



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

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Sultanate of Oman  
Diwan of Royal Court

Issue 30



# Omani owl ...

**Discovery  
Confirms the  
Biodiversity Of the  
Sultanate of Oman**



point of view

**We are proud of you**

**Dawood Sulaiman Al Balushi**  
Editor-in-Chief

Despite their young age, when you would listen to them and see their enthusiasm, personal ambition to take up environmental research, willingness to explore new world of plants and wildlife, you would be very happy by the existence of these beautiful and innovative energies as students. They love their environment and are keen to protect them by all possible means and methods. This love has led them to score first prize in the international Environment (GLOBE) Program, for research and study of the effectiveness of the use of reeds' plant in the fertilisation of the vegetations and its impact on water and soil on which they grow.

The students; Wijdan Al Nidabiya, Arwa Al Jalandaniya and Razan Al Nadabiya of Umm Hani School for Basic Education in Al Dakhliya governorate; have set an example in scientific research excellence and have succeeded in bringing up the name of the Sultanate in this prominent Environment (GLOBE) forum. In this forum, 150 research works from all across the world have participated. The winning of the first prize is indeed an evidence of its strength and distinction in finding appropriate solution of the environmental problem. It has also highlighted the great passion of our students in conducting scientific research and exploration for new information.

The Omani society has lots of such honorable examples in all scientific and literary areas. It also proves the interest of the Ministry of Education shows in such research and pays attention to the creation of a generation of researchers, through its various scientific activities and programs, including participation in the Environment (GLOBE) Program. We are proud of it. It urges us, as guardians, to encourage our children to engage in such programs and scientific activities which would help them gain self-confidence, and increase their knowledge and information in various areas of science, and establish a solid scientific base for the Omani society for a better future.

I thank all those who contributed to this Omani achievement of this international environmental award. I also thank the parents of these students, the faculty and the organisers of the the Environment (GLOBE) Program. Such success in the environmental areas has to continue and various governmental organisations have to support such scientific research and endeavours and apply its outcomes on the ground for the development of our beloved Oman.

**Under the slogan  
"Connect to Earth"**

**The Sultanate  
participates in the  
celebration  
of Earth Hour**



March, 24, 2018 under the hashtag "Connect to Earth". The celebration of the cities and countries of the world Earth Hour annually to achieve several main objectives, the most important protection of environmental and climatic and ecological systems of pollution and environmental degradation, and reduce the negative effects of the global phenomenon of global warming and climate change on ecosystems, and increase and promote the concepts of awareness and culture of society to the challenges of global warming And climate change as community members can all work to bring about the desired positive change.

The Sultanate represented by The Ministry of Environment and Climate Affairs organised a ceremony to celebrate the inauguration of the Earth Hour under the theme "Connect to Earth" 2018 in the Ministry premises. The Sultanate's celebration of the World Earth Hour event reflects the Sultanate's commitment to the international conventions and protocols related to the environment and climate affairs. "It minimises the effects of global warming and it addresses the risks of climate change. The Ministry seeks to spread environmental awareness on global warming and to introduce the wrong practices that doubles the risks on earth". The

annual Earth Hour celebration is a global event that has seen a growing success since two and a quarter million residents of Sydney, Australia, in 2007 participated in the event. In the last two years, the event has attracted the participation of around 7,000 cities around the world in 162 countries. The celebration this year from 8:30 am to 9:30 pm on Saturday,

**«Oman Divers»  
organise  
campaign to  
clean up «Al  
Kharabah Island»  
Daymaniyat**



The voluntary team of the Omani divers, in coordination with the Ministry of Environment and Climate affairs and Al Rabdan Centre for Diving and Marine Tourism, organised an environmental campaign with the theme "Be a Partner in the Protection of the Marine Environment of Oman". In the event,

17 volunteers of marine environmental protection participated. As a result of the campaign, 300 kg of miscellaneous wastes were collected. They included plastic materials and fishing net, cans of soft drinks and fresh juices, aluminium dishes, other types of dishes, waste food, and other such items.

