



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

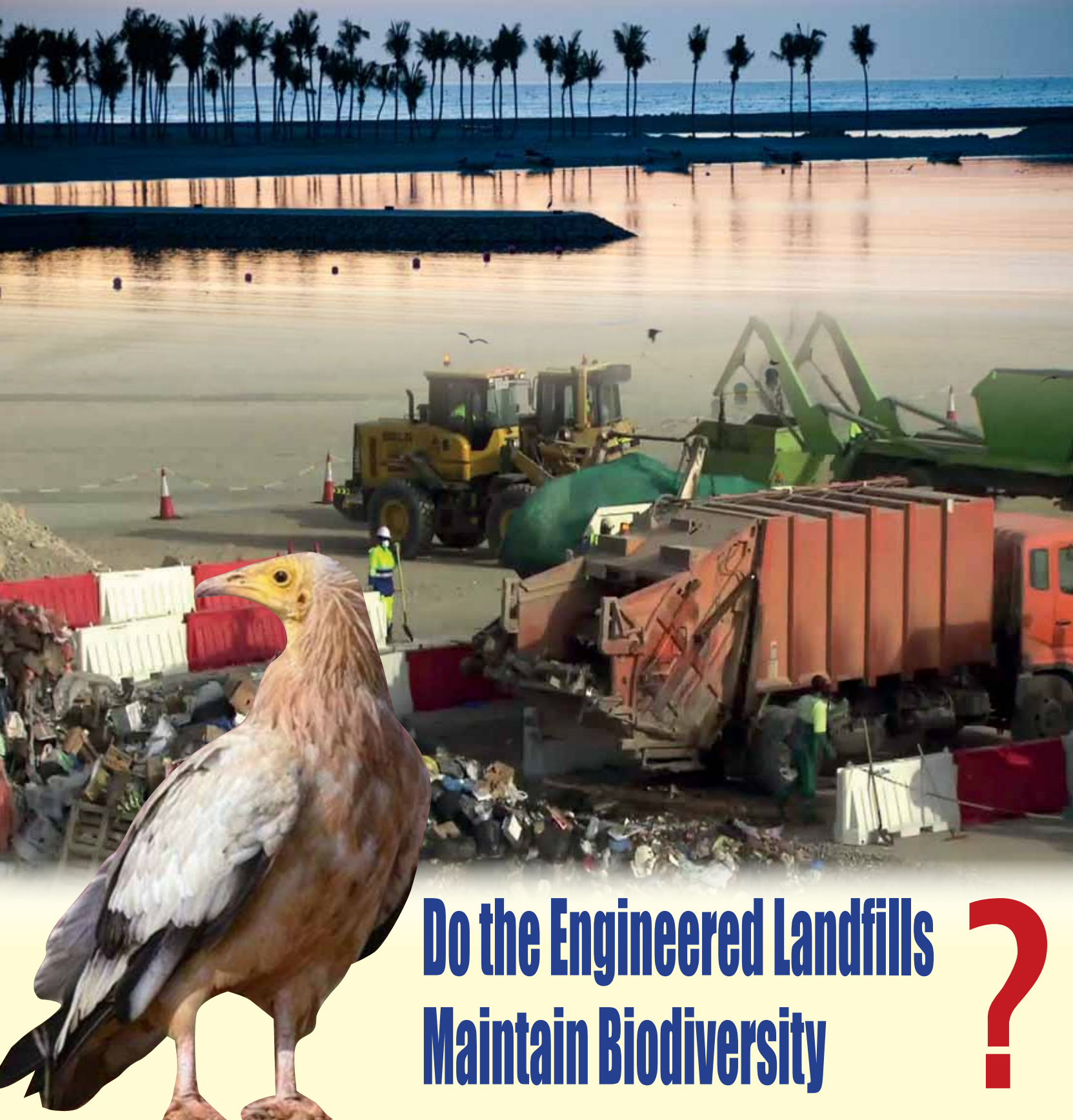


Sultanate of Oman
Diwan of Royal Court

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Do the Engineered Landfills Maintain Biodiversity



