



The National Field Research
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Conservation

About innovative Environment Research

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Sultanate of Oman
Diwan of Royal Court

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The Dhub

**Protection of One Species
is Protection of All**



point of view

Our Environment is Life

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Life may be beautiful with money, wealth and position. It may be beautiful when you realized all your dreams and aspirations, but it will definitely be more beautiful by all standards, if it is clean and free of all types of contaminants. For the clean environment provides you with a happy life and psychological, social and economic stability, even if you do not possess money, and vice versa.

"Our Environment is Life" is a slogan that embodies a extensive and intensive meaning of everyday life as realized in the Sultanate's celebration of the Omani Environment Day which falls on the eighth of January each year. Environment with all of its Bio and human systems is really our life. It is the source of our survival and continuation. To keep our environment from degradation and depletion is the duty that all members of the community must meet and work for it. That is because the environment general sense is the crucible in which we live and influence and are influenced on daily bases, as far your influence (positive or negative), as directly your daily life will be influenced.

Environmental approach in the Sultanate is balanced between development requirements and the preservation of environment and natural system. This is consistent with the guidance of His Majesty Sultan Qaboos bin Said - may God protect him - who is always keen to have a positive balance between development and the environment. This is what made those responsible for the environment in the Sultanate to exert unremitting efforts to achieve the lofty vision and insight in this area.

The logo "Our Environment is Life" must touch every one of us. We all must work to translate this logo into reality. The individual is the basis and foundation of society so environment is ours, all of us. Keeping it by all means, we will enjoy happily life free of contaminants. As well, we must adapt our words with our actions in this aspect and to be the perfect role model for our children. We must instill in them the positive values of love to the community and to its development. The clean healthy environment is a way of life for us and our future generations.

Presenting the "the Green wadies" Initiative

The National Centre Celebrated "the Tree Day" by Taking Part in "A Mother By its Bestowal"



Wrote: Hussein Al Qasimi
Photography: Abdullah Alsabei

The National Field Research Centre for Environmental Conservation celebrated the Tree Day, which falls on October 31 of each year, where the National Centre participated in the exhibition organized by the Plant Group of the Collage of Agriculture and Marine Sciences at Sultan Qaboos University. The Tree Day was under the auspices of Dr. Rahmah Al Mahrouqiah, SQU deputy vice chaneler for postgraduate studies and research. The Day Logo is (A Mother By its Bestowal). The National Centre participated by a working paper on the (the Green Wadies) Initiative which recently has been launched by cultivation of local wild trees in the edges of the Wadies, in order to save the various Wadies in the Sultanate from the phenomenon of desertification by restoring the natural ecological balance, thus achieving environmental, tourist and awareness goals, as well as economic, social and sports goals. The exhibition included a number of events and workshops that addressed the importance of farming and tree-related projects, as well as the marketing of agricultural products, and other promising agricultural projects.

.. And take part in the Third Arab Forum Scout

The National Field Research Centre for Environmental Conservation in the Forum Arab Scout III, which was organized by the Directorate General for Scouts and Guides in collaboration with the Arab Scout Organization attended by a number of experts in youth issues, and representatives of the World Scout Organization, the Committee Arab Scout, and the organization scout the Arab and the Islamic Organization for Education science and culture "ISESCO", in addition to the participation of 70 young Arab leaders, official representatives of the Arab Scout associations, at Sultan Qaboos scout camp: Al Maladdah wilayat Al Musanah, under the auspices of Mohammed bin Abdullah Al Farai sub-prime Minister of Education Office, where countries participated offer aside from its cultural heritage and civilization during the forum.

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In its Celebrations of the Environmental Day, the Sultanate Raises the Slogan of Our environment is Life

On January, 8th 2017, the Sultanate celebrated under the slogan (Our Environment is Life), The celebrations activities were launched from Albraimi Governorate, to include all governorates of the Sultanate. celebration of this day comes as incarnation of the Royal Orders of His Majesty Sultan Qaboos bin Said, may God protect him, to allocate the eighth of January for the celebration of the environment in the Sultanate of Oman. The day was celebrated for the first time in 1997, in the context of the Sultanate's efforts to increase awareness about protection of the environment, combating causes of pollution and conservation of natural resources. From then on, the day has become an annual event devoted for celebrating the achievements of the Sultanate on the official and private levels, in the field of environmental protection. This represents a strong support to the ongoing environmental successes made by the workers in area of the Omani environment protection.

