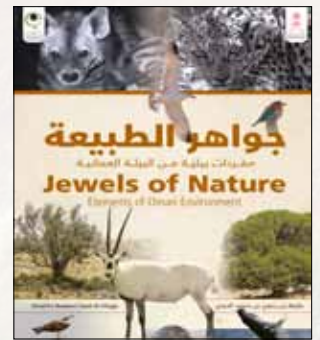
The second chapter focused on issues of concern for the local and global environment, while the third chapter dealt with issues of concern for wild and marine life. The fourth chapter is devoted to topics and issues of the environmental awareness for individuals or institutions. The fifth chapter deals with a number of environmental issues, such as issues of sustainable development, green economy, ecotourism, and issues of pollution and waste of all kinds, while the sixth chapter is devoted to discussing climate issues, such as the ozone hole, climate change, air pollution and renewable energy.

## Jewels of Nature

The book (Jewels of Nature) by the engineer Khalifa bin Badawi Al-Higgi, included forty-four scientific articles on environmental components selected from the Omani environment. The book was written in a beautiful literary style. In the beginning, the book introduces the natural components, their features, their locations in the Sultanate, their ways of life and their adaptation to nature, as well as the natural and human threats they face, in addition to sending an awareness message on the importance of preserving these

components from deterioration and extinction as well as the efforts to develop and preserve them in various ways.

The book is divided into four chapters, each chapter contains eleven articles. The first chapter is devoted to wild animals, the second chapter is devoted to wild trees, the third chapter is devoted to birds. The book was concluded with the fourth chapter on marine life. The book is provided with selected photos of environmental components in order to give an aesthetic touch to the book.



## Environmental Issues and Studies



As for the book (Environmental Issues and Studies), it dealt with some environmental researches and studies that were published by the «The Lynx» Environmental Newsletter, which is published by the National Centre through its various Issues. These researches and studies varied. Some are concerned with wildlife animals and plants, and other research concerned with climate and environmental issues, in addition to the researches that focus on marine environment. There are also the scientific studies and new environmental discoveries in the Sultanate. The book dealt with clarifying the role of Islam in preserving the environment and highlighting some environmental issues that directly affect

society, such as issues of pollution, electronic waste and plastic bags. In this book, research, studies, topics and environmental issues were presented in all their aspects, as well as methodologies and approaches of the researches. The book was supported by numbers, statistics and appropriate images that serve the topics. The National Centre has collaborated with a number of government authorities, universities, scientific colleges and civil society institutions to obtain this research in order to publish it, and this is what helped in achieving the important goals in the field of specialized environmental media that focus on enhancing environmental awareness and spreading environmental culture.

## Environmental Protectors

The National Centre also issued the booklet (Environmental Protectors) as the first book of first series that consists of educational drawings aimed at children in the Sultanate. This booklet is considered the beginning of a number of other booklets aiming at the child, with an interesting storytelling style and enjoyable drawings, with the aim of presenting environmental information in a simple manner and addressing a number of environmental issues present in the Omani society. That will contribute to educating the child about environmental

issues and how to find appropriate solutions to ensure the achievement of sustainable development.

This booklet comes within the basic pillars of environmental education that the National Centre cares about, with the aim of instilling positive values in our children and making them aware of the importance of preserving the Omani environment and preserving its natural resources. Thus enhancing the child's national environmental sense and increasing the knowledge on environmental issues and ways to find solutions for them.





# Salinization of Freshwater in Al Batinah Coast

An environmental phenomenon has emerged during the recent years, represented by the intrusion of sea water to fresh water in coastal areas, especially in the coast of the South and North Al Batinah governorates. It caused severe damage to the ecological balance, plant death and soil salinization. The reasons for the occurrence of this phenomenon have varied, the most prominent of which is the increase in groundwater withdrawal in large quantities, which led to its decrease and consequently the occurrence of an imbalance in the existing balance between fresh water and salt water, which leads to the compensation of the decrease in fresh water by the increase of salty water, as the increasing population growth and continuous development in the Agriculture, industrial and commercial fields during the last five decades increased the demand for (fresh) water, especially groundwater, through drilling of wells. The problem of groundwater salinization that occurs in the Sultanate, needs many years to treat and limit it by re-balancing the rates of withdrawal from the underground aquifer and the rates of recharge. The effects of this problem may last for many years to reach future generations. At the same time, the rate of increase in salt water intrusion with fresh water would be faster if we deplete the groundwater in greater quantities. Therefore, there is a need for a community partnership in everything that would mitigate the problem and its consequences. Converging everyone's efforts, especially the owners of farms, and spreading awareness of the importance of rationalizing water consumption and its optimal use and the need to reduce the depletion of the aquifer, all of this is considered one of the most effective means to reduce this phenomenon. ☞