Arabian Ghazalle hunters arrested in Al Jabal Al Aswad area of Al Sirin Nature Reserve



The officials of the Office of Conservation of the Environment of the Diwan of Royal Court nabbed violators of wildlife law during the wee hours of July 30. They were arrested at 2 am with the help of the Royal Oman Police (Al Amerat Police Station) on charges of hunting two Arabian Ghazalle in Al Jabal Al Aswad area of Al Sirin Nature Reserve in Muscat Governorate, which is patronized by the Office of the Conservation of the Environment. The perpetrators used a four-wheel drive vehicle with high-tech equipment. They also used high-power flashlights to mislead to avoid being traced at the crime scene. They also directly threatened to use the weapons in their possession against these arresting officials, putting their lives at risk. On 30 July 2019, the monitoring centre of Al Sirin Nature Reserve received information that a four-wheel drive vehicle was in a restricted area without prior permission for entry and at a time when entry was not allowed in the area. After inspecting, monitoring and tracking remotely with the help of local citizens, it was confirmed and proved that these violators were present at the site, and the information they had received about them was correct. With the help of the Royal Oman Police, all precautionary necessary measures were taken for any emergency situations. At approximately 2 am, the officials raided the perpetrators when they

were in their vehicle with various firearms in their possession to target both the officials and collide with the vehicle of the officials and escape the crime scene. Despite all these efforts, the officials and the Royal Oman Police arrested a number of violators of the wildlife law for hunting two Arabian Ghazalle firing at them and slaughtering them. All the arms and ammunitions they had possessed were also confiscated and all other evidence of their crimes were collected. It was done with a high level of professionalism. After that the police started investigation with the hunters about the incident and gathered further details to be handed over to the court. This is to take legal action for their act. The Office of the Conservation of the Environment has urged everybody to cooperate for the protection of wildlife as a national asset and not to endanger it. It also commended the local community of Al Sirin Nature Reserve and Ras Al Shajar Nature Reserve for their continued cooperation and the important role they have played in assisting and providing information to nab the violators of the wildlife and conservation of the environment. The perpetrators who were nabbed were found indulging in a number of criminal acts and behaviors including the crime of hunting in an animal reserve, attacking public servants while they were on their duty, threatening use of firearms and driving vehicle recklessly.

point of view



A Law for Tree Planting

Dr. Dawood Sulaiman Al Balushi
Editor-in-Chief

Elsevier Bouvier (45), who lived in the Alps, believed that planting trees was essential for human life. Everyone among us is obliged to plant some plants or trees in our surroundings. This is because these trees would be very beneficial in future for us and as well as for the environment where we live. This man was fond of planting oak and acacia trees in his region where there was a small population of those who were engaged in herding goats. In five years since he launched this initiative, he planted a thousand oak and acacia trees. It made the entire area a unique and exceptional forest with abundant shade and beauty. With this, it became a major environmental attraction and tourist destination for the people of the neighborhood. When the area became popular, the administrative authorities concerned with this area noticed it. They visited this forest and ensured its protection. Taking a clue from this experience, these authorities brought a law to ensure that each area under its authority should plant different types of trees to look like the area in which Bouvier put in lots of effort. It also believed that this would have tourists and environmental benefits.

This and other such works associated with plantation highlight the importance of trees in the daily life of a human being and the environment around them. There are many customs and traditions related to tree planting in some African tribes. They make planting of trees mandatory for marriage and divorce. Many countries in the world have made it necessary for factories to plant trees around them to reduce factors of pollution. There are countries which make it essential for people who want to build their private accommodation that they plant trees and grow a small garden in the backyard.