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**Caused many disasters around the world**

# Genetic Erosion

■ **The factors of the degradation of biodiversity on the planet, such as the loss of habitats, environmental degradation and pollution, climate change and its multiple impacts on the environment and biodiversity, have contributed to the spread of diseases and epidemics.**

**a disaster for**
**biodiversity and environment**


## Risks

One of the most serious reasons, which, although it is very important, is not mentioned by many. This is the loss of some species due to the excessive use of genetic resources, especially those of plants, either directly or indirectly, especially excessive commercial harvesting.

### Genetic disaster:

In 1970, some countries of the world saw the first natural disaster in modern history, called the genetic disaster. It was a result of the development of strains of yellow cytoplasmic maize, instead of cultivating hybrid yellow maize produced by traditional methods of plant breeding. Female plants, which are not effective pollen and are hybridised by normal male strains, produce a hybrid of maize, to reduce the cost of hybrid maize production, which is dependent on conversion of plants to female plants by removing their male foliage. Most part of the United States of America, Canada, Mexico and other parts of the world are cultivated

The dependence on just one of the types or species, perhaps from the agricultural point of view, is important in terms of agricultural operations and controlling the date of agriculture. But it has a huge risk of infection with a particular disease will eliminate this species in all areas of cultivation. This has actually happened when these fungi spread. These fungi were in America since 1930 and did not have effect worth mentioning. But the interaction between the environment and genetic makeup has helped to spread this disease with such intensity. This unfortunate result has made most of the global organizations, including FAO, to warn against dependence on just one type or species, relying on genetic similarity. This warning came because of the genetic disaster, which would not have occurred without manipulation of genetic material and provide environment for the development of these fungi.

countries have adopted dependence on one type of livestock. Thus, the hybrid yellow maize with cytoplasmic infertility was exposed to leaf disease caused by two fungi. The appearance of these fungi contributed to the complete elimination of hybrid maize carrier of cytoplasmic infertility in the areas where hybrid maize was cultivated. Of major disasters. This is considered as one of the major disasters recorded in modern history in 1970. It led to serious economic losses. This fungal disease affected all yellow hybrid maize fields which carried male cytoplasmic infertility.

### Genetic manipulation:

The manipulation of genetic material has advantages and disadvantages. They have effects on the environment in which living organisms may not be recognized in the short term. But, they may have long-term effects, and for this reason there must be prevention of manipulations of the genetic material. The emergence of a genetically modified animal may contribute to the elimination of local animals of that species or other types.

Therefore, relying on just one type or a few varieties will contribute to its loss if it is exposed to disease or pest in most of the cultivated areas. Therefore, global research has taken a new shape. It is for increasing genetic diversity to increase the resistance of germplasm and reduce the chances of their erosion. Therefore, same thing is for the livestock, the loss of natural habitats will lead to erosion. With the removal of tropical forests, in the Amazon basin and other tropical countries such as Indonesia, to convert to agricultural land

● **70-year-old maize disaster sounded the alarm and showed the importance of establishing gene banks to protect biodiversity**

