



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



Sultanate of Oman
Diwan of Royal Court

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Issue 53

Environment in Islam

Preservation

&

Protection



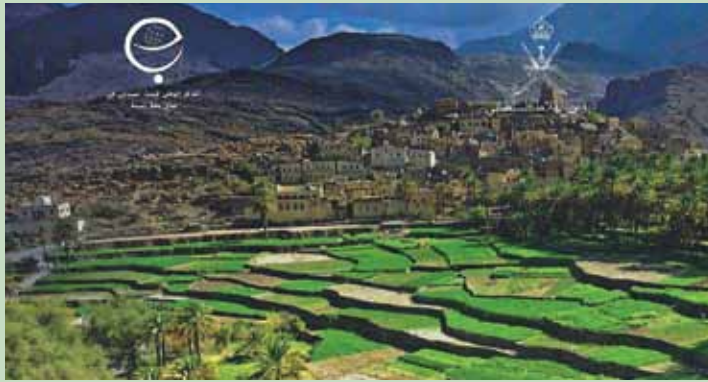
Ramsar Convention declares «Ansab Lakes» as its Second Site in the Sultanate

Within the framework of the efforts of the Ministry of Environment and Climate Affairs to protect wetlands of all kinds in the Sultanate and in coordination with the Ramsar Convention on the Wetlands of International Importance, the Ansab Lakes are announced as the Second Ramsar Site in the Sultanate on March 22, 2020. Ansab Lakes are classified as Industrial Wetlands according to the classification of the Ramsar Convention. Ansab Lakes with its 54 hectares of area and is considered as the site No. 2406 of the declared sites by the Ramsar Convention. Ansab Lakes is a wastewater treatment facility connected to a series of surrounding water pools, where this process provides quantities of treated water for reuse in the areas of irrigation

in addition to the creation of an environmental system that contributed to the provision of a suitable environment for birds, whether settlement birds or immigrant. More than 305 species of birds have been monitored there in addition to the contribution of the lakes in supporting the tourism sector as it is one of the tourist interfaces for birds watching. Commenting on this announcement, Badr bin Saif Al Busaidi, a nature reserve specialist, said that the Sultanate joined this agreement according to the Royal Decree Number 64 / 2012, issued on November 25, 2012. So the accreditation of the Sultanate's accession to the agreement came in May 2013, by announcing an initial site one, which is the Qurum Natural Reserve, located

in the heart of the Governorate of Muscat, with a total area of up to 80 hectares of Mangrove forest of the type *Avicennia Marina* which is the only species that can adapt to the the Oman climate and environment. More than 200 species of birds, 40 species of crustaceans and 50 species of mollusks have been monitored, in addition to many small fish, as the reserve is a nursery for breeding the commercially exploited fish of international economic nutritional value. Announcing this site as a Ramsar Site is a matter of international importance, as that qualifies it to be an important shrine for the ecotourism and the works that aim to preserve the ecological balance and nature protection from tropical storms and hurricanes.

A Film about Plants in the Sultanate



By: **Marwah Al Mikhainia**

The National Field Research Centre for Environmental Conservation (NFRCEC) has released a new movie entitled «Plants in the Sultanate of Oman» as part of the center's awareness and media program activities. The film deals with information about the plant diversity in the Sultanate, explaining that there are about more than 1295 species of plants and trees in the Sultanate distributed in various environmental systems in the Sultanate. Some trees such as Utum (wild olive), Boot and Juniper grow at high mountain environments such as

Jabal Shams and Jabal Al Akhdar. The desert environments are characterized by such trees as Acacia and Prosopis, while the Dhofar Governorate is famous for Frankincense and Tabaldy trees. The film shows that the marine environment abounds with great plant diversity, as it includes more than 520 species of coral reefs. Such plant diversity has created great economic, medical, social and scientific importance for the Sultanate. The film also examines the role of various government and private agencies, civil society organizations and individuals in strengthening the national effort to conserve the

environment, especially the plant environment. The film highlights the keenness of the government about the scientific research and studies, imbedded by the establishment of the National Field Research Centre for Environmental Conservation (NFRCEC) at the Diwan of the Royal Court. In addition, the film also highlights the effective role of the Oman Center for Animal and Plant Genetic Resources which works in studying the genetic diversity of plants and taking samples and preserving them in places designated to preserve and replant them in their natural environment.