## Damages and Negative Impact

The intrusion of salt water with fresh water in coastal areas caused many damages, including the negative impact on the plant and crop growth, as well as reducing water quality for the users, soil salinization and increased erosion. Surveys conducted by the Ministry of Agriculture, Fisheries Wealth and Water Resources have indicated that the quality of water has significantly deteriorated in many areas in the North and South Al Batinah governorates, such as the basins of Wadi Al-Taw, Wadi Bani Kharous and Wadi Al-Fara, where the high salinity water has increased. The coastal parts between the Wilayat of Barka and Al-Masna'a are considered the most are as that suffer from the intrusion of salty water with fresh water and the deterioration of the quality of groundwater in the area between the Wilayat of Al-Masna and Al-Suwaik which include the basins of Bani Ghafir and Meehaof Al-Masrah Al-Hajir. Also, the area of highly saline water increased in the catchment areas in Mashin, Al-Hawasnah and Wadi Shafan in the Wilayat of Al Khaboura. As well, the water quality deteriorated in the coastal parts between Sohar and Shinas Wilayats.

## Reasons for the Exacerbation of Salinity Problem

Among the most important reasons for the aggravation of the salinity problem in Al-Batinah coast, is the large increase in wells drilling in these parts, especially during the seventies and eighties, plus the random drilling of wells and their negative impact on each other. In addition to the widespread use of deep wells, mechanical pumps and high pumping rates. Added to that is the significant increasing in the Agriculture land areas. For all of these reasons, the pumping rates from the aquifer

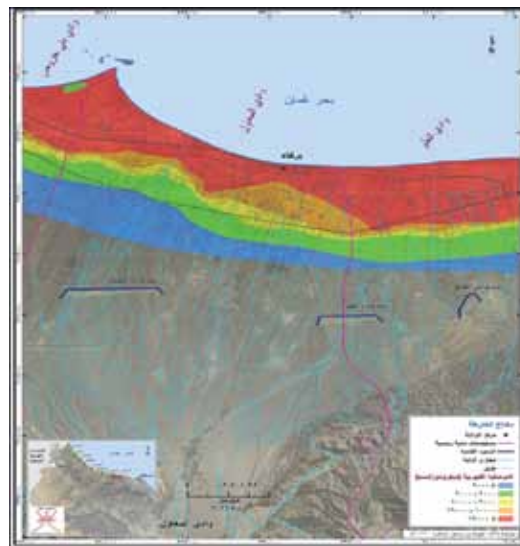
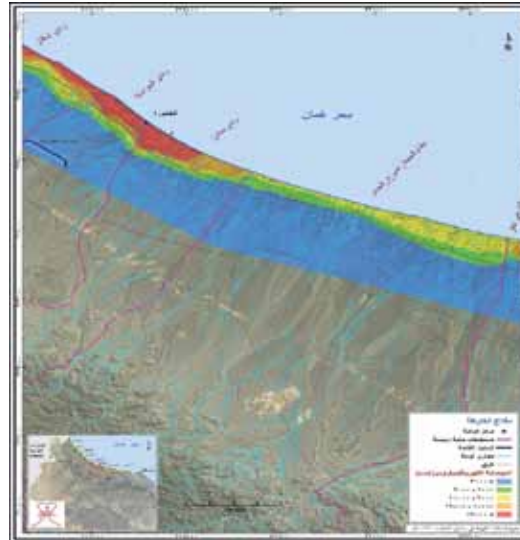
increased more than the rates of the ground recharge, as well as the fluctuation of the annual ground recharge rates from rain water and wadis flows, which are the main source of recharge for the aquifer in the Al Batinah region.