Various Events, Activities and Forums in all the Sultanate Governorates aimed at Public Participation

cooperation with (the Green Nest) team at the Faculty of High-tech, as well as planting some trees (the Trees Initiative).

Musandom

At Musandam, a labor camp for planting wild trees was organized, as well as the gallery of the open day for environmental awareness, a case study on the type and number of environmental waste in the province during the year 2016, plus seminars and lectures on environmental awareness.

Al Batinah South and North

At Albatinah South, an open day was organized in Al Hazm Fortress, as well as a campaign to clean up the reef at Dimaniyat Islands Nature Reserve and cleaning campaigns in the province in collaboration with sports teams. There was also a campaign for planting wild trees within the Omani (Trees Initiative).

Al Dakhilyah

In Al Dakhilyah province campaigns for planting wild trees and campaigns for environmental awareness, as well as entertainment contests related to the environment (innovations in which natural ores were used to love for environment). There was also a campaign for cleaning the valleys and a session to meet with the people and the elders of the Wilayat to educate them on wildlife preservation and preservation of natural resources. An innovation artistic work was designed by using environmental raw materials to express the concept of the Omani Environment Day (the anniversary of the signing of the environment day).

Al Sharqyah North and South

In Al Sharqyah North Governorate, trees were planted within (Ashjar Initiative). Work camps were erected to clean sandy areas. As for Al Sharqyah South, there will be a campaign for removing the Masquite Trees as well as planting wild plants in several places. There also will be the contest of the (Photo of Most Beautiful Old Tree).

Dhufar

In Dhufar, there was a campaign for leaning the Addheries beach in partnership with the private sector and coordination with the Dhofar Municipality. A set of wild tree was planted in a fenced area belongs to the Directorate with the participation of the Indian and Pakistani schools there. As well, there was planting for a number of wild trees within (Ashjar Initiative).

Al Wosta

At Al Wosta Governorate a campaign was also set up for cleaning Al ghuss and Film beach and another for cleaning Rass madrasah beach. Wild trees also were planted. A third campaign was there for cleaning Khor Ghawi, as well as there was a cultural event with variety of entertainments.



Al Buraimi

The Sultanate's celebrations of its Environmental Day was launched from the theater of Directorate General of Education in Al Buraimi Wilayat. The day started by operetta medley presented in lyrical passages on environment performed by a group of school students, poetry readings in form of environmental dialogues, as well as a video display on environmental issues from Al Buraimi governorate. Then came the passionate art Alayala. There were also other activities which accompanied the celebration day. There were six workshops on Waste Recycling, where 100 teachers and some students' mothers and 50 children will receive training.

Muscat

In Muscat Governorate, at Qurum Natural Reserve, awareness lectures on cleaning of the Natural Reserve from waste, the removal of invasive plants on the Omani environment, as well as roaming within the Natural Reserve across the wooden aisle for bird watching and watching marine organisms that live in the reserve. That was in addition to an open day of beaches cleaning for people with special needs. There also will be an environmental camp in

**Extinction of
Dhub Threatens
Biodiversity
and the Food
Chain at its
Whereabouts**

Dhub

Protection of One Species is Protection of All

The spiny tailed lizard



The National Field Research Centre for Environmental Conservation conduct a study on the status of Dhub biodiversity (a type of Dhub truck tail) where the research focused on the importance of The Dhub and its burrows in enriching biodiversity in its whereabouts. This represents a great value in the chains of food at such places. Dhub 's burrows constitute a natural habitat for a range of organisms which have great importance in maintaining the food chain. Researchers proved through their study, that the extinction of Dhub could threaten biodiversity in the research area. That why the researchers of the National Centre summarized the results reached in the message: "Be keen to protect one species in order to protect all species."



Recommendations

To address the unsustainable hunting operations of truck tail lizards or Dhub, the research team of the National Centre has recommended the following management strategies that they hope will help to secure the survival of this species in the future:

- To raise awareness about the importance of Dhub in the process of biodiversity promotion and the preservation of health ecosystems.
- To grantee protection / great situation of care/ for Dhub, a help of the public, guards and hunters and tourists.