point of view

An Earth without an Hour

Dr. Dawood Sulaiman Al Balushi
Editor-in-Chief

The Earth missed its hour, its minute and its second this year. The annual celebration of the Earth Hour came and passed this year, while all countries of the world are occupied with a tiring race with the Coronavirus (Covid 19) and its repercussions on the human, economic and social levels. The Earth Hour witnessed this year thousands human deaths as a result of the outspread of this deadly virus, which infected many thousands of people around the world. Earth Hour this year was not an ordinary hour like the rest of the annual hours that are celebrated as an awareness occasion for the global environmental.

The Earth Hour celebration, which takes place annually on the last Saturday of March of each year, is a reminder to all the world countries, institutions and individuals of the importance of reducing the waste of energy sources. It is a global event organized by the World Wide Fund for Nature (WWF) for the first time in 2007 in the Australian city of Sydney as an awareness campaign on global climate change, and a clarification of the importance of the role of the government, private sector and individuals in reducing global warming. Usually, the celebration of the Earth Hour takes place and timely programmed from 8:30 to 9:30 p.m. by putting off lighting, electrical and electronic appliances in homes and institutions, in a clear indication for the need to reduce the usage of non-renewable energy sources.

In light of this crisis, an environmental activist on a social networking site, suggested to change the symbolic significance of the celebrations of the Earth Hour from «turning off lighting and electrical and electronic devices» to «caring for public cleanliness», as public cleanliness plays a major role in protecting human health from all diseases, viruses and bacteria, as recent scientific studies have proven that washing hands with water and soap, bathing and caring for the cleanliness of the place where you live, is one of the main reasons for eliminating all diseases and viruses. This is proven now in this crisis. Washing hands well with water and soap kills the Coronavirus when it is attached to hands.

The rapid environmental and health transformations in this time require us to pay more attention to public cleanliness. So, allocating an occasion to celebrate it public cleanliness is extremely important to remind people of its important and pivotal role in preserving human health and survival. This is up to the global environmental organizations to seriously consider allocating a global environmental event to take care of public cleanliness, beside the repeated observance of the Earth Hour.

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Nature Reserves

One of the Manifestations of Sultan Qaboos Interests in the Environmental Components

Since the beginning of the Blessed Renaissance led by the late, Sultan Qaboos bin Said - May God have mercy on him - the late Sultan paid great attention to the environment. The natural reserves are part of the manifestations of the attention paid by the late Sultan in this aspect. This contributed to achieving an environmental balance and protecting many living creatures threatened with extinction. During the reign of the late Sultan, natural reserves were established and laws and legislations concerned with them were put in place, as the Sultanate announced a number of natural reserves in several different regions, with the aim of preserving and protecting environmental systems and biological resources. The late Sultan said in a speech on the Occasion of the Environment Year: "With all the important steps that we have achieved in this field in which Oman has won a good position among the world countries which are interested in protecting the environment, more efforts and considerations must be made in relation to environmental protection when planning and implementing development projects and to move forward in developing the existing links with the relevant regional and international organizations, as well as the fulfillment of each citizen's duty, as this is of great importance to protect our natural resources and public health from the harmful effects and to preserve the beautiful and distinct nature that God endowed for our beloved Oman».

Acacia Trees

Al-Sulail Nature Reserve is located at Al Kamil and Al Wafi Wilayatin Alshaqia South Governorate, with an area of 220 km². It was announced by the Royal Decree No. 50 /1997. Acacia trees are spread over this reserve, and there are more than 100 species of other wild plants and trees, as well as more than 30 species of wild birds, more than 8 species of mammals, and 166 species of insects have been recorded there.

According to the Royal Decree No., (45 / 2007), Alkhiran region at Muscat Governorate was granted the status of a public eco-tourism zone, in which dolphins, coral reefs and various types of marine creatures can be seen. Jabal Alakhdhar Landscape Reserve, which was declared by the Royal Decree No. (801 / 2011), is located in Aldakhiliya Governorate, with an area of 122 km² and is characterized by the availability of many plants, animals and birds. The area of Jabal Qahwan Nature Reserve in the South East Governorate is about 289.5 km² and the height of its peaks ranges between 1000 to 1300 meters above sea level, and it contains a diversity of plants in addition to a number of birds and wild animals.