## Water Salinity Studies in the Batinah coast

Studies contribute a lot to diagnosing the problem of salt water intrusion in the Batinah coast, by tracking salt water intrusion and highlighting its danger, in addition to shedding light on areas that have witnessed improvement or deterioration in the quality of groundwater. Therefore, during the period between 1982 and 1985, the competent authorities conducted a study by collecting and analyzing salinity data from wells located in Al-Batinah coast. Since 1989, the Ministry of Water Resources (previously) began conducting field surveys for groundwater samples every two years in an effort that covered the period (1989 - 1997). As for the period from 2000 to the present time, samples are taken and salinity reports are issued every five years, the last of which is the 2016 report (issued by the Ministry of Regional Municipalities and Water Resources (previously), which was compared with all previous results since 1983.

The results of the field survey conducted in 2016, which was based on measuring the electrical conductivity (the degree of salinity in the water) in a number of (965) wells and covering about (2,295 km<sup>2</sup>), showed that 40% of the number of wells, the electrical conductivity of the water was more than 10,000 micro-siemens / CM. This represented 20% of the total number of wells that were operational during the 2010 survey in comparison to only 7% in 2005. That means the salinity of the groundwater increased by 65% in about (510) wells. The

**A Risk Threatening the Future  
of Environmental Sustainability**



## Suggestions

- To apply the principles of integrated water resources management to all catchments, involving water users in the preparing, the implementation of these principles and concepts and activating the regulations governing them
- To continue to implement procedures for changing the traditional irrigation systems into modern irrigation systems to reduce irrigation water loss and waste water resources
- To reuse treated water, especially for agricultural purposes
- To change the pattern of the crop composition to save a lot of wasted water by planting plants that tolerate high salinity such as (palm, cotton, barley, and alfalfa)
- To inculcate a culture of water conservatoin and raising awareness of groundwater depletion
- To encourage community cooperation in spreading awareness about the damage caused by the phenomenon and how to conserve fresh water

amount of land that is economically invalid for agriculture, in which water salinity exceeds 10,000 micro-siemens / cm is about 15,000 hectares, which is equivalent to 6% of the total land area covered by the field survey. While the area of economically unfit land was 9,800 hectares in 2010, which is also equivalent to 6% of the total land area covered by the field survey.

### Government Efforts to Address the Salinity Problem

The Ministry of Agriculture, Fisheries Wealth and Water Resources is making great efforts to confront the problem of salinity, the most prominent of which is monitoring changes in groundwater salinity to diagnose the problem and determine areas of overlap, as well as assess the impact of the Ministry's measures to reduce this problem and improve the water situation in Al-Batinah Plain, in addition to monitoring land degradation Agriculture, soil, and the environmental impact on the coastal parts.

In line with integrated efforts, the Ministry is constructing dams of all types, such as protection dams and storage dams. These dams, especially storage dams, recharge the groundwater and thus maintain the water balance and help to reduce the interference of sea water to the land. In this regard, the Ministry has established 54 ground recharge dams, 115 storage dams and 3 protection dams, in addition to the Wadi Daiqah dam. These dams have played a pivotal role in increasing the groundwater. The underground recharge and storage dams of the Ministry which was deployed in the various governorates of the Sultanate, retain an amount of water during the year 2020, which was estimated at about (121 million m<sup>3</sup>), the highest water retention was during the floods in the months of March (35.3 million m<sup>3</sup>), June (32.1 million m<sup>3</sup>), January (23.2 million m<sup>3</sup>) and May (22 million m<sup>3</sup>), which represents about (93%) of the total quantities of water withheld. The rest of the quantities were retained during the months of August (8.1 million m<sup>3</sup>), July (1.46 million m<sup>3</sup>) and November (0.23 million m<sup>3</sup>). These quantities are considered less than their counterparts recorded during 2019, which were estimated at (165 million m<sup>3</sup>).

