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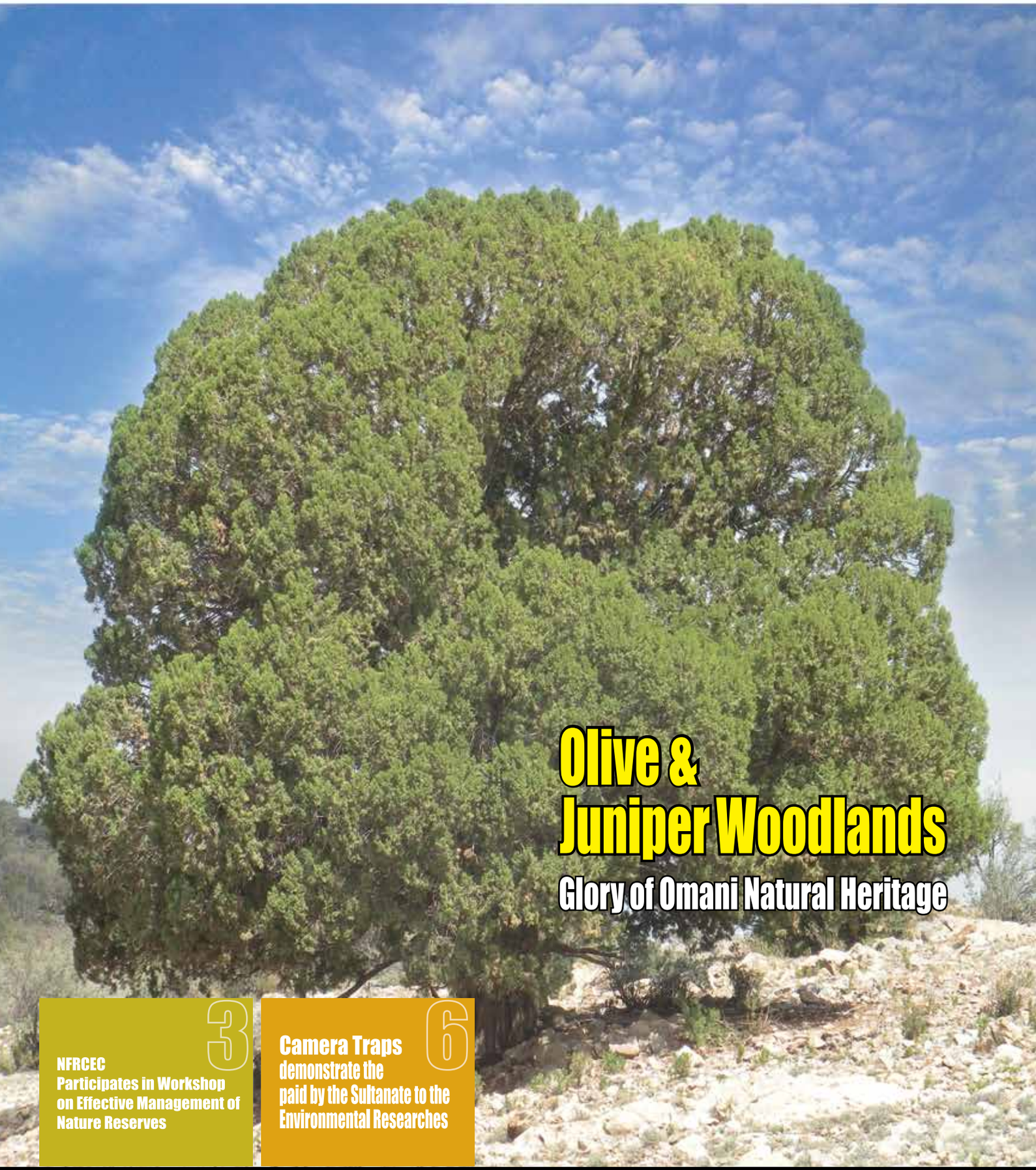