Information and Facts

There are about 17 different species of The spiny tailed lizard Dhub (The Dhub) which live in a vast region extending from the far reaches of West Africa to Somalia, the Arabian Peninsula, Iran, Pakistan and India. There are 6 species of The spiny tailed lizard in the Arabian Peninsula. The Dhub bears the scientific name (Uromastix SPP). It is vegetarian animal. The length of Dhub is 75 to 80 cm. The average weight is 2kg. Its color changes with the change of temperature. It uses its heavy tail to defend himself and also to cover or fill its hole. It can live in an elevated area reaches a height of 1000 meters. Dhub female lay 5 to 40 eggs with an incubation period of 70 to 80 days. It gets its needed water from the plants. This kind Dhub is often used in the pet trade.

Dhub Burrows

Dhub burrows are generally characterized by a large central opening for entry and exit and several smaller holes close to the central aperture. Burrow diameter



- To stop driving over the territory where the Dhub live to avoid exposure of their dens to damage.
- To continue conducting researches on aspects such as the number of Dhub, its migration, diet system, nests building as well as taking sampling of Dhub on distances bases.





generally ranges between 2 to 3 meters. By measuring, it is found that the relative depth of the burrow ranges from 2 meters to 3 meters. A Dhub designed its burrows in such way it maintain high relative humidity throughout the year which enable to adapt harsh environment.

The Importance of Burrows

A variety of living organisms was hunted by traps, including kinds of invertebrate species belonging to different trophic levels. This shows the importance of Dhub burrows in the food chain. Traps were set up and the following types were recorded: herbivore, beetles, stock conclusive ants, straight wings insects, residue eaters, wood lice, the Russians beetles, termites, carrion eaters, flies, beetles, predators, scorpions, spiders, Centipedes, wasps, beetles, pollinators, flies, bees, wasps, sap vampires, aphids, mites, parasites, ticks and wasps.

Much larger numbers of rats were monitored in the Dhubs burrows, compared to the controlled areas, which indicates that rats permanently come to the burrows, perhaps because they provide hiding place from predators and heat. There was no difference in the cases of foxes monitoring to a large extent. It can be assumed that the presence of the rat more often, would attract foxes to these sites.

It is noted that some of the animals involved in this Dhub burrows or around them, include some spiders and Dhub s, but the firm coexistence relationship is that of Dhub and black scorpion, where the Scorpio provides protection for Dhub from its enemies and the Dhub provides shelter and some prey for the Scorpion occupy about 20-50 cm at the beginning of the burrow where they feed on insects and other preys.

A preliminary statistical analysis carried out on a number of cases, caught by traps using dual sampling tests (t-test), shows that the total number of insects in the test sites was significantly greater than the total numbers in the areas under the control. As well, the density of the species which is considered as a measure of biodiversity, was much higher in the sites than the sites subject to control.

Threatened with Extinction

Kinds of Dhub are listed in the Appendix 2 of the Convention on International Trade with the types of wild animals and plants threatened with extinction (CITES). As well, Dhub is categorized in the List of the International Union for Conservation of Nature and Natural Resources as endangered species.

Dhub numbers have seen a decline over the past 15 years by up to 30%. Some of the major threats to the Dhub include the strong activities to collect this animal for food and "medical" purposes in Asia, as well as the loss of habitat of its living due to overgrazing, human settlements, agricultural expansion, dumping of solid waste, off road vehicles traffic and quarrying for gravel and construction materials.

Dhub has a relatively slow period of evolution. So the hunting of which on widely scale, severely affect its numbers. Dhub is likely to face the threats of hunting on a large scale in the Sultanate as well. The fact that a large number of other species rely on the Dhub for shelter, makes reservation of Dhub highly important endeavors.

- ◆ **The National Field Research Centre for Environmental Conservation, Dhub Study and its group**
- ◆ **Its Burrows Constitute Natural Habitats for a Group of Organisms Which Keep the Food Chain**
- ◆ **There are about 17 Different Kinds of Dhub Which live in a Sprawling Area In the world**



- ◆ **It is one of the Grass Eating Animals Ranging from 75 to 80 cm in Length, and Its Color Changes by the Change of Temperature**
- ◆ **A Variety of Living Organisms Have Been Monitored in Research Area Belonging to Different Nutritional Levels**
- ◆ **Dhub s are reptile pets. Vegetation and geology can affect the intensity of their numbers**

British Scientists monitored migration of 3500 billion insects

Using a special radar system and air nets supported by a balloon, British researchers monitored 3,500 billion insects, weighing together 3,200 tons, migrate annually, flying over an area of South-Central England. Insect expert at Exeter Jason Chapman University, who published his team research in the journal «Science», said that the migration of insects flocks at high altitudes, is a huge process which does not get its share of scientific interest and is the largest annual movement of animals in the earth's ecosystems, and only compares with the major migrations of animals and plankton in the oceans.