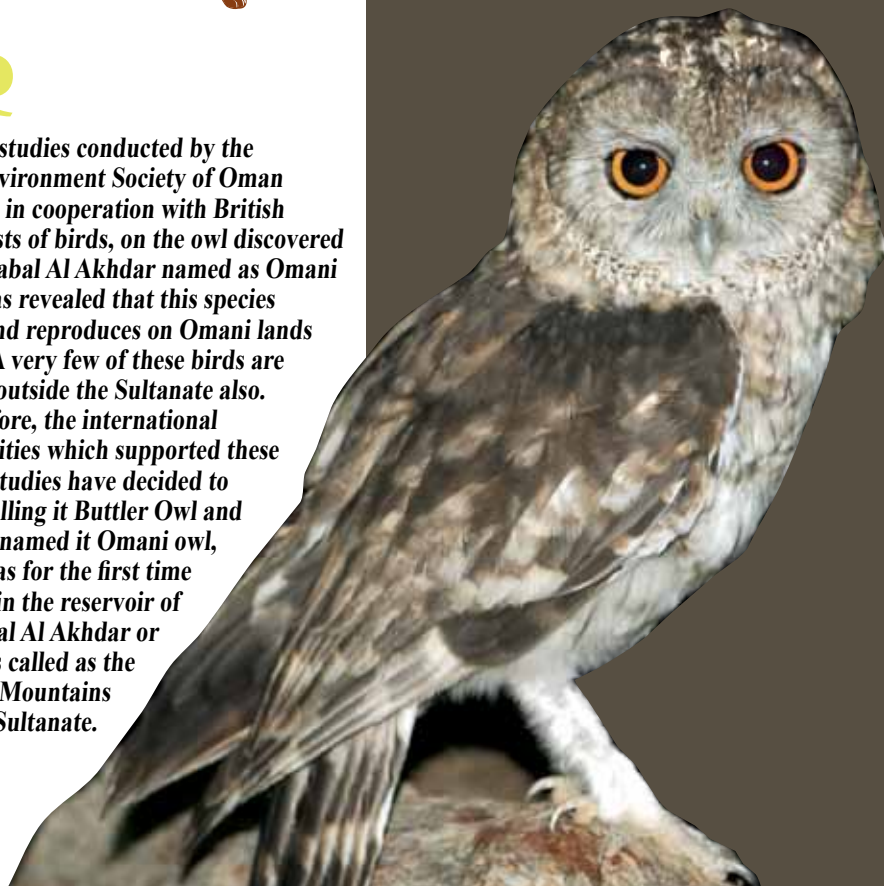
● **Unfortunate result of genetic erosion made most of the global organizations, including FAO, to warn against dependence on genetic symmetry**

with this hybrid. This is based on one type of hybrid yellow maize. This represents a type of genetic similarity, which is the carrier of the gene of cytoplasmic male infertility.

This genetic similarity has resulted in the non-cultivation of other hybrid maize varieties. This is called genetic erosion or dependence on one species only. Many



**The studies conducted by the Environment Society of Oman (ESO), in cooperation with British scientists of birds, on the owl discovered in Al Jabal Al Akhdar named as Omani owl, has revealed that this species lives and reproduces on Omani lands only. A very few of these birds are found outside the Sultanate also. Therefore, the international authorities which supported these latest studies have decided to stop calling it Buttlar Owl and finally named it Omani owl, as it was for the first time found in the reservoir of Al Jabal Al Akhdar or what is called as the Green Mountains of the Sultanate.**



# Omani owl ... Discovery Confirms the Biodiversity Of the Sultanate of Oman

## 60 bird watching site

There are more than sixty bird watching sites in the Sultanate. Most important of them is Bar Al Hakaman, which is considered the most wonderful site for watching many types of birds, including large eagles, large flamingos, gulls, hooks, etc. Some of these birds are in thousands. There are other important bird watching sites located on the beaches, islands, gulfs, deserts, mountains and fields. Most important of them is Musandam, which links the Arabian peninsula with the north Asia, where there are many birds. There is an island called the bird island in Khasab, which contains large species of birds, as well as there are coast of Batinah, Islands of Swadi, Demania and Al Fahl, Al Ansab lake in Muscat, Qurayrat, Sur, Ras Al Hadd, Masirah Island, Mahoot Island, Halaniyat Islands, and Al Jabal Al Akhdar. Dhofar governorate is distinguished by many species of birds, which can be seen before and after the autumn season. The can be easily seen and photographed particularly near sea lagoons and mountains.