Olive & Juniper Woodlands

Glory of Omani Natural Heritage

Nizwa University Students give presentation on collaborative research with Mobile Field Unit

A group of female students from the University of Nizwa (UoN) gave a visual presentation at the meeting hall of the National Field Research Centre for Environmental Conservation (NFRCEC) about their participation (and learning experience) in the environmental study conducted at the Al-Saleel Nature Reserve by the mobile field unit of NFRCEC in collaboration with Earthwatch. The students presented vivid details about their field experience including learning outcomes and the approaches and methods employed by them in the process of surveying various animals including Gazal, small mammals and insects found in the reserve. In addition, they spoke about skills they learnt during the field research program such as setting traps for small mammals and insects, and also the process of inventorying the numbers, types and species of various species of animals, mammals and insects. It is worth noting that the Mobile Environmental research Unit of NFRCEC regularly holds studies on the rich biodiversity of Al-Hajar Mountains in collaboration with Earthwatch by organizing research and training camps focusing on mammals, reptiles, plants and birds. The Centre also organizes field visits for university and college students in a bid to promote the spirit of scientific research in the Sultanate. Through such initiatives the Centre seeks to establish a database on the habitats of various species so that the process of monitoring the future impacts of climate changes on them can be studied more efficiently.

Kyoto Protocol

After the signing of the UNFCCC treaty, Parties to the UNFCCC have met at conferences ("Conferences of the Parties" – COPs) to discuss how to achieve the treaty's aims. At the 1st Conference of the Parties (COP-1), Parties decided that the aim of Annex I Parties stabilizing their emissions at 1990 levels by the year 2000 was "not adequate", and further discussions at later conferences led to the Kyoto Protocol. The Kyoto Protocol sets emissions targets for developed countries which are binding under international law. The Kyoto Protocol has had two commitment periods, the first of which lasts from 2005-2012, and the second 2012-2020. The US has not ratified the Kyoto Protocol. The Kyoto Protocol has been ratified by all the other Annex I Parties.

All Annex I Parties, excluding the US, have participated in the 1st Kyoto commitment period. 37 Annex I countries and the EU have agreed to second-round Kyoto targets. These countries are Australia, all members of the European Union, Belarus, Croatia, Iceland, Kazakhstan, Norway, Switzerland, and Ukraine.[13] Belarus, Kazakhstan and Ukraine have stated that they may withdraw from the Protocol or not put into legal force the Amendment with second round targets. Japan, New Zealand, and Russia have participated in Kyoto's first-round but have not taken on new targets in the second commitment period. Other developed countries without second-round targets are Canada (which withdrew from the Kyoto Protocol in 2012) and the United States.

As well as the Kyoto Protocol, parties to the Convention have agreed to further commitments. These include the Bali Action Plan (2007), the Copenhagen Accord (2009), the Cancún agreements (2010), and the Durban Platform for Enhanced Action (2012).

Sultanate ratified the protocol in 2004 under the Royal Decree No. 107/2004.

Oman take advantage of the Protocol in the implementation of a national survey of greenhouse gas emissions from different sectors in the Sultanate, and create its own database.

point view

Our Environment is our Home

Dawood bin Suleiman Al-Balooshi
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The Sultanate celebrated the Omani Environment Day that falls on the 8th of January, with the slogan this year being "Our Environment is our Home". This significant national occasion is commemorated annually as per the Royal Directives issued by His Majesty Sultan Qaboos bin Said (May Allah keep and protect Him). It may be noted that the Sultanate marked the first Omani Environment Day way back in 1997. The celebrations over the years reflect the Royal attention paid by HM to the Omani environment, and the necessity of protecting the environment and conserving its natural resources. The occasion is an affirmation of the wise insight of HM's Royal vision that called for a balanced approach to the country's development plans, incorporating environmental protection into the development framework. Such a planned development brings about environmental sustainability, ensuring the all-round welfare and progress of all communities. The Sultanate successfully implemented major plans and strategies towards achieving environmental sustainability in all the governorates of the Sultanate over the decades beginning with the Blessed Renaissance. Such projects are implemented through various environmental programmes and awareness initiatives, which have the objective of striking a balance between the accelerating development requirements and conserving the elements of nature so that no aspect might threaten the other.