Considering the degradation of vegetation all over the world which is associated with the disappearance of many species, it is necessary to pay attention to planting trees. This has huge health, environmental, economic and tourism benefits. The current situation makes it essential for the countries to make laws and regulations making it mandatory for people, societies, communities, voluntary and sports organizations to plant different trees; so the vegetation can be restored to levels similar to ones in the past. This step will serve as a safety valve with lots of benefits for our future. It would be a strong deterrent for this planet to protect it from deterioration.

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Asho'a «Wild Moringa» tree and its benefits

Benefits:

Since ancient times, Omanis have depended entirely on the nature and benefits of trees and wild plants. The Al Sho'a or Wild Moringa tree is one of such trees the fruit of which is used for extracting Moringa oil considered very important. Moringa tree has many benefits. Its flowers are known for its aroma and beautiful shape. They are pasture for honey bees. The remains of these trees are food for animals. It gives shade in deserts and high mountainous areas. It has many other benefits too. Aromatic oil is extracted from the seeds of mature Moringa. Its outer shells are removed and then hammered with a tool called Al Sahaf, a rock used to mash the seeds. It is rectangular and slightly deep in the centre. It is around 30 centimeters long and 10 centimeters wide. The mashed seed are then dried in the sun for a day and then pressed with two woods in a utensil. This act is repeated until enough oil is extracted and until the seeds are completely dried. Then the oil is cleaned and kept in bottles for use or for marketing. The residual wax after extraction is called 'Meedha' and is similar to clay. The branches of Moringa tree are used to light fire and as a fuel. The juice of its leaves is used to fix broken pots and to join fractures. These leaves are hammered, placed in a container with a little water, heated until it starts boiling and then squeezed and put again in the pot and cooked until it boils and turns black. These processed leaves are good for treating fractures. It is applied on cotton and tied around the place of fracture. Moringa oil is also a treatment of diabetes, blood pressure, paralysis, joint pain, skin diseases, malaria, fistula wounds and nerve and is good for massage.