This is classified as a new type of owl and one of the rarest and endangered species. This classification indicates that the Sultanate is unique in its geographic position for the biodiversity, particularly for birds. It gathers birds from three continents, Asia, Europe and Africa, in one place. The northern Oman is home to and a way of migration of the birds of Asian and European species.

### Omani Owl:

During the preliminary studies conducted by a team of researchers from the Environment Society of Oman and British bird scientists using tools of monitoring and accurate recording, sounds of a new owls were heard which have not been heard or recorded before. This led the scientists and researchers to follow this thread and set up night cameras to be photograph the owl. The cameras of the scientific team spotted seven new types of owl which have never been recognized by the scientists earlier. This was named as Omani owl and was classified as among the rarest and endangered species.





■ ■  
**The new discovery  
has been  
classified as one  
of the very rare  
and endangered  
species**

■ ■  
**The sound of the  
bird was monitored  
and the 7 new types  
of owl bird was  
monitored with  
modern cameras**



**In-depth studies:**

One of the world's biodiversity explorers was able to solve the mystery of the Omani owl which was discovered on Al Jabal Al Akhdar. A number of samples stored in museums which were for a type close to the owl called the Butleri owl, which is known by its scientific name *Strix Butleri*, were examined. The genetic analysis of the samples collected from several countries in the Middle East was carried out. It proved that the butler owl may be divided into two types. one of them is the owl known as *Strix Hadorami*, which can be seen in several countries in the Middle East, including Saudi Arabia, Egypt, Yemen, southern Oman. The other is owl which is scientifically called *Strix Butleri* and of which only one type of sample is found in Pakistan since 135 years. A team of scientists captured one of the new species and later released it as part of a joint research project with the Environment Society of Oman and Bird Life International. The team took samples of the feathers and blood of the bird and analysed them. As a result of these efforts, the team recommended to stop calling this bird as Butleri owl and named it as the Omani Owl, as the species lives and reproduces only on Omani soil. The team has found only a few isolated birds found outside the Sultanate. This

recommendation was accepted by the IOC World Bird List.

**Unique diversity:**

This new discovery has proved the Sultanate's unique biodiversity. The Sultanate is an important centre for birds migrating between Asia, Europe and Africa. More than 527 species of birds have been identified in the Sultanate. The new findings of the research team has confirmed that there are other species which are facing extinction are ostriches, ibex, ducks Abu Farwa and Chershir etc. It has noted that the northern Sultanate is home to many types of Asian birds as it is closer to the Indian subcontinent, while southern Oman has African species. Oman is considered as a vital bridge for the migration of birds from Asia to Africa.

**Massive efforts:**

The experts of birds have started study of Omani birds ever since the seventies. Then the first book "Birds of Oman" was written. The efforts to register and classify birds of Oman continued by many including Oman Birds Registration Association. Many researchers made huge effort to collect details, record and photograph the Omani birds, thanks to the efforts of the biodiversity authorities in the Sultanate. The Environment Society of Oman is studying the Egyptian eagle, which is found in several sites in the Sultanate. Masirah island is considered as one of the most important gathering points in the world for many endangered species.

# National Centre presented a workshop on the field survey of birds in Nizwa University

by **Nasr Al Rahbi:**

A team from the National Field Research Centre for Environmental Conservation presented a workshop on «Field Survey of Birds» for the students of Nizwa University. The workshop was organized in collaboration with the University's Aflaj Research Unit. It covered various areas particularly about birds in Oman, their various species, how to identify them, and the method of surveying these birds. There were



also discussion with the students, both male and female, about the species of birds found in Oman and which areas they can be located. On the sidelines of the workshop, a film about birds in Oman, were also screened. This is one of the documentary films which were produced by the National Field Research Centre for Environmental Conservation. The workshop is one of the activities related to the

2nd phase of the program called "A Volunteer in Environment", It was aimed at creating awareness among youth about various environmental issues, and encourage them to contribute to the efforts of finding environmental solutions, promote environmental culture in the society, and strengthen the ideas of nature conservation and environmental preservation.