Our country has always focused on ensuring the health and wellbeing of its people along with environmental conservation, and this has been achieved by enacting relevant environmental laws and legislations, implementing effective programs and projects, intensifying environmental education and awareness programs, and collaborating with international environmental organizations and agencies. The Sultanate is also party to several regional and international agreements and treaties on environment. Today various Omani governmental and private entities collaborate with community organizations in carrying out a host of programs and activities that ensure sustainable community development.

The slogan "Our Environment is our Home" emanated from the vision of our beloved Leader who strongly believe that conserving the environment is the shared responsibility of all people, and as such communities across sectors and categories should work together to fulfill that responsibility. The slogan confirms that the environment is our home and it belongs to everybody without exceptions. To conclude, individuals, communities, government and private entities and civil organizations are all required to exert more efforts to conserve the environment with all its elements and natural resources. This year's Environmental Day slogan embodies the continuous and mutually enriching relationship between human beings and the environment. It confirms that our environment is our real home.

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The National Field Research Centre for Environmental Conservation (NFRCEC) has participated in organizing a workshop on Effective Management of Nature Reserves which was organized jointly by Oman National Commission for Education, Culture and Science (ONCECS), in collaboration with the UNESCO Office in Doha. Apart from NFRCEC officials, the workshop witnessed the participation of experts from Jordan's Royal Society for the Conservation of Nature (RSCN). They spoke about the effective management of nature reserves and how to prepare nomination files for the Man & Biosphere Program (MBP) under the auspices of Dr. Saif bin Rashid Al-Shaqasi, Executive Director of the NFRCEC.

Under the auspices of Dr. Saif Al-Shaqasi

NFRCEC participates in Workshop on Effective Management of Nature Reserves

Specialists in the field of nature reserves management and biodiversity from NFRCEC, Ministry of Environment and Climate Affairs, Ministry of Tourism, Ministry of Regional Municipalities and Water Resources, Sultan Qaboos University, and the Environment Society of Oman (ESO) contributed to the discussions at the workshop.

A discussion on the unique characteristics of man-made reserves, nature reserves and biospheres was also held as part of the programme. The criteria for classifying such reserves under UNESCO's MBP program were also highlighted at the workshop. Moreover, the workshop sought to acquaint the participants with how to fill in the UNESCO application form to bring additional nature reserves under the MBP program. The workshop greatly contributed to increasing awareness about the Man and Biosphere Program.

Brief Background

The UNESCO launched the Man & Biosphere Program (MBP) in 1971 towards enhancing efforts at protecting and conserving nature. It is an academic program that links various international government organizations. The program aims to promote constructive relations between human beings and the biosphere through the Global Network for Biosphere Reserves (GNBR). Statistics indicate that more than 651 biosphere reserves spread across 120 countries have been registered under this global network, including 28 sites in 11 Arab countries. This network is considered to be a means to share knowledge, conduct researches, build capabilities and promote successful as well as best practices in biosphere reserves management.

Working papers

The agenda of the workshop included presenting two working papers. The first working paper, entitled "An Introduction to the Man and Biosphere Program", was presented by Yahya Khalid, Director General of the Royal Society for the Conservation of Nature (RSCN) at the Kingdom of Jordan.

Mr. Yahya outlined the major features of the Man and Biosphere Program, in addition to describing the benefits and opportunities offered by the program. He also reviewed the difference between nature reserves and biosphere reserves. Mr. Mohamed Zarour presented the second paper entitled "The Standards and Specifications" which dealt with the specifications and standards of biosphere reserves. The participants also highlighted the Man and Biosphere reserves by presenting working papers which apart from focusing on the administrative considerations related to biosphere reserves and the areas surrounding them, highlighted the need and mechanism of incorporating biosphere reserves into national development plans. UNESCO's periodical review system for bio reserves was also discussed at the workshop.