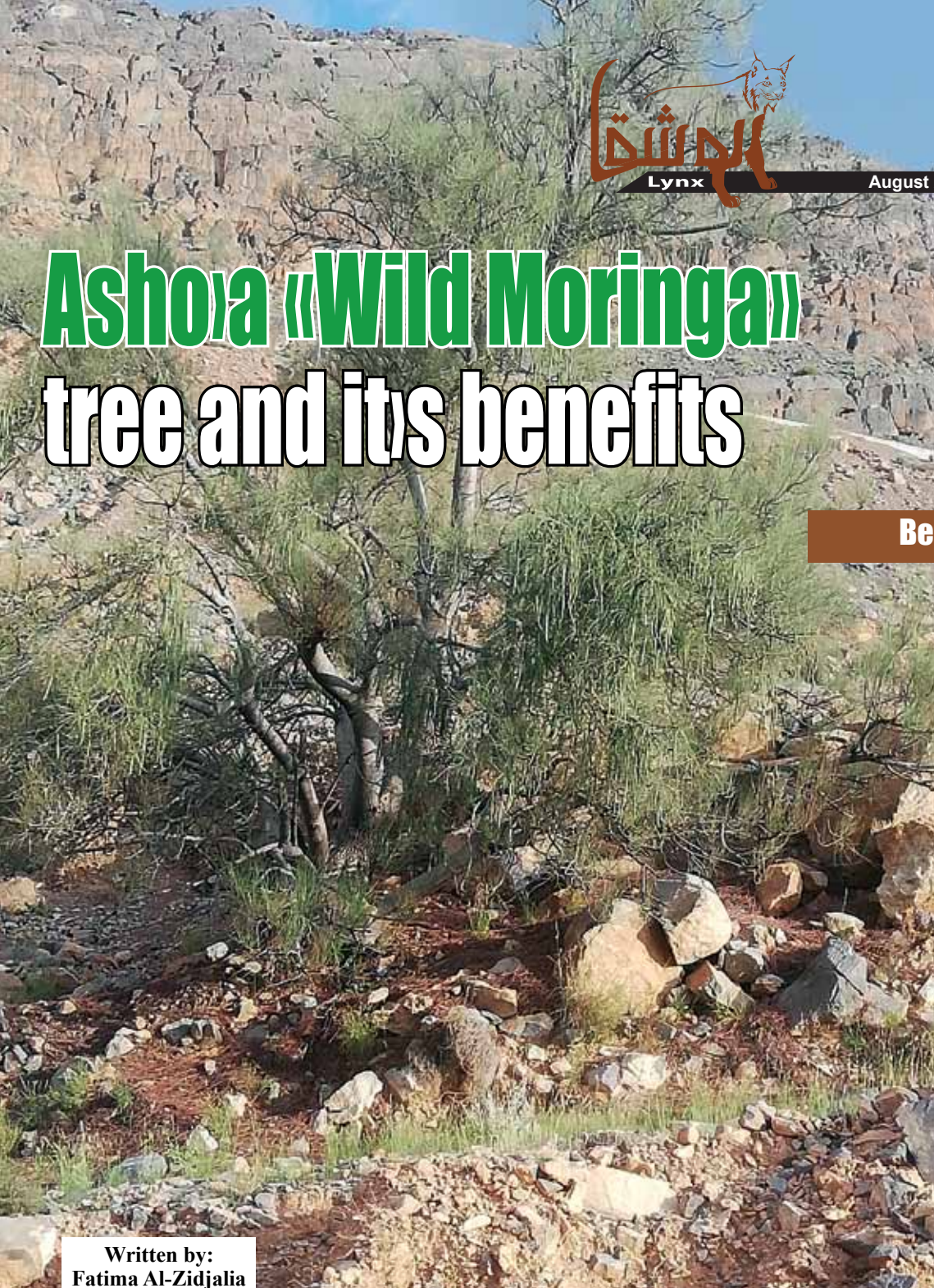
Written by:
Fatima Al-Zidjalia

Perennial plant

Sho'a is wild tree in the Sultanate of Oman it is a species of Moringa, and also called the tree of life. It has the scientific name *Moringa peregrina*. It is a flowery plant from which aromatic oil is extracted. The oil has a composition of palm acid 9%, arachidonic acid 2%, oil acid (oleic) 71%, linoleic acid 1%, and other acids. Moringa is a perennial plant, a tree with straight branches which are two to eight meters long. It has compound leaves which are very few and small. The tree has very dense and beautiful flowers. These flowers are pink and whitish. These flowers begin to appear before the leaves appear in the period between March and April. After pollination, these flowers give long fruits, with each fruit having a number of seeds in a row. The seeds are big and are similar to pistachios.

Places

Moringa trees are found in East Africa and are spread throughout the Arabian Peninsula up to Syria in the north. It is found in steep rocky cliffs and gravel wadis, in the mountains at different altitudes of not more than 2,500 meters above sea level and outside the areas of monsoon rains in Dhofar governorate. These trees are exposed to overgrazing, which hinders their growth. The trees have abundant seeds which are dispersed after the rainy season. They are carried by running water or by animals which eat them. They grow naturally in different dry environments and can be easily planted and used for grazing.



● **Food shortage and
illegal hunting threaten
Egyptian Vultures**



Do the Engineered Landfills
Maintain Biodiversity



**The study recommends adopting waste disposal
comprehensive strategy stressing on wildlife**

Muscat-August:

A team of environment and biodiversity specialists led by the well-known researcher Michael J. Macgrady conducted a study on Egyptian Vultures at Muscat's municipal landfill. The findings of the study which was submitted to Oman Holding Company for Environment Services (Beah) highlighted the vital role waste management and engineered landfills play; not only in keeping human life healthy and sound but also in contributing to observing biodiversity and providing food sources for birds. Furthermore, the study pointed out that the well-managed engineered landfills can be used in monitoring and tracking birds of all species.