## Saudi Arabia

### The Saudi Ministry of Environment begins implementing the concept of green buildings in its buildings

The Ministry of Environment, Water and Agriculture in the Kingdom of Saudi Arabia has completed its first projects in the transformation of the concept of green buildings in the new ministry building, as part of a plan to develop the requirements of the new buildings to be environmentally friendly.

The Director General of the Department of Engineering in the Ministry, Eng. Kanaan Al Kanan, said that the ministry made sure that the building that was recently moved to provide water and energy, pointing out that all the laundries and toilets include water guides in addition to the presence of a gray water processing station to purify water and reuse Back in the works of irrigated plants and evaporation tanks in the toilets.

## Kwait

### The Kuwait Dive Team organize a beach cleanup

The Kuwaiti diving team of the environmental voluntary gesture said that the campaign to clean the coast of bidyah has been successful after lifting more than two tons of plastic waste, iron nets and tires. The external relations officer of the team, Dr. Dhari al-Huwail, said in a press statement that these wastes were causing environmental pollution

and distort the coast and some of them are dangerous to maritime navigation. He added that this campaign organized by the team in cooperation with the US Embassy in Kuwait, the army and the General Authority for Environment and the Municipality of Kuwait and volunteers. This come within the program of mobile campaigns to clean the beaches.

## Bahrain

### Saving 3 rare turtles

The Supreme Council for the Environment in Bahrain, in the cooperation with the Al Ola Group, the Bahrain Animal Welfare Society, and specialists from the United States of America succeeded in saving the lives of 3 rare turtles and rehabilitating them for 5 months before being launched at sea.

## Qatar

### Proposal for the opening of a center for the production and propagation of biodiversity

Nasser bin Mohammed Al Jabr, a researcher in the field of nature and specialist in endangered bird species, presented a proposal to the Ministry of Municipality and the Environment to establish a project for the production, propagation and conservation of biodiversity in the world, which was accepted by the competent authorities. He has already received approvals, to set up the project on the ground.

## UAE

### 100 Smart trash cans on Dubai's Shaikh Zayed Road

Dubai Municipality has introduced 100 smart and environment-friendly trash cans on Shaikh Zayed Road.

These waste containers having separate compartments for general waste and recyclable materials have been introduced as a first phase to encourage waste separation and increase the efficiency of recycling programs, the Waste Management Department said in a press release on Sunday. These containers have been placed along both sides of Shaikh Zayed Road from Dubai World Trade Centre roundabout to the first Interchange linking the bridge on Safa Street and Financial Centre Street, it said.

The smart containers are designed to the highest and the best quality standards approved in the field.

## Biodiversity shrinking threatens food, water and energy in the world

A UN-backed study on biodiversity found that human activities are causing an alarming reduction in the diversity of plant and animal life on land and jeopardizing food, clean water and energy supplies. The study, in which more than 550 experts took part and included a series of reports endorsed by 129 governments after talks in Colombia, said pollution, climate change and deforestation to expand agricultural land were among the growing threats to nature. «The essential biodiversity of life forms on Earth continues to shrink in every part of the world,» said the study's participants, «a disturbing approach that jeopardizes

the quality of life for people everywhere.» Four regional reports from the Americas, the Asia-Pacific region, Africa, Europe and Central Asia covered all regions except the poles and the high seas. With regard to the Americas, the report pointed out that the value of natural resources to people, such as crops, wood, clean water or tourism, amounted to at least \$ 24.3 trillion a year or the equivalent of gross domestic product from Alaska to Argentina. Two thirds of these natural resources are shrinking in the Americas, the report said. Among other economic estimates, the report said that the absorption of each hectare of greenhouse gases is about \$ 14,000 a year.