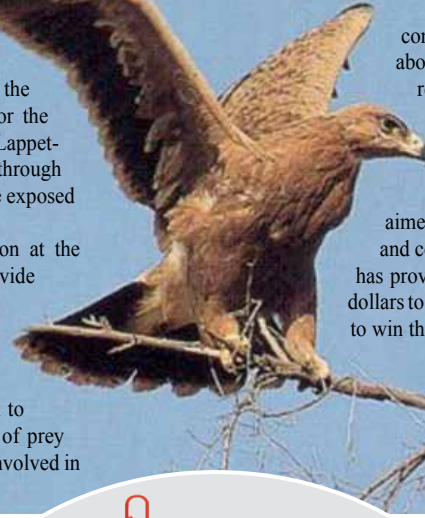
The dams of the Dhofar Governorate retained about (31%) of the total quantities of water retained in the lakes of the dams, and it was estimated at about (38 million m<sup>3</sup>). North and South Al Sharqiya (16.7 million m<sup>3</sup>), the dams of Al Dakhiliya Governorate recorded (14.8 million m<sup>3</sup>), the dams of Musandam Governorate (8.3 million m<sup>3</sup>), the dams of Al Buraimi Governorate (8 million m<sup>3</sup>). The least of dams are the dams of the Governorates of Muscat (5.5 million m<sup>3</sup>). Al Dhahirah (1 million m<sup>3</sup>). In the governorate of Muscat, Wadi Dayqah Dam in Qurayyat retained an amount of water that was estimated at (17.7 million m<sup>3</sup>), which is less than its

counterpart (33.5 million m<sup>3</sup>) during 2019. The Ministry has also developed water resources by: studying the effect of grass farms in the Al Batinah coast aquifer and build foundations for determining water quotas for various sectors. The Ministry has also implemented programs to rationalize water consumption by preventing the drilling of new wells for farms and monitoring the permissible amount of pumping from wells. It also monitored the water situation in Al-Batinah coast by modernizing the water resources monitoring network and continuing to implement field surveys and periodic monitoring of salinity. All these efforts require everyone to join hands to protect coastal areas from the encroachment of salt water and replace it with fresh water. The Ministry seeks to reduce this phenomenon by applying the principles of integrated water resources management in all catchments, to involve water users in the preparation and implementation of these principles and concepts, and to activate the regulations governing them. Moreover, the Ministry stresses the continuation of preparing studies, monitoring changes in groundwater salinity, and implementing procedures for changing current irrigation systems to modern irrigation systems to reduce irrigation water losses and wasted water resources. As well, the Ministry stresses coordination with farm owners to change the pattern of the crop composition to save water by planting plants that tolerate high salinity such as (palm, cotton, barley, and alfalfa), in addition to continuing awareness programs to instill a culture of conservation of water. The coastal plains are among the regions in the world most affected by the phenomenon of saltwater intrusion with fresh water. Groundwater is the main source of fresh water in coastal areas, especially in arid and semi-arid regions. The groundwater in Al-Batinah coast represents more than 90% of the available water resources used for Agriculture purposes. This coast extends for a distance of 270 km along the Sea of Oman from Muscat to the borders of the United Arab Emirates. in the north of Shinas Wilayat, with a width ranging between (10 - 40) km from the edge of the mountain to the coast. There are a number of Wilayats spread along the coast, which are Barka, Al Musanna, Al Suwaiq, Al Khaboura, Saham, Sohar, Liwa and Shinas. On the other hand, the continuous high intrusion of salt water into fresh water, gradually reduces the presence of vegetation. This in turn, affects wildlife and birds, whose presence is considered a factor and a global indicator of the safety and sustainability of the environment. Therefore, concerted efforts must be made by the competent authorities, in partnership with society and stakeholders to limit the effects and exacerbation of the problem.

## » The Environment Society of Oman Conducts Field Research to Protect Vultures in the Sultanate

The Environment Society of Oman recently obtained a grant from «Disney Conservation Fund» to finance its project aimed at protecting Vulture in the Sultanate. Through the support provided, the Society conducts field research to monitor the reproductive cases of these birds, assess the numbers of these Lappet-faced vulture and Egyptian vulture in landfill sites, track them through Satellites and assess the electrocution accidents that these birds are exposed to.