The largest gathering of Mangrove Trees

The Wetlands Reserve in Al-Wusta Governorate, with an area of 2,621 km², has been declared by the Royal Decree No. (51 / 2014), and it contains the largest pristine natural gathering of mangroves in the Sultanate. It also contains seabed grasses and a group of algae and coral reefs, in addition to the recording of about 80 species of marine birds that are on land and water bodies. This reserve includes sea turtles, whales, dolphins and a number of animals that live on land.

Wetlands

At the Wilayat of Salalah in Dhofar Governorate, the Salalah Creek Nature Reserve is a wetland that forms a natural landscape with an area of 5.6 km². Also, at the Wilayat of Bawshar in the Governorate of Muscat, Al-Khuwair Nature Reserve has landscapes in flat lands on an area of 3 km² characterized by biodiversity that includes wild plants of Acacia, birds and reptiles. According to the Royal Decree No. (40 / 2019), the establishment of the Alhajar Algharbi Reserve for Star Lights in Al Dakhiliya Governorate is declared as the first of its kind in the Arabian Peninsula. In addition, the Royal Decree No. (41 / 2019) established Al Rustaq Wildlife Reserve in the Al Batinah South Governorate. These two reserves contain plenty of various wildlife, trees and various types of animals.



Biodiversity

The Qurum Nature Reserve, which was established by the Royal Decree No. (38 / 75) is considered as one of the first natural reserves in the Sultanate. The Qurum Nature Reserve is located in the Qurum region, in the wilayat of Bawshar, the Governorate of Muscat. It is characterized by a diversity of Mangrove trees, a large number of crustaceans, mollusks and fish, in addition to shrimps, crabs and shellfishes. This reserve is also a refuge for migratory and resident birds; in addition to that it contains a number of wild reptiles.

The area of the Qurum Nature Reserve is 1,045,775 m² (one million, forty five thousand, seven hundred and seventy five square meters), and the reserve was declared in 2013 as the First Ramsar Site of International Importance in the Sultanate. This comes within the Sultanate's obligations towards the International Wetlands Agreement (Ramsar) which the Sultanate joined under the Royal Decree No. (64 / 2012). There is also Alsaareen Nature Reserve, which was established in 1975. It includes groups of Arabian Tahr. In 1982, Ras Al-Shajar Nature Reserve was also established. It has an area of 93.7 km². It is rich with animal natural resources such as Arabian gazelle and tahr, and many species of birds. It also includes geological and plant resources and is also distinguished by abundance of acacia trees. On 1 / 8 / 1994, the Wildlife and Fungal Organisms Reserve (formerly the Arabian Oryx Reserve) was established by the Royal Decree No. 4 / 94, and it has an area of 282,403 km². It is characterized by the presence of 12 types of local trees, including Prosopis, Acacia, salam, Dajaa, and Ghdha and other trees. It contains birds, reptiles, and wild animals such as the desert rabbit, the red fox, the Ethiopian hedgehog, the Nubian Tahr, the Arabian wolf, the lynx, the striped hyena, the wild cat and the honey badger. In 2013, a project to re-breed and resettle Ghazal al-Reem in the reserve was established with 300 heads.

A Pristine Nature

The natural islands of Aldimaniat were declared as a reserve by Royal Decree No. (23 / 96) dated 3 / 4 / 1996 on an area of 203 km². Aldimaniat is an archipelago that includes islands of the coasts of Seeb and Barka Wilayats. These islands are distinguished by their pristine nature and picturesque views. They are considered as a regional and international centre for countless numbers and variety of migratory and endemic birds. They are also a home for marine mammals, fish, sea turtles, invertebrates, and reptiles. There are 15 types of wild plants in the reserve, and there are many types of coral reefs, weeds and seaweed.

On 23 / 4 / 1996, the Turtles Reserve was announced in Ras Al Jinz, which is located in the Alshaqia South Province, according to the Royal Decree No. 25 / 96 with an area of 120 km². The beaches of the reserve are one of the most important beaches for nesting of green turtles at the global level. It also includes a number of birds, wild mammals, coral reefs and Mangrove trees.