Significantly, the participants made a field visit to the Landscape Nature Reserve at the Jebel Akhdar with the objective of identifying the vegetation there. They also reviewed the major field research projects conducted by NFRCEC including the study on Olive and Juniper trees, as well as the study on the types of birds at the nature reserve.

UN CHIEF WANTS CLEAN ENERGY INVESTMENTS DOUBLED BY 2020

The U.N. secretary-general on Wednesday challenged investors around the world to at least double their investments in clean energy by 2020, saying that "we must begin the shift away from fossil fuels immediately." Ban Ki-moon told an investor summit on climate risk that increasing investment in clean energy is critical in following up on the landmark agreement to tackle climate change reached in Paris last year. Ban said about $330 billion was invested in clean energy last year, but that is far from what he calls the «clean trillion» needed per year in the decades to come. The U.N.

MAF FIXES NAVIGATIONAL BUOYS IN SOHAR

The Ministry of Agriculture and Fisheries (MAF) has completed the task of fixing guiding navigational buoys with a total cost of 42 thousand Omani Riyals at an important marine in the Wilayat of Sohar known to the fishermen as Jebel Al-Tahr so as to protect the marine environment and the coral reefs sites at the area. The site is famous for its coral reefs, seaweeds and rock outcrops that attracted different marine organisms. This made the site one of the most important fishing sites at Al-Batinah North Governorate generally and at the Wilayat of Sohar in particular. A large number of fishermen benefit from fishing in this site.

wood land Study focuses on Itm and Al alan

Olive and Juniper Woodlands

Glory of Omani Natural Heritage

The Omani olive (Itm) and juniper (Al›alan) trees, prevalent in the western part of the Hajr Mountains, represent the unique richness of the Omani natural heritage. These rare trees that belong to the pinales species however, are on the decline. Previous studies have clearly shown that the number of juniper trees continues to drop as they are slowly dying with no replacements (Gardner and Fisher, 1996), while olive trees too are at significant risk (Al-Jamie, 2004).

Preliminary:

- The increasing temperature and decreasing fog during the last thirty years change the environmental conditions suitable for the growth and propagation of plants.
- The Jebel Akhdar has some rare wild plant species including the well-known plants in the western Hajar Mountains.
- Grazing helps in the propagation of plants that are not suitable for grazing and its prevalence in the ecosystem of the Jebel Akhdar.

In response to the risk of extinction of these trees, the National Field Research Centre for Environmental Conservation (NFRCEC) launched a project to study the woodland in Jebel Akhdar and Jebel Shams. The primary objective of the project is to coordinate the efforts of various stakeholders and involve community members in preserving Omani olive and juniper trees through integration of the results of scientific research and local knowledge towards the creation of a sustainable ecosystem.

The first step in the development of this sustainable eco-system is the assessment of the status quo, and identification of the risks to the safety of these trees.

Assessment

The first phase of this project assessed the woodland and collected data on plant conditions, environmental factors and the extent of human influence to determine the threats that Omani olive, juniper and other plants face. Further, it aimed at involving community members in addressing these risks and providing remedies thereof.

The assessment found that many Omani olive and juniper trees in Jebel Akhdar are damaged, though there are some healthy trees in a few areas such as Heil Al-Jawari in Jebel Shams.

Study Location

Omani olive and juniper trees in the Sultanate exist only in Jebel Akhdar and Jebel Shams, two summits that are part of the Western Hajr mountain range. Jebel Shams is the highest peak in Oman at 3009 m above sea level while Jebel Akhdar is 2500 m high. These high altitudes offer a suitable environment for these unique trees that do not grow at heights less than 2100 m on the southern sunny slopes and 1600 meters in the lush shadowy northern slopes. This high-rise environment is quite different from other environments in the Sultanate with average temperature hovering around 18.5 degrees Celsius compared to 29.5 degrees at lower altitudes.