Bird Study

according to the study that was carried out at Muscat Municipal Landfill at Al Amerat which is managed by Beah the landfills contribute to understanding the behavior of migrant birds to which they flock for food, and present a good location for bird monitoring throughout the year. This in turn provides information on the changes happen to the birds in their immigration. The Muscat located 15 km south of the built up areas, the Muscat municipal Landfill is well known among birdwatchers for the Egyptian Vultures that are the most common scavenging raptor to use this

site and known for being usual to be seen at Southern Europe, North Africa and south Asia.

Study Tools

The study team used different-size binoculars and telescopes in counting the raptors scavenging at the landfill during the period November 2013-March 2015. The findings have been submitted to Beah in 29th January 2019, by Macgrady 458 endangered Egyptian Vultures have been observed at the site, where the adults represented 67% of the total count.

Migratory Birds

In addition to being a good source

● **Engineered
landfills
contribute
to counting
and tracking
Egyptian
Vultures**



volumes of local birds. The study highlighted the significance of drawing a connection between the number and age group of Egyptian Vultures flocking to the engineered landfill in the autumn; in line with the number of the birds breeding in the far north of the Sultanate; as there is no sufficient information on the birds migrating to the landfill in winter.

Threats endanger Egyptian Vultures

The study concluded that the main threats that endanger Egyptian Vultures are: changes in food availability, illegal hunting and persecution, electrocution, inadvertent poisoning, diclofenac, targeted poisoning related to poaching, and traditional folk medication.

the study hinted to the fact that rapid urbanization the Sultanate is witnessing as the towns go bigger and turn to urban hubs and the growing population- the majority of population concentrates in Muscat- contributed to the availability of food sources for migrant birds at the engineered landfills.

**Environmental
Balance**

The study concluded that adopting a comprehensive strategy for waste management and the availability of safe access for birds to food sources at the landfills provide answers to the issues of assuring sound public health and protecting Egyptian Vultures and the other migrant species at the same time. This in turn will contribute to establishing and maintaining the environmental balance required. Furthermore, wide-spreading awareness and educating local communities on the importance of keeping this environmental balance in a good manner will help saving these endangered species of birds.

Egyptian Vultures

Egyptian Vultures are partial migrants birds that breed in northern areas move to south for the non-breeding season. The juvenile Egyptian Vultures dwell in southern areas like Oman for some years before returning to their natal areas.

Breeding by Egyptian Vultures in Oman occurs mostly in the northern mountains (eastern and western Hajar mountains including Al Jabal Al Akhdar.

Many of bird watching lovers are very keen to visit landfills regularly; as these sites are a good source of food for birds. Subsequently, these landfills contribute to observing and watching different species of birds to know more about them.

● **458
Egyptian
Vultures
observed at
Al Amerat
engineered
landfill**



Study Recommendations

- The importance of adopting a comprehensive waste management strategy that includes attention to wildlife
- The need to follow the methods of scientific research and monitoring and continuous monitoring in engineering landfills
- The importance of expanding in field operations and ensuring that the benefits and benefits of waste management are increased and public awareness is addressed
- In drawing up policies and legislation, the role of engineering corps in providing food for migratory birds



of food for migrant birds, the engineered landfills are approved to be a good site for watching and monitoring the migrant birds especially in the period from October to March. Furthermore, another species of vultures have been monitored; but in a small population and in winter only.

According to the study, the breeding of Egyptian Vultures was from 15 to 25 couples. However, the main reason of having the majority of breeds in the north of Oman is still unknown. So, the study stressed on the necessity of carrying out more research on the possible relation between the numbers of birds observed and breeding