Jabal Samhan Reserve in Dhofar Governorate was established by the Royal Decree No. (84 / 97) on 28 / 6 / 1997 with an area of about 4,500 km² and includes a number of wild trees such as frankincense, Musht, Tashkot, Aqar and othertrees. It also contains a number of wild animals such as the Arabian leopard, Nubian Tahr, Arabian wolf, lynx, Striped hyena, wild cat, honey badger, Arabian gazelle, Genet and Lynx, along side a number of birds and marine organisms nesting on the coasts overlooked by Mount Samhan. Al-Akhwar Reserve was also announced in Dhofar Governorate by the Royal Decree No. (49 / 97) on 28 / 6 / 1997, and it consists of 9 creeks with an area of about 820 hectares, namely: Khor Almighaisseel, Khor Aldahreez, Khor Albalaid, Khor Awqad, Khor Souli, Khor Taqa, Khor Rory, Big Qurum Khor and Little Qurum Khor. These reserves contain a large number of plants, fish, and birds.

Environment in Islam

Preservation

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Protection

The Holy Qur'an and the sunnah, urge to preserve and protect the environment, as well as not to harm the environment in any way, whether the soil, water, air or the universe and all of its contents. In addition, Islam calls for caring for planting and forestation as one aspect of life building. In many aspects, we find that Islam urges us to preserve and protect the environment, such as the prohibition of extravagance and waste, the prohibition of pollution, and the urge to develop the environment.

The definition of environment in its general sense came in the book titled as: «Islamic Values and its Role in Providing Solutions to International Environmental Problems» by His Eminence Sheikh Ahmed bin Hamad Al-Khalili, the Grand Mufti of the Sultanate of Oman. Such definition runs as follows: «the environment is diverse and has multiple concepts, it may be as natural as the Earth and what it includes in its under earth or on top of its surface, as well as the seasons, the air, and the rains. Also such concepts may be social according to the way people live within their surroundings, such as environment surroundings, social systems that support the relations between them, and connect them with each other. As well, such concept may be religious according to the prevailing beliefs of societies and the resulting behavior of individuals who believed in them and their practices of worshiping according to such beliefs, or may be cultural concepts according to what is spread in the nations knowledge, and perceptions, and may be economic according to what people depend on in building its renaissance, moving their life forward and expanding their projects for productive wealth and it may be industrial concepts according to what industries people create by themselves or by imitating others»

The Islamic religion emphasizes the protection of the human soul from various dangers and damages. As the protection of the environment is a protection of human soul and as the corruption and pollution of

the environment, depletion of its resources and violation of its balance, threatens the life of mankind, makes it vulnerable to diseases and leads to human death, and as the environmental resources are considered blessings that God Almighty bestowed upon man. So preserving environmental resources against harms and pollution is a sort of thanking God Almighty. Environment resources include climate, water plant cover and natural vegetation in various forms, animal wealth, marine resources and mining.

The risk of environmental imbalance leads to several damages, including fundamental changes in the climate, such as high temperatures, sea level, acid rain and erosion of the ozone layer, as well as the occurrence of desertification, which causes great risks to the environment and people. From this stand point, came the Islam's concern for the environment in order to preserve man and natural resources from various risks.

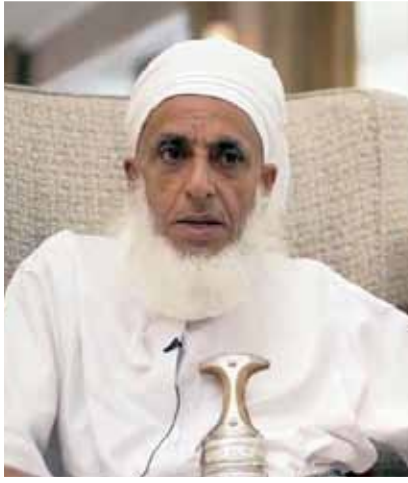
On the importance of preserving water from pollutants and methods of protection, His Eminence Sheikh Ahmed bin Hamad Al-Khalili explained in his valuable book titled: «Islamic Values and their Role in Providing Solutions to Global Environmental Problems» says that «water is the element of purification and the origin of life, so keeping it pure from impurities and away from polluters is important for the safety of human life, continuation of health and the prevention from diseases and epidemics. Muslims know the traditions (hadith) of