**Environmental Vocabulary**

### The full description

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We see it everywhere, rooted in time, wherever you are directed in the valleys or in the mountains or near the buildings, you find it like the sun is bright, and by its majestic height is high. It has a great importance to human, and high benefit to animal. If it were to be only magnified by man is enough, but praise came from God of the earth and high sky. It mentioned by God in many verses of the Holy Quran, a sign of its importance for the benefits and attributes it carries. It is a huge tree, perennial, shaded, evergreen and beautiful. Its fruit is small and round, its taste is sweeter than sugar, before its maturity it is called locally as «Khudhumdham» and «Buckthorn» when fully ripe. Its branches are high as if embracing the sun, and bears the heat and harsh weather.

The Sidr tree is spread everywhere, especially the wadies, and there is no place free from them. Some of them are found in the middle of villages, under which the citizen sit and comfort. Any place without the Sidr as if it is out of the earth planet. People have become accustomed to it and become an integral part of the social entity. There are still some Sidr trees perennial in some villages witnessed the existence of successive generations, have inherited names as if they stamped by eternity. The Sidr trees have countless benefits; each part has its own benefits, and has its specific uses. Their leaves, for example, are used as an antiseptic and washing. Their flowers are a vital season for bee nectar. The Buckthorn is a delicious meal for humans, animals, birds and ants.

The Sidr trees are reproduced by cuttings in winter, and by seeds that gathered in summer. Seeds that collected in winter do not germinate. Also the Sidr can be reproduced by grafting. There is another kind of Sidr smaller in size and has big fruits, is cultivated in orchards and is not found in the wild.

The importance of the Sidr trees in the Omani environment, such as the importance of water for the plant. They have a social and economic income and have a religious dimension. Mentioning the Sidr in the Holy Quran has many implications and abundant meanings. Despite the invasion of some plants in the Omani environment, the extinction of the giant Sidr has weak evidences. The decline in its numbers is significant, and the diminution of its benefit is observed. Some of the environmental authorities began to cultivate them in the most likely places for growth and stability. There is no doubt that the intensification of cultivation will have a positive return to the environment and human beings, and will open scientific horizons and innovations of manufacturing in a variety of shapes and colors. It is the forgotten tree in this era. So let us contemplate in God specified mention of this tree, and restore its right in our thoughts. This can make us invent different paths of interest and find new outlets for innovation and uses.

## World's last male northern white rhino dies

The world's last male northern white rhino has died, the Kenyan conservancy taking care of it said, leaving only two females of its subspecies alive in the world although scientists still hope they can save it from extinction.

Ol Pejeta Conservancy said in a statement it had made the decision with wildlife officials and his previous carers to euthanize on Monday the 45-year-old rhino, named Sudan, due to the rapid deterioration in his condition.

Sudan was being treated for age-related complications that had affected his muscles and bones and also gave him extensive skin wounds.



## Climate change will internally displace 143 million people by 2050

Climate change, already a growing driver of migration, forcing families to flee water scarcity, crop failure and rising sea levels, may cause as many as 143 million people to be displaced by 2050, the World Bank has concluded in a new report. This scenario covers just three regions — Sub-Saharan Africa, South Asia, and Latin America — that are major climate “hot spots” and account for 55% of the developing world's population. The report, Groundswell: Preparing for Internal Climate Migration, examines the impacts of internal, or in-country migration as people increasingly look for more viable places to live in the face of slow onset climate change impacts. The shift will likely involve the

poorest people from the poorest countries moving in large numbers from rural regions to increasingly overburdened urban areas. Without prior planning, such dramatic swells of migration could lead to major disruption and instability, the report says. The World Bank urged cities to prepare infrastructure, social services and employment opportunities ahead of the predicted influx, warning that “adaptation in place” strategies to make rural areas more resilient have limitations. The report, the first to look at such possible population distributions within countries, estimates up to 86 million people could be displaced in Sub-Saharan Africa, 40 million in South Asia, and as many as 17 million in Latin America.

# The Food Chain

Design: Marwa al.Ghafri