Previous researches about Vegetation

This project, which proceeds from previous researches of some scientists, aims to complement such researches about the Olea Europaea and Juniper trees. Some previous data are mentioned below:

The center aims to develop a sustainable system to maintain Alatm trees and Alalan in oman

The nineties of the last century: Gardner and Fisher were the first scientists to conduct a detailed research about the Olea Europaea and Juniper trees in the Sultanate in 1996. Those two scientists started their research by conducting a general evaluation for some 2000-meter-high mountain peaks to identify the sites where coniferous trees grow, their integrity and safety.

At the beginning of the new millennium, this project has carried out the Jebel Akhdar initiative to evaluate natural resources and ecology in the Jebel Akhdar in 2007, in what was called (the Jebel Akhdar Initiative 2007). It came out with the following main findings:

Plants: There are some rare wild plant strains in the Jebel Akhdar including 9 well-known plants in the western Hajar Mountains.

Climate: The studies has recorded an increase in the temperature and a decrease of fog at the Jebel Akhdar since 1987.

Cattle: Overgrazing affects the Jebel Akhdar's environment due to the poor status of pastures, the propagation of plants that are not suitable for grazing at most of the areas (as well as overgrazing of plants that are suitable for grazing).

These findings highlights the importance of the Trees Nature Reserve for environmental diversification in the Sultanate. It also explains the factors that endanger such nature reserves, including the increasing temperature and decreasing fog. The findings also explain the effect of these factors on vegetation. Oman Oasis Project: Researchers from different universities took part in this project to study agriculture in the Jebel Akhdar. Some efforts have focused on cattle and pastures management, including the areas where the Olea Europaea and Juniper trees grow. This research project concluded that grazing helps the trees that are not suitable for grazing to propagate and prevail in the ecological system of the Jebel Akhdar (Brinkman et al 2009, Decofair et al 2010).

Completing the Previous Researches

The current evaluation of vegetation is unique in terms of its size and comprehensiveness. The status of Juniper trees has never been previously evaluated in all aspects. In addition, an evaluation of all trees related to the Juniper trees in a mountainous environment has never been conducted before except in the study conducted by Fisher and Gardner in 1995. By addressing all aspects of the topic, this project, conducted by the National Field Research Centre for Environmental Conservation (NFRCEC), links all aspects of researches related to vegetation, including the Olea Europaea and Juniper trees and the other remaining trees together. It also addresses the effect of grazing and the use of natural resources by local residents as the evaluation the entire ecosystem constitutes the bedrock for building a sustainable framework for conserving the environment.

Components of Vegetation and the Biodiversity Study

Some sites have been chosen to study biodiversity in various areas of the Jebel. The sites have been carefully selected to identify the vegetation patterns because they represent various environments and altitudes in the Jebel Akhdar. The research team tended to evaluate the shrubs, herbs and grasses at each site using a typical square covering an area of 10 x 10 square meters. At this area, the number of each strain of plants is recorded. As for the big trees, a bigger typical square covering an area of 20 x 20 meters, is used. These squares are utilized in identifying the species and strains of plants that grow at each site. Some variables have been collected and analyzed at each site including the type of environment, altitude, soil and organic ingredients.

BE›AH EMBARKS ON AN AMBITIOUS PROJECT FOR RECYCLING THE BUILDING WASTES

Oman Environmental Services Holding Company S.A.O.C "be'ah" intends to benefit from the building and construction wastes in the road projects scattered across the Sultanate. In addition, it intends to equip the construction wastes transportation vehicles with tracking devices to prevent dumping the wastes in the places not allocated for this purpose. The company focuses currently on treating the materials resulting from the building and demolition wastes; which haunt everybody now considering that the process of getting rid of such wastes does not comply with the approved environmental legislations.