the Messenger of God (may God's prayers and peace be upon him) and how they protect water from pollutants, including forbidding passing urine while standing or into water sources and then use the same for washing and forbidding excrement where such behavior effects may be transmitted to gathering places of people, as well as forbidding excrement at the path of people and under the shadow of trees and warning against excrement in any resources. There is no doubt that there is extreme wisdom in this prohibition. That is because the diseases that are transmitted due to water pollution are numerous, such as those caused by germs and parasites in the feces of the sick person or his urine, in the forefront of which is typhoid fever (typhoid), and hookworm disease and worms.»

There are several sources of water pollutants, including industrial waste that is discharged to water bodies, as well as sewage water when it is discharged into water bodies such as rivers, seas, etc., in addition to marine pollutants that are via oil tankers from which oil leaks and affects marine creatures, and there are also the effect of pesticides on water by spraying agricultural crops, as well as the effect of nuclear reactors, plastics, lead, mercury, etc. on water.

Maintaining Landscape

Islam urged to beautify and decorate the plant environment in order to extend its benefit to humans and animals. The Messenger, may God bless him and grant



- **Water is the element of cleansing and the origin of life, so keeping it clean from impurities away from stimuli is a reason for the safety of life**
- **The Islam came with the method of rationalize and moderation in the use of life facilities and warns of wastefulness and extravagance**
- **The human being is trusted with himself, as he is trusted with everything around him, as he is required to avoid himself and others harmful situation**



him peace, called for the revival of the waste lands by planting and he promised a great reward from the God for that. He, may God's prayers and peace be upon him, said what means: "Every Muslim who sows or planting anything that from which a bird, a human being, or a beast can eat, that is charity form him". The Prophet Mohamed urged for planting trees even if on the dawn of Dooms day.

Islam maintains the vegetation cover and Prophet warned of cutting down trees, especially wild ones, without any necessity, as well as prohibiting harming the environment by fabricating fires and sabotaging the vegetation. Islamic religion urges interest in planting trees in order to create an environmental balance as this positively reflects on the various living organisms which benefit by the shade of the trees, by trees fruits, by reduction of temperature and by trees contribution to the oxygen existence.

"The Human is faithful to himself as far as he is faithful to everything around him. He is required to avoid himself and everything around him from harmful. Therefore, the Messenger of God (peace and blessings be upon him) ordered us to flee from the Leprous, like fleeing from the lion. Islam represented by the Prophet guidance, emphasized the use of quarantine. It is mentioned in the book titled «Musnad al-Rabi' Ibn Habib» that Said bin Abi Waqqas said to Osama bin Zaid: «What did you hear from the Messenger of God (may God bless him and grant him peace), saying about the plague? He answered: «I heard him say»: "Plague is a disease sent to a group of Israelis, or to those who were before you. If you hear that it is in a land, do not entre to it and if it is in a land where, you are in it, do not run away from it". Therefore, running away is not permitted from a place where the plague occurred for sparing other souls and the infection does not spread. So, the prevention of leaving the place in which a disease occurred is in order to beware of transmitting the

infection to others", added His Eminence, Sheikh Ahmed Al-Khalili, in his book. His Eminence went further to say: «This is not limited to human infection alone. The prohibition is to cover the safety of animals and livestock which must be protected from the effects of infection. This applies to all species of organisms such as crops, fruits and forests»

Balance and Moderation

His Eminence explained: «True Islam came with the method of balance and moderation in the use of the facilities of life and of enjoyment of it. It calls for moderation in everything, and warns of wastefulness and extravagancy. God Almighty forbids exceeding the limit in everything. The Almighty said in the Quran: "O children of Adam! eat and drink, but do not be extravagant, He (God) does not like extravagant people»

«And I learned that the principle of justice in Islam is imposed on its followers. When they were forced to fight, they must confine it to a narrow circle, so that those who fight them would not be encroached upon, while warning them against the absolute assault, which means that their hands cease from everything that is an attack on a person, an animal, a bird, planting, forest or land. That because God Almighty said: (And fight for the way of God who fight with you and do not abuse, God does not like aggressors.) All kinds of attacks on silent or speaking, alive or dead, is covered by the above mentioned verses of Quran», said His Eminence.