Maya Sarrouf Wilson, Director of Research and Conservation at the Environment Society of Oman, said “Although the vultures provide great environmental services as they work to eliminate natural waste, they still suffer from negative society perceptions”. said Maya Sarrouf Wilson, Director of Research and Conservation at the Environment Society of Oman. She went on to say, ‘Through the generous support of the Disney Conservation Fund, we seek to continue studying and better understanding these types of birds of prey that are at risk of extinction, and then share the results with those involved in



conservation efforts and with society in general, to raise awareness about the true value of these birds, in the Sultanate, the rest of the regions and the world alike”. The Sultanate is home to various types of raptors, whose numbers are declining significantly and alarmingly, This is including Egyptian vultures and Lappet-faced vultures. It is noteworthy that the Disney Conservation Fund provides support for various community initiatives aimed at preserving wildlife and encouraging individuals to protect and conserve natural resources around the world. Since 1995, the Fund has provided a number of grants estimated at more than 100 million US dollars to non-profit organizations around the world. Candidates are selected to win the grant according to their efforts in implementing comprehensive community programs that focus on preserving wildlife, as well as contributing to increasing the number of animals at risk of extinction, and integrating society into the protection of various ecosystems in the world.

### Qatar

#### The Municipality and Environment Celebrates the Qatari Environment Day 2021

The Ministry of Municipality and Environment celebrated the Qatari Environment Day under the slogan “Together for Our Health and Environment,” which was launched in a number of kindergartens and winter camps, in the presence of a number of ministry officials and the environmental affairs sector.

### Kuwait

#### A Meeting of the Board of Directors of the Public Authority for the Environment

The Board of Directors of the Public Authority for the Environment held a meeting under the chairmanship of His Excellency Sheikh Abdullah Al-Ahmad Al-Sabah, Chairman of the Board of Directors and Director General. The meeting approved and issued an amendment in the Executive Regulations of Waste Management. The Board also agreed to approve the environmental compensation provided that an area to be compensated shall not be less than 10% and allocated in the related development projects. In addition to that, the Board agreed to form a committee to deal with and dispose of tires in Al-Raheya area.

### KSA

#### The Environment Begins Implementing the Executive Regulations for Trade in Wild Organisms

The Ministry of Environment, Water and Agriculture announced the start of the implementation of the Executive Regulations for Trafficking Fungal organisms, their products and derivatives. The ministry explained that the regulation applies to all persons in the Kingdom, and aims to define the scope of work of the National Center for Wildlife Development and the National Center for Vegetation Development and Combating Desertification regarding trade in fungal organisms and their derivatives and products.

### UAE

#### Preparations for Participation in the UN Climate Summit «COP26»

The Preparing Team for the Participation in the UAE in the Twenty-Sixth Session of the Conference of States Parties to the United Nations Framework Convention on Climate Change(COP26), held its first meeting to discuss the State's preparations to participate in the main and side events of the conference, and what will be proposed and discussed in terms of climate action efforts.

### Bahrain

#### An Awareness Campaign in Schools on the Occasion of the Tree Week

The capital Secretariat launched its annual campaign on the occasion of “the Tree Week” in cooperation with 4 government schools of various educational levels. The campaign in this year was marked by planting some seasonal fruit seedlings such as berries, almonds and figs, in cooperation with the parents.

## » The Death of Flamingos After Ingesting Lead in Greece

Athens - ONA: Dozens of Flamingos Birds have died in a lake in northern Greece after ingesting quantities of lead that are used illegally by poachers. «Since we received the first flamingos with symptoms of poisoning at the end of January, we have treated nine of these birds,» Stavros Kalpakis of the non-governmental organization «Movement for Wild Animals and Plants» told the Greek news agency. Kalpakis explained that these birds «had all eaten quantities of lead,» despite the restrictions on hunting during the lockdown measures that were re-imposed in Greece since November due to the Covid-19 pandemic. Last year, Lake Ayios Mamas on the Halkidi peninsula became the first flamingo site in Greece, but it has become lethal for these animals, according to Stavros Kalpakis. He pointed out that «the problem appears to be confined» to this region, criticizing the widespread violations of restrictions imposed on fishermen during the lockdown period. The use of banned lead in Greece in wet areas is still common in the country, according to human rights groups.



## » Astronomers Monitor a Meteor Explosion in Jupiter's Atmosphere



Washington - ONA: A team of astrophysicists discovered an object colliding with Jupiter, leaving behind a bright flash. The scientists captured the collision by NASA's Juno spacecraft, which is in orbit around the planet. The scientists said that Juno accidentally detected a flash above Jupiter's clouds last year, and after examination they were able to determine that the data showed that a lightning bolt or an extremely bright explosion from a meteorite had hit the upper atmosphere of the gas giant. Such collisions are not rare for Jupiter because it is the largest planet in the solar system with some very strong gravity, but catching one of the collisions is a kind of luck, as it is difficult to detect.