Ministry launches campaign to plant Mangrove trees in Khor Ghawi of Al Jazir

The Ministry of Environment and Climate Affairs has launched a campaign to plant 1,000 Mangrove seedlings in Khor Ghawiof the wilayat Al Jazir. It is also carrying out several field surveys of Khor Zarf and Khor Ghavi of Al Wusta governorate to understand the level of adaptation of the Mangrove trees to their environments. The plantation project in Khor Ghawi started in March 2005. About 95% of the project has been achieved so far. The average length of these trees is about five meters. A number of migratory seabirds, including the large flamingoes, were found in the area as it is located on the main path of the migration of birds. It makes it one of their natural habitats. The Mangrove trees are part of the ecosystem of lagoons as they provide safe environments for small marine organisms such as fish,

mollusks, crustaceans and marine snails. The Mangrove forest environments are also a natural habitat for endemic and migratory birds and they play an important role in stabilizing the lagoons environment and protecting it from floods and erosions. It stores large quantities of carbon and purifies the air from poisonous gases. The campaign launched by the ministry is part of its Master Plan for the Conservation, Management and Rehabilitation of Mangrove Tree Environments. It is aimed at increasing the area of Mangrove tree forests and the biodiversity of the marine organism. Since the implementation of the plan started in 2001 till date, about 681,000 seedlings of Mangrove trees have been cultivated in 32 sites of the various governorates of the Sultanate.

Qatar

Signing a memorandum of understanding to preserve the shark

The Ministry of Municipality and Environment signed a memorandum of understanding (MoU) with the North Oil Company to study the appropriate conservation and sustainable use of whale sharks at the headquarters of the Environmental Affairs Department in Borj Al Odaid. It was signed in the presence of a number of directors and officials of the Ministry of Municipality and Environment, and the North Oil Company. The agreement was signed by Omar Salem Al Nuaimi, Director of the Department of Protection and Wildlife, Ministry of Municipality and Environment and Pascal Mayer, Executive Vice President of Health and Safety, North Oil Company. In his opening remarks, Omar Salem Al Nuaimi said that the MoU was part of the efforts for exchanging experiences for the study of whale sharks. It is aimed at strengthening the cooperation between the two entities for the protection of rich coastal and marine biodiversity in the regional waters of the State of Qatar and strengthening scientific and technical cooperation in the area of protection of marine life. He said that both sides wanted to visualize their future cooperation in scientific research.

UAE

UAE launches «Ghafat Al Khair» initiative

On the eve of the Year of Tolerance, the Ministry of Climate Change and Environment, in collaboration with the Community Development Authority of Dubai, launched Ghafat Al Khair initiative to plant 200 Ghaf trees in the homes of senior citizens of the Emirate of Dubai. HE Dr. Thani bin Ahmed Al Zeyoudi, Minister of Climate Change and Environment, and HE Ahmed Julfar, Director of the Community Development Authority, planted the Ghafat Al Khair plant at the Senior Citizens Club Building in Al Barsha area of the Community Development Authority. This was to mark the beginning of the initiative and distribution of plants in the homes of senior citizens. HE Dr. Thani Al-Zeyoudi said that the selection of Ghaf tree as a logo for the Year of Tolerance gave further impetus to the efforts of the concerned authorities in the United Arab Emirates (UAE) to increase the green area by relying on local plants, especially the Ghaf tree which was given huge importance by Late Sheikh Zayed bin Sultan Al Nahyan. He always wanted to increase the number of Ghaf trees and issued orders and laws to prevent its cutting or harming.

Bahrain

Integrated national strategy for Waste management

His Highness Sheikh Abdullah bin Hamad Al Khalifa, Personal Representative of His Majesty the King and Chairman of the Supreme Council for the Environment, said that the Kingdom of Bahrain has made great strides in the field of conservation and development of the environment sector under the directives of His Majesty King Hamad bin Isa Al Khalifa. He added that the integrated national strategy for waste management of Bahrain was moving in the right direction after its approval by the Council of Ministers in February 2018 on the recommendations of the Coordinating Committee chaired by HRH Prince Salman Bin Hamad Al Khalifa, Crown Prince, Deputy Supreme Commander and the First Deputy Prime Minister. He spoke during a meeting held by His Highness Sheikh Abdullah bin Hamad Al Khalifa at the Crown Prince's Court held to review the implementation of the national integrated waste management strategy in the Kingdom of Bahrain, in the presence of His Highness Sheikh Faisal bin Rashid Al Khalifa, Deputy Chairman of the Supreme Council for the Environment and His Excellency Sheikh Salman bin Khalifa Al Khalifa, Minister of Finance and Economy, HE Engineer Essam bin Abdullah Khalaf, Minister of Works, Municipalities Affairs and Urban Planning, HE Dr. Nabil Mohammed Abul Fateh, Undersecretary of Municipalities Affairs, and HE Dr. Mohammed Mubarak Bin Dinah, Chief Executive of the Supreme Council for Environment. His Highness Personal Representative of His Majesty the King also directed the formation of a steering committee comprised of all concerned parties to do the follow up of the implementation of the most important outputs of the integrated national strategy for waste management and to submit periodic reports to measure the level of achievements and periodic developments. He pointed out the initiatives taken to achieve realistic and tangible results as soon as possible to meet the challenges facing the Kingdom in this area.