Unfamiliar Hot Air is in the North Pole

Climate scientists informed that temperatures in the Arctic have risen to close to the melting point yesterday, as a result of an unfamiliar surge of warm air on the area which used to be at this time of year in complete freezing during the darkness of winter. The Norwegian Institute of Meteorology estimated the air temperature in the Arctic by four degrees Celsius below zero at noon amid falling of light snow, while the familiar heat at this time of year is estimated at thirty degrees below zero. A buoy floating in the Arctic Ocean, to the north of the Norwegian island of Spitsbergen recorded the temperature at zero yesterday. This year is the warmest on record across the world as a result of greenhouse gases emissions and the weather phenomenon (El Niño) in the Pacific Ocean.

A Scottish Research... Hyperthermia Push Birds to Emigration

According to a research conducted by the University of Edinburgh in Scotland, Migratory birds reach their summer breeding areas earlier by average of one day with degree one degree rise of temperature. The study included hundreds of species of birds in the five continents, to help scientists predict how different bird species will respond to environmental change in the future. It is likely that reaching the breeding areas at the wrong time, even by a difference of a few days, may lead to non-availability of the maximum possible food and nesting places. On the other hand, late arrival may result in hatching disorder and reduce the chances of survival for chicks. The study pointed out that,

migratory birds which fly over long distances may suffer more than others, because other types of birds would be ahead of them and realize gains from earlier access to the breeding areas. Takuji Usui, from the School of Biological Sciences at the University of Edinburgh, said that a lot of plant and animal species alter the timing of activities associated with the beginning of spring events, such as flowering and hatching. He added: "Now we have detailed insights on the way the timing of immigration changes, and how this change varies between species of birds. Perhaps such insights help us to predict how migratory birds adapt to changing conditions in the spawning areas."



Experts warn: Cheetahs are In highly endangered

A research led by the Zoological Society of London showed that the Panthers from Chita type. Which are the faster wild animals in the world, are In danger of extinction because of shrinking habitats. The study conducted by the Zoological Society and the Wildlife Conservation Society Banthera for Tigers Protect, stating that, after the decline in their numbers, there are only 7100 of this kind of animals in world and that is equivalent to nine percent of the historical number. Because of these pressures, the study found that in Zimbabwe, the numbers of these leopards have fallen by 85 percent from 1200 to 170 leopards at the latest, in only 16 years. Experts calls for the classification of these leopards as "In Danger of Extinction" instead of "Endangered" to have the largest environmental protection.

Coral Reefs in the World Would Face for (Bleaching) Over the Next 26 Years

A newly published study concluded that most of the world's coral reefs will begin to face the bleaching process annually over the next 26 years. A statement of the United Nations Environment Program said that, "If this trend continues, the world will fail to reduce Greenhouse gas Emissions, and 99% of the world's coral reefs will undergo severe annual bleaching process during this century." The study said that coral reefs in Taiwan and around the Turkish and Caicos archipelago will be among the first coral reefs in the world that witness annual bleaching process, while other coral reefs, such as those found off the coast of Bahrain, Chile and French Polynesia will be exposed to the process of bleaching after decades. The study found that the world's coral reefs will begin to be under threat of a yearly bleaching process in 2043.



Armed Conflicts are Disastrous for Wildlife Diversity and a Cause for Ecological Balance Disruption

Environment scientists concentrate on the impact of wars and armed conflicts on wildlife on the grounds that the weapons, of all types and hostilities, destruct all resources and elements of nature, being plants or animals. As well, such wars and armed conflicts disrupt the natural balance and eliminate it. Results of a US study on the negative impact of armed conflicts on wildlife, present some direct and indirect negative consequences caused to the environment by war which destroy the life. Newspapers have reported that a group of American scientists from the University of "Berkeley"

in California, published the results of a study, they conducted on 144 armed conflicts in the world, ranging from local clashes to comprehensive and war, where they pointed out that the proliferation of weapons leads to wild animals killings in the conflict zones. In the study published in the scientific journal "ESA Frontiers", they have shown that the wildlife in the mentioned areas fall victim to bombs, chemical weapons, and mines, in addition to the conduct of military battles, plans and stationing of soldiers and militants in certain points, all that adversely affect the environment.