## » The Italian Volcano «Etna» Erupts and Spews Its lava

Catania - ONA: The volcano «Etna», located on the island of Sicily in southern Italy, erupted, spewing lava and ash on the southeastern slope at an altitude of 2000 meters. Local media and social media showed pictures and videos showing a huge smoke cloud rising from the crater of the volcano from which the lava flows, while there were no reports of injuries or damage. The Italian news agency ANSA stated that a column of smoke and ash rose in the air for a distance of a kilometer, which led to the temporary suspension of Catania airport due to the spread of ash in the air and on homes, streets and balconies all over the city. The eruption of (Etna) that is considered as the UNESCO World Heritage Site at a height of 3,300 meters is a common occurrence.



Environmental Vocabulary

### The Glass

Eng. Khalifa Badawi Al Higgi  
almitc@yahoo.com

It swims lightly and gracefully, flowing like a piece of silk between sea salt water particles. Its movement is only overburden by its light weight and its weak symmetric shape. The biggest part of this animal is its transparent jellies, which resemble a bell or an inverted cup that does not exceed a few centimeters in diameter excluding some of its species that may increase. From this bell, projects tentacles arms, up to four meters long, scattered in the water vacuum as a silky lock of hair that pours its beauty and its elegance in a way that suggest safety and reassurance, while hide a terrifying danger to thousands of human beings. Is this a mystery or a reality, or events proven by the observations and facts?!

A transparent gel body. Its composition is very simple, does not know the complexity. Brain, heart, blood, gills, and bones are organs that does not know their meaning or realize their need. Its vital functions are shortened in very simple parts. It consists of the outer layer (Epidermis), which protects the internal layer, which is called (Gastrodermis). The two layers are separated by a gel substance (Mesoglea). The Gastrovascular cavity performs the roles of the esophagus, stomach, and intestines, and has one opening (Orifice) in the centre which is only its gate for both eating and discarding waste. At the edges of this gel, the tentacles arms do vital roles such as highlighting odors, seeing light, and determining directions. With this simple composition, water occupy for 95% of its body. One species of this animal has 24 real eyes, each has a lens, a mesh and cornea. These eyes arranged in pairs surrounding its body, in each pair one heading up while the other down enabling the animal to see at an angle of 360 degrees. This optical device is the most advanced in the animal kingdom. This animal feeds on eggs and larvae of fish and marine plankton, while itself provides a tasty meal for other creatures particularly sea turtles and some fishes that bear its high toxicity.

It defends itself with thousands of stinging cells, at the end of which there are thousands of toxic filament bags that motivated at risk and create sizable pressure of more than 2,000 pounds per square inch, then explode to penetrate the victim's skin, throwing thousands of doses of poison. This ability continues to be active even after its death. Statistics have indicated that its human victims exceed 10,000 annually, particularly the species that called the Sea Wasp (chironex fleckeri). Because of this, this animal is known as one of the most dangerous and toxic animals on Earth, as well as one of the oldest, where it is believed to exist about 500 million years ago.

The Jelly fish reproduce sexually by releasing sperms and eggs into the water and then fertilize and forming a planula, then hooks on a hard surface until it grows to be polyp. The polyp continues to this stage for several months and then separates from the surface and change to another stage and starts to move as a small jellyfish called Ephyra and then becomes an adult jellyfish. Scientists have laboratory discovered that one species of jellyfish returns after reaching the stage of immaturity and then to puberty in an infinite cycle except with abnormal death. When jellyfish thrive and accumulate in large numbers, indicate of global warming or ocean water pollution. Jellyfish is a transparent animal like a glass, both similar in beauty and meet in danger.

# Oleander



Oleander is an ornamental plant that is widely cultivated in public streets and parks, for the beauty of its flowers and the diversity of its colors

It is a beautiful evergreen tree that grows to a height of about 6 meters

It tolerates drought, wind and high temperature



Oleander blooms all the summer to the autumn and their flowers' colors are vary between pink, red, purple, white and yellow



It is a very toxic plant because it contains glycosides that may cause heart muscle imbalance