Saudi Arabia

Efforts to control the Desert Locust

The Ministry of Environment, Water and Agriculture said that 133 teams have discovered and eradicated locust in 6,500 hectares of deserts in four regions, including Asir, Al Baha, Najran and Jizan, between July 28 and August 1. The Ministry said that 100 field teams in Asir region managed to treat 4,000 hectares of locusts. For this purpose, they used 4,000 liters of mixed pesticides. In Al Baha region, 25 field teams treated about 2,000 hectares of desert by using 2,000 liters of pesticide. Five teams of Najran region treated 200 hectares with 200 liters of pesticide after mixing. The 300 hectares in Jazan region was treated for locusts by three teams which used 300 liters of mixed pesticides. The ministry said that the situation in regard to desert locusts improved significantly in a number of governorates after the effective eradication drive. The areas which were covered during the campaign were Taif and Ardiyat in Makkah region, Al Mandak, Al Qura, Al Mikhawat, Qalwa, Ghamid Al Zannad, Bani Hassan, Al Aqiq, and Baha city in the Baha region.

KUWAIT

EPA participates in the Protected Areas Forum

EPA participates in Regional Forum for biodiversity conservation department of the Environment Public Authority (EPA) participated in the Regional Forum of Leaders of the Reserves, held in Amman, Jordan, from July 1 to July 15, 2019. It was organized by the Royal Society for the Conservation of Nature (RSCN). The program is aimed at integrated protected area planning and species resettlement and rehabilitation programs, environmental education in schools, development of ecotourism and visitors' management with the local community involvement in biodiversity conservation. At the end of the program, birdwatcher Abdulaziz Al Yousuf from the Biodiversity Department presented a new proposal of a new project of birdwatching to be implemented soon in the Jahra Nature Reserve.

» An alternative to toxic pesticides saves billions .. worms protect crops from disease causes

Researchers at Boyce Thompson Institute (BTI), USA, have found that compounds from an unlikely source – microscopic soil roundworms – could protect crops from pests and pathogens without using toxic pesticides. As described in research published in the May 2019 issue of Journal of Phytopathology, these compounds helped protect major crops from various pathogens, and thus have potential to save billions of dollars and increase agricultural sustainability around the world. Protecting crops from pests and pathogens without using toxic pesticides has been a longtime goal of farmers. So, a team around



Professors Daniel Klessig and Frank Schroeder- led by BTI Senior Research Associate Murlimanohar- investigated the effects of a roundworm metabolite called ascr#18 on plant health.

» New Technology Turns Black Plastic into Precious Commodities

The black plastic is one of the biggest challenges facing recycling today. Fortunately, researchers have managed, recently, to develop technologies to turn it into valuable products. Mark Willson's The Seriously Scary Problem with the Black Plastic all around us, published at the American "Fast Company" shows that black plastic can contain all kinds of harmful chemicals. the problem stems from the technology used in recycling centers. These systems have trouble seeing and sorting black plastics out from other



plastics, which means a majority of black plastic that arrives at recycling centers actually goes into the trash instead of being turned into new precious commodities. according to University of Plymouth's Dr. Andrew Turner, the problem with reusing that plastic is that it's often filled with lead and flame-retardant chemicals like bromine. There are poisonous additives that exceed legal limits in coffee stirrers and garden hoses. Ongoing bromine exposure can give you systematic poisoning to the brain and kidneys. Lead can permanently hinder physical and mental development.