Protection of Living Species from Extinction

The Islam believes emphasized the importance of preserving the living species from annihilation and extinction. God Almighty created all beings for wisdom and a role in this universe. Islam also forbade excessive killing of animals and gave them rights that must be observed and performed. Islam also urged the Muslims to take care of animals, to care for them, to provide food

and drink for them and obtain the reward of the Creator of the Worlds. There are many ways of destroying the environment that Islam forbade, including causing damage, out of cruelty, to God's creation, destruction of environmental elements out of anger, damaging out of futility, unnecessarily or destructive damage, and neglect due to negligence or due to wars.

Air Pollutants

The Islamic religion took care of the air and urged to protect it from pollutants, as it is one of the blessings that a person's life cannot be upright without it. Air produces many benefits that God Almighty harnessed to human, such as the winds that help the movement of ships in the seas, contribute to the formation of rainy clouds, help birds and insects to travel from place to place, as well as contributing to the pollination of plants and trees.

There are multiple air pollutants, including natural ones, such as fog, dust, and others. Some of air pollutants come out of industrial sources, which are the most dangerous air pollutants, such as car exhaust, factory fumes and smokes of all kinds, as well as and radioactive contamination and fumes from explosions such as those in wars.

Air pollutants, especially man-made ones, cause massive impacts on the environment, hence comes Islam's keenness to protect the air from pollutants in order to protect the human being and the rest of the creatures.

Islam takes case of human being in all fields and prohibited smoking and the use of tobacco for its severe harm, whether by setting fire to it and sipping its smoke, chewing it in the mouth, or a snuffing it through the nose, as the origin of it is a crushing harm and a deadly poison that carries with it the death, whether it is fast and sooner or slow and postponed. Smoking causes great harm to the human being as well as to the land and plants, as well as to air.



» «Environment»: Arresting Violators of Wildlife at Thumrait, for Hunting Birds and Ghazale

The Ministry of Environment and Climate Affairs clarified that wildlife rangers at the General Directorate of Environment and Climate Affairs in Dhofar Governorate, in cooperation with Royal Oman Police, were

able to arrest a group of individuals who hunted a number of wild birds and ghazale in the Thumrait Wilayat, in two separate incidents. The Ministry indicated that the hunters were referred for investigation and

legal action against them. The Ministry calls on citizens to cooperate and report violators of wildlife. The Ministry is continuing to take all legal measures against violators without any complacency.

Qatar

An Awareness Lecture for Cleaning Workers on Coronavirus

The Ministry of Municipality and Environmental Affairs, represented by the Administrative Services Department and in cooperation with the Ministry of Public Health, organized an awareness lecture to familiarize the workers of the Department of Public Hygiene with the methods of the prevention from the new Coronavirus, the safety procedures and the guidelines of the Ministry of Public Health. This comes within the efforts, procedures, and precautionary measures taken by the State to limit the spread of the Coronavirus (Covid 19). The lecture was witnessed by Mubarak Abdullah Al-Hajri, the Director of Administrative Services Department and a number of the Ministry's employees, drivers and clean workers.

KUWAIT

Kuwait Plans to Implement Renewable Energy Projects at the Cost of \$ 3.5 billion

The State of Kuwait intends to invest \$ 3.5 billion in renewable energy projects that will be implemented within 5 years. A report was issued by the Ministry of Electricity and Water, which stated that the government aims to use clean renewable energy for 15% of its total consumption by 2030, as it seeks to reduce dependence on the currently used sources that produce pollutants for the environment, in addition to eliminating dependence on oil and its derivatives. At the forefront of these projects is the Shikaya Complex for Renewable Energy Generation, which aims to enhance the security of electrical energy and diversify its sources in Kuwait, in addition to providing non-traditional job opportunities and creating a parallel industrial economy that does not depend on the State's main income source, which is the oil. The report confirms that the planned projects are considered the largest at the level of the Gulf Countries and they will be implemented in partnership between the public and private sectors, and the ministry aspires to raise the production of renewable energy in Kuwait to about 4,500 megawatts by 2030.

