

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Affiliated to Visvesvaraya Technological University, Belagavi Approved by AICTE, New
Delhi & Recognised by Government of Karnataka)
Shobhavana Campus, Mijar – 574225, Moodbidri.
Dakshina Kannada Karnataka, India.



A Report on SRISHTI

-The Nature Club



ACADEMIC YEAR 2015-16

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1	09/09/2015	Inaugural talk by N.A Madhyastha
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SRISHTI- The Nature Club

About the Club:

Human being is one among the dependent species of the world. He needs valuable natural resources such as water fruits minerals etc for his living. He also depends on nature for his living and is also protected by the nature. Many a times he forgets his duty towards the very nature that has protected him so far. Greed overcomes need and results in destruction of nature. SRISHTI a venture of the Alva's Education Foundation aims to remind the students of AIET about their responsibility towards conservation and development of nature by conducting various activities like guest lecturers, nature visits, workshops and many other competitions. It believes that this is possible only when we understand and appreciate the selfless contribution in our life towards nature.

“SRISHTI” is a nature and environmental club of Alva's Education Foundation (AEF) which offers wide spectrum of environmental and nature activities and platform to enhance, exhibit the relationship with Mother Nature.

The club conducts various learning and adventurous activities for students of Alva's Education Foundation (AEF) which attempts for overall development of students.

The Vision is to be a role model club by initiating innovative, creative and contemporary practices to secure Mother Nature.

The Mission is to emphasize in creating the awareness on environmental issues and its impact to the students of AEF.

The objective of the club is to conducts various programmes in an attempt to create awareness on environmental issues through

- Expert views on environmental issues.
- Sensitizing students on burning environmental issues through audio-visual programmes.
- To launch environmental awareness campaigns through posters and drawing competitions.
- Organize trekking camps at surrounding forest belts to explore the beauty of nature.
- To plant saplings and rejuvenate the forest belts.
- To celebrate World Environment Day (June 5th) at the Institute.

Alva's Institute of Engineering and Technology

PRESENTS



SRISHTI



A Journey Towards Building Greener World

Mission

To create awareness about environmental issues and their impact on our living to the students of AIET. The club conducts various programmes in an attempt to create awareness on environmental issues through

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- To launch environmental awareness campaigns through various competitions.
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- A Date with Nature

Memberships open to all Nature friendly students with NQ (nature Quotient). Get your green caps on and let us test your knowledge of our nature. The better the score, the greener would be your chances of making it to the club.

Our size may be small but definitely we will make a difference with sustained, focused, and dedicated efforts. Our steps may be small but it will definitely be converted to giant leaps in conservation and preservation of the environment at large. We make our lives longer and healthier, thereby happier, only if we make the life of nature longer.

The Principal
Alva's Institute of
Engineering & Technology
Moodbidri-574225

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Activities of SRISHTI for the academic year 2015-16

Inaugural talk by N.A Madhyastha

Venue: AIET auditorium

Date: 09th September 2015

Topic: Different species of birds and their behaviors

Report:

SRISHTI club for the academic year 2015-16 was inaugurated by Prof. N.A Madhyastha, an environmental biologist. Prof. Madhyastha also delivered a talk on different species of birds and their behaviors.

Introduction of the guest:

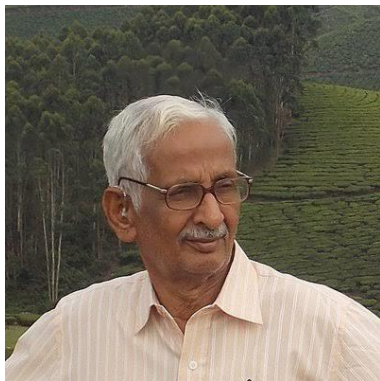
Neelvara Ananthram Aravind Madhyastha completed his B. Sc. (BZC) in the year 1996 from Poornaprajna College, Udupi then his masters (Biosciences) from Mangalore University in 1998. He termed Yettinahole project totally illegal and a project envisioned purely on political agenda.