ECORD HIGH ARCTIC TEMPERATURES HAVING ‹PROFOUND EFFECTS› ON REGION

The Arctic experienced record air temperatures and a new low in peak ice extent during 2015, with scientists warning that climate change is having "profound effects" on the entire marine ecosystem and the indigenous communities that rely upon it. The latest National Oceanic and Atmospheric Administration (Noaa) report card on the state of the Arctic revealed the annual average air temperature was 1.3C (2.3F) above the long-term average – the highest since modern records began in 1900.

WORLD›S FIRST TO COMPLETELY OPERATE ON SOLAR POWER

Cochin International airport , the country›s first airport built under PPP model has scripted another chapter in aviation history by becoming the first airport in the world that completely operates on solar power. Now, Cochin airport›s solar power plant is producing 50,000 to 60,000 units of electricity per day to be consumed for all its operational functions, which technically make the airport ' absolutely power neutral '.

The NFRCEC has achieved many dazzling results by using them

Camera Traps

demonstrate the Attention paid by the Sultanate to the Environmental Research Technology

Said Al-Rashedi*

The camera trap technique demonstrates the technical support provided by the Sultanate for the research entities specialized in environmental fields, headed by the National Field Research Centre for Environmental Conservation (NFRCEC). This support enhances the accuracy of results and expands the circle of subjects covered by researches. Camera Traps also contribute into achieving the task of researches within the shortest period with more accuracy. They reduce the efforts exerted in following up and analyzing the results.

The Beginning

Camera Traps are considered to be one of the most modern techniques used in demonstrating, following up and monitoring the existence of biodiversity for long periods of time.

This technique was used for the first time by hunters and rare animal traders to help them in hunting such animals. After that, researchers and experts sought to use such technique in monitoring some timid or nocturnal active animals that force the researchers to exert a lot of efforts to get evidaence on its presence in their natural habitats. This has contributed into discovering a lot of new species and other species that were not expected to exist. These cameras are fixed in many areas like Assarain Nature Reserve, Al Saleel Nature Reserve, Jebel Qahwan Nature Reserve, Jebel Samhan Nature Reserve; in addition to the Jebel Akhdar. There is a plan to increas the number of areas covered by these cameras. The findings of such practices indicate that there are healthy groups of animals that live in such areas.

Characteristics

Since the beginning, the NFRCEC has worked on using the Camera Traps in many protected areas and the areas in which the wildlife is expected to exist. About 30 trap cameras scattered ar the important biodiversity areas have been fixed. These cameras monitor the wildlife at these areas since more than 3 years and half. One of the technical advantages of these cameras is that they can work continously for a period up to 6 months without any need for maintenance. They can also capture more than 8000 photos or what is equal to 6 hours of visual (video) recording without stoppage.

Results

These trap cameras have managed to monitor the daily life of many timid animals that flee away from the human beings like the Arabian Tahr; the nocturnally active animals like foxes and wolfs or the predators like the Arabian leoperd through sensors that interact with the slightest movement in front of the camera traps angle up to a range of 15 meters. This technique has also enabled the researchers to study the behavior and activities of many animals during the day hours. In addition, they have an important role to play in rounding off the number of animals that could be distinguished by the prints of their fur. The cameras also contribute into defining the organism's scope of movement. There are new versions of such cameras that work on the solar power and send the new photos without any need to refer to them periodically.

The NFRCEC discusses the journalistic writing arts

The National Field Research Centre for Environmental Conservation (NFRCEC) discussed the journalistic writing arts in a training course held at the headquarters of the Centre. The course, entitled "Modern Journalistic Writing", was presnted by Mr. Khalid Al-Adawi, a journalist at the local desk in Oman Daily Newspaper. The lecturer identified the participants with the beginnings of the Omani journlism; types of journlism in terms of the size, publication and timing; the methods of writing the news stories; the professional academic basics of journalisms, in addition to the problems facing journalisms and how to confront them.