UAE

Launching of an Environment Prize for Children

The Ministry of Climate Change and Environment and the Supreme Council for Motherhood and Childhood launched the "Environment Prize for Children" coinciding with the Emirati Children's Day, under the slogan of (Preserving Biological Diversity) with the aim of promoting the concept of environmental work among children, raising their awareness of it, establishing a culture of innovation, and motivating them to participate actively in The State's efforts in this field. The activities of the award will continue until November 30th.

The award specified the targeted segments and divided them into two groups. The first group from the age of 8 to age of 12 years, and the second group from the age of 13 years to the age of 18 years. The first group can participate by educational videos, short stories or drawing, while the second group can participate in all categories of the award in addition to an awareness campaign or by technical or scientific projects.

To ensure that the competition achieves its desired goals, the Ministry has created on its website a special page for the award that includes the age groups of the participants, in addition to the categories, criteria of the award and the conditions for registration. The results will be announced on the Emirati Children's Day 2021.

Bahrain

Human Resources: An Awareness Campaign to Conserve Environment and Combat Pollution

Human Resources in the Ministry of Interior organized its environmental campaign which aims at caring for and preserving the environment, which was represented in the distribution of environmentally friendly bags and guide books at Al Sukhir in the two regions of Dharq Alomer and the Dhajarat Alhayat which are of the most important land fronts in the Kingdom. The campaign aims to establish an environmental culture in society through which the importance of combating all forms of pollution, preserving the environment and wildlife is highlighted, and the campaign also aims to activate a true partnership between institutions and all sectors of civil society.

Saudi Arabia

Launching of the Annual Environmental Competition for Male and Female Students

The General Authority of Meteorology and Environment, in cooperation with the Ministry of Education, launched the third session of the Annual Competition for Male and Female Students of Schools during the period from 8 Jumada II 1441 AH to 18 Rajab 1441 AH, within the framework of the Memorandum of Cooperation between the Authority and Education. This competition comes within the framework of cooperation to spread environmental awareness among male and female students in particular and all members of society in general. The Authority has begun in cooperation with the General Administration of School Safety and Security, to receive the participations of male and female school students in all education departments in the Kingdom. The competition includes 5 categories that establish the principle of environmental protection, namely the categories of photography, electronic design and category of environmental film, as well as the best environmental innovator and the best environmental club, where each of these categories will have 10 centers for male and female students, with the aim of developing environmental thought and creating ideas among students by highlighting their posts in the various categories announced.



» The Belgian Daily «De Morgen»: Environment Temporarily Relaxes from Pollution

Environmental monitors note that pollution has diminished all over the world due to the measures taken by countries to reduce the spread of the Corona epidemic, as public transport is almost idle, as are factories, plants, airplanes, trucks, and cars that are virtually idle. This limitation of activities polluting the environment, does not take place in one country, but in most countries of the globe. «De Morgen», the Belgian daily, fears that human being will not give up his/her concept and mentality towards environmental pollution, after finishing fighting the Corona epidemic. Human behavior will not change, or rather, consumer behavior will not change. This conclusion should be understood by all those who hold the Earth's environmental concerns. Very few are the people who will start again in

their daily lives keeping in mind that preserving the environment is a preservation of the permanence of life. These difficult conditions that people go through throughout the universe will make every person practically, to experience the experience of giving up what pollutes the environment, and will also make him realize through personal experience how much he can preserve the environment, and what tasks can be performed for a better environment and harmless breathing, as the epidemic first destroys the human breathing apparatus. Despite all the available data, whether it be healthy, scientific or economic or financial, we will always encounter people who are not ready to sacrifice what they are used to in order to contribute to preserving the environment in effective and continuous ways.



» South Korea Launches an Environmental Monitoring Satellite

South Korea has announced that it has succeeded in launching the world's first geostationary satellite to monitor the environment, which it has built on its own, according to the South Korean Space Research Institute. The South Korean Yonhap news agency quoted the institute as saying that the Ariane-5 missile carrying the 3.4-ton Shulian-B satellite, which is tasked with monitoring the movement of dust and other air pollutants in addition to tides in East Asia, will reach its constant orbit which is 36 thousand kilometers above the Earth's equator, after taking off from the French Guiana base. The satellite separated

from the rocket 31 minutes after takeoff and made the first contact with a ground-based tracking center in the Australian Yatharaga region. Solar panels are placed on the Shulian-2B satellite to generate the energy needed to power its systems. The satellite is expected to reach its final geostationary orbit after about two weeks and its marine environmental mission will begin in October and all systems will be fully operational by 2021. The institute added that the multi-purpose satellite will monitor and track dust and 20 types of air pollutants, including ozone, sulfur dioxide and formaldehyde.