Event:

Bird behavior refers to the actions of a bird in response to environmental situations. Some bird behavior is instinctive, whilst other behavior is learned. Behavior includes caring for itself, feeding and interaction with others (birds, humans, other animals). To develop a happy and satisfying relationship with your pet bird it is important to understand its behavior. Birds view people as part of their flock and therefore act accordingly. Dominant behavior by birds is displayed when the bird believes it is head of the pecking order. It is thus very important to establish the pecking order with your bird as the subordinate. A dominant bird may develop "bad"; behavior such as biting or screeching. It may feel it needs to defend its territory against disliked people and attack them. Such behavior by birds can be avoided by keeping the top of the bird's head level with your chest. Do not allow it to perch above you or on your shoulder as this encourages dominant behavior. Bird

behavior can often be interpreted, much like a foreign language. Tongue clicking is an invitation to interact. Grinding of the beak indicates contentment. Panting is a sign that a bird is overheated or perhaps uncomfortable. A sharp flick of the wings demonstrates annoyance. Observe your pet bird's behavior carefully and you will gain much insight into its state of mind and general well-being. Preening is an important part of bird behavior as it keeps feathers in good condition. Preening involves the smoothing of feathers by stroking the feathers with the beak. Preening behavior by garden birds may include dust baths and splashing around in water. Bird feeding behavior may change due to temperature, season and time of day. This is especially evident in the feeding behavior of garden birds. In winter they are more likely to make use of bird feeders due to a lack of natural food sources. Your pet bird may begin bobbing his/her head when hungry or excited by the prospect of being fed. Many birds expect to be fed at a certain time every day. Some species are very messy feeders and feed with great enthusiasm. Bird behavior is intricate and fascinating, whether you are observing the behavior of garden birds, birds in the wild or your own beloved pet.

Around 250 students from AIET had attended this talk



Guest talk by Dr. Harish R Bhat

Venue: AIET auditorium

Date: 24th September 2015

Topic: Bio engineering and bio mimicry

Report:

The guest talk at Srishti-the nature club by Dr. Harish R Bhat, Research Scientist. The session had the presence of Mr. Vivek Alva, Managing Trustee, Alva's Education Foundation.

Introduction of the guest:

Shri Harish R. Bhat has Carried out systematic study on Herbaceous flora in the selected sites along the Western Ghats, has also Co-ordinated the Biodiversity Conservation Prioritization Project of Karnataka State in the People's Biodiversity Register Project (1997-98), has Co-ordinated the Syllabus Committee of Karnataka State for incorporating Biodiversity Study in the UG and PG Syllabii (1999), has Co-ordinated the Karnataka State Committee to suggest the changes required for the Draft Biological Diversity Bill, 2000 for India, and many more to name.

He's been honored with prestigious positions and awards in the society such as

1. Former Honorary Wildlife Warden, Bangalore
2. Former Member, Biodiversity Management Committee, Bruhat Bangalore Mahanagara Palika (BBMP)
3. Former Member, State Level Steering Committee, wetland conservation programme, Govt. of Karnataka
4. Member, CBSE syllabus committee, Directorate for text books, Govt. of Karnataka
5. Member, Scientific Review Core Committee, and Jury at IRIS programme.
6. Jury and core committee member at National Children's Science Congress

Event:

It is hard to improve on the real thing—nature has been engineering itself since the first life forms appeared on the planet.

As human engineering solutions become more challenging, engineers are taking a closer look at how natural processes work, often at the molecular or atomic scale, for inspiration; such as the changing colors on a butterfly's wings, the motion of an insect's joint, or how termites build towering structures. These working prototypes have been with us all along, it's just a matter of recognizing them and studying their design and function. According to the Biomimicry Guild, "Biomimicry is an innovation method that seeks sustainable solutions by emulating nature's time-tested patterns and strategies—for example, a solar cell inspired by a leaf. The goal is to create products, processes, and policies—new ways of living—that are well-adapted to life on Earth over the long haul. Biomimicry follows life's principles, such as build from the bottom up, self-assembly, optimize rather than maximize, use free energy, cross-pollinate, embrace diversity, adapt and evolve, use life-friendly materials and processes, engage in symbiotic relationships, and enhance the biosphere. By following these principles you can create products and processes that are well-adapted to life on Earth."