» More than 28,000 Species are threatened with Extinction

According to a report issued in July 2019 by the International Union for Conservation of Nature (IUCN), 28,338 species (vertebrates, invertebrates, plants, fungi and protists) have been added to the IUCN's Red List; due to species over exploitation and reducing habitats. Dedicated Efforts the number of species newly added to the list presents a 6% increase in comparison to 2018 when the Red List included 26,040 species. The latest version of the Red List assessed 6,127 species as "Critically Endangered". However, the IUCN explains that the increase in numbers of endangered species is attributed



to the extended efforts done in assessment; as these numbers don't reflect a real increase in the threatened species. The IUCN points out that all species under Whiptail Stingrays, except for the Rhinoray and guitarfishes are critically endangered because of overexploitation.



Environmental Vocabulary

The Leader

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It wakes up in the evening after spending its day in a deep slumber inside the den, hiding from the sun and re-energized to continue its way at night. Activates at night and rests in the day light. Always get away from people as much as possible and searching for its prey everywhere. This wild animal (Dog Family) is smaller than a dog but slightly larger than a cat. Because of its small size and weak body, it cannot face enemies, so it resorts to hiding and hunting its prey with cunning and tricks. It was and still full of books, and represented in Arabian literatures. And still, with its qualities, is parable.

This animal spreads all over the earth, adapts to its environments, and eats from its bounties. It withstands cold stings, adapts to the high heat. Its behavior patterns vary depending on location and environment where it lives as if it is a different animal. It is a polyphagous animal, which eats from trees fruits, and hunts from animals the smallest, such as rabbits, chickens, mice, lizards, insects, etc. It hears the rodents even underground with its Bat ears like, and senses the presence of a prey by its magnetic field, which it uses to determine its exact location, just like guided missiles. This feature was discovered as the first animal to use the magnetic field for hunting. Then it lurks to its prey and watches it, and in the moment of stillness it pounces on it forever. Like a sacrifice, it takes its need and what's left is stored inside known pits for a time of need. Its requirement of food is urgent which is requiring approximately 1,000 grams per day. This requiring it to travel more than 12 km a night at speeds of up to 72 km/h to look for food for it and its family to return to its den of rest and comfort. Although it walks alone, it is a family animal which lives in a family of eternal wife and puppies which protects and feeds them. It has about forty different voices, including a sharp sound that combines howling and screaming that it uses for mating instincts once a year. After 53 days of pregnancy, the Vixen gives birth to 2 to 10 puppies. All puppies are born blindly up to nine days, and live with their parents for seven months, after which they are able to form an independent family. This animal lives in the wild for three years while more than ten years in captive.

This wild animal is not dangerous to the human unless it has rabies. There are about 27 species of foxes around the world, the most famous of which is the red fox and the most common in Oman. Because of its wide spread due to its resistance to life, adaptation to various environments and its intelligent behavior, it has blended with people's cultures and popular heritage, and has become an ideal example and pride in cunning and tricks. Its spread and resistance to weather fluctuations does not mean that they lose their protection programs. Let this animal that is tiny in body and great in action remains an important element of the Omani environment, and a pride of human behavior with its leadership qualities.

Water is a trust

Marwa Al Mukhaini



Dad.. Why we don't use the hose to wash the car?

It's faster .

No son , the hose consumes alot of water and we should save the water

Well done Nora
We should watering plants by spraying and save water
Water is a trust



The Earth, my friend is losing a lot of drinking water. There will be no drinking water for future generations. We can conserve water by rationalizing its consumption in many ways including;



Be sure to close the tap



Less consumption



Awareness campaigns