» Marine Animals Prevent the Risk of Water Viruses Outbreaks

A variety of sea animals can absorb virus particles while filtering and refining sea water for oxygen and food. The sponge animal is especially effective in this process. This is what marine environment scientist Jennifer Welsh of the Royal Netherlands Institute for Marine Research wrote in «The Scientific Reports», published by the Nature Group on March 23. «When a virus infects a cell, it uses its host to produce new viruses. After its release, new viruses can in turn infect more healthy cells.» Welsh told the institute's research website. However, Welsh discovered that many virus molecules at sea

- more than 150 million viral molecules in a single cup of seawater - could end up, to a large extent, as a meal for a variety of marine animals. The Japanese oyster, which is a type of water shell animal - for example - filters and refines seawater to extract oxygen and food such as algae and bacteria. While doing this, it deals with virus particles. «In our experiments, during which we did not provide any food for the oysters, and therefore only filtered and refining the water to absorb the oxygen, the Japanese oyster removed 12% of the virus particles from the water.» said Willich.



Environmental Vocabulary

The Unique

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Deep in the deserts, and in the mountains, which wear a thick dress of green trees and plants, their burrows and caves contain peaceful animals that have distanced themselves from the danger. They go out at night seeking safety, looking for food of fruits, vegetables and soft leaves, while spending their day hiding in homes as if they were not part of the nature.

This animal is unique to this distinctive shape full of thorns, and is considered one of the largest rodents in the Arabian Peninsula. It is herbivore mammal that looks a lot like a squirrel, while its short head is somewhat similar to a beaver. Its head ends with a long snout like a hedgehog and cleft like a rabbit snout. A pair of cutting teeth protruding out from the front of its jaws. Its relatively large body (about 15 kg weight, 65 cm tall, 11 cm tail) is covered with long hollow thorns ending with sharp tips, an average thorn length of up to 30 cm and striped in black and white. Its body is based on four legs, the front of which contains four fingers, while the back two have five fingers. All fingers end with very sharp claws that it uses them to dig its burrows and search for food.

Through its calm behavior and isolation from the sources of danger and its slow movement may come to mind that it is a weak and cowardly animal, but when it comes closer to the danger either from human or from its natural enemies of predators such as leopards, lynxes and wolves it uses its natural defenses. First phase of defense begins with appearing of its teeth and producing disturbing sounds terrorizing the enemy, accompanied by a jerk in the body that makes its sharp and dense thorns begin with an erection ready for use. In the event of the failure of the first phase, another stage begins to secrete a bad gas smell through the skin located in the tail to disperse the enemy. If the danger continues, this animal gathers its strength and returns back and then directs its thorns towards the enemy and attacks it in full power until some thorns separate from its body and insert into the body of the enemy to cause unhealed wounds that may lead to death. Each thorn separated from its body is regenerated with another one to continue its role in the defense and protection system. In its social behavior, a male chooses one female to form a family. The female gives birth to between 1 and 4 young after pregnancy of up to 210 days. The young are born open-eyed at the size of a rat with soft thorns and then hardened after 10 days. Its life span lasts up to 20 years.

This rodent animal which is called Porcupine has many names in Arabic. Its presence in Oman is limited to the province of Dhofar and in Jeddah al-Harasis. It may not know much, but those who see it for the first glance with its unique crowned body, definitely distinguish it even from afar distance, so its image remains stuck in the minds, cannot be erased through times and eras.

Acid Rain

Acid rain is a form of air pollution. When coal and petroleum are burned in factories, they release certain harmful gases into the air.

These gases combine with the oxygen and water in the air. They form harmful acids.



When the water in the air comes down as rain, it carries with it these acids.

Acid rain can pollute lakes and streams, killing the fish and other organisms that live in them.

Acid rain also damages various kinds of vegetation, including farm crops and trees.

Acid rain is very damaging to all life forms.