Biodesign, in which living organisms can be used as a design input, is a study field that takes nature as an example and aims to make sustainable, functional, durable, and nonhealth threatening products. In literature, biodesign appears together with concepts such as biomimetics, biomimicry, design inspired by nature and morphogenic design . Bioengineering is the application of engineering's analytical, mathematical, and result-oriented approaches to the world of biology, while traditional engineering approaches focus on just mathematical and physical applications to solve the problems or produce a product; bioengineering uses all the information about life, human, and all living organisms. This area includes all the necessary sciences. Bioengineering deals not just with scientific knowledge but also with engineering approaches. In addition to this, biodesign is a methodological

approach of new innovations inspired by nature or using the living organism itself to make life easier. The biodesign aims to be ecological, environmental friendly, and also economical. Bioengineering is a scientific discipline that fully encompasses the applications of biodesign . Recently, researchers working in areas such as biology, engineering, architecture, and chemistry have come together to work on bioengineered design. The concept of bioengineered design must be absolutely interdisciplinary . As is known, there are great differences between the language used by basic scientists and engineers. However, it is tried to find common points in these studies. With the accomplishment of this challenging task, a great new generation of biologically inspired design products emerges .

Around 100 students from AIET had attended the talk on this topic.



Guest talk by Dr. T V Ramachandran

Venue: MBA Seminar Hall

Date: 04th April 2016

Topic: Carbon Footprints

Report:

The guest talk at Srishti-the nature club by Dr. T V Ramachandran, scientist, IISc. The session had the presence of Mr. Vivek Alva, Managing Trustee, Alva's Education Foundation.

Introduction of the guest:

Dr. T.V. Ramachandra, FIE, FIE(UK) obtained Ph.D. in Ecology and Energy from Indian Institute of Science. At present, Coordinator of Energy and Wetlands Research Group (EWRG), Convener of Environmental Information System (ENVIS) at Centre for Ecological Sciences (CES). During the past fifteen years he has established an active school of research in the area of energy and environment He was a Member of Karnataka State level Environment Expert Appraisal Committee (2007-2010), appointed by the Ministry of Environment and Forests, Government of India and a member of Western Ghats task force appointed by the Government of Karnataka. He is a recipient of Energy Legend (2011), Energy Engineer ((international) 2009) of Association of Energy Engineers (USA), Johny Biosphere Award for Ecology and Environment (2004) and Satish Dhawan Young Scientist Award, 2007 of Karnataka State Government. He is an associate faculty at Centre for Sustainable Technologies (astra) and Centre for infrastructure, sustainable Transportation and Urban Planning (CiSTUP) at Indian Institute of Science. He is an Elected Fellow of the Institution of Electrical Engineers (IEE, UK; 2005), Indian Association of Hydrologists (India; 2006), Institution of Engineers (IE, India; 2003), and a Senior Member, IEEE (USA; 2000) and Association of Energy Engineers (USA; 2000), National Institute of Ecology (2011). TVRs research interests are in the area of energy systems, renewable energy, energy conservation, energy planning, aquatic

ecosystems, biodiversity, EIA, valuation of ecosystems, environment auditing, ecological modeling, geoinformatics, urban planning, carbon footprint, environmental engineering education research and curriculum development at the tertiary level. He has published over 215 research papers in reputed peer reviewed international and national journals, 40 book chapters, 182 research papers in the international and national symposiums as well as 14 books.

Event:

Carbon footprint refers to the measure of carbon dioxide and its equivalent emitted due to various anthropogenic sources such as electricity, industry, agriculture, transportation and waste disposal sector. It is mainly employed to quantify the emission sources and its constituents which in turn help to mitigate the carbon dioxide emission from the sources into the environment. In developing countries like India, the urban population is growing at rate of 2.3% per annum and global urban population is increasing from 220 million in 1900 to 3.2 billion in 2005 and is projected to step up to 4.9 billion by 2030. There are about 48 urban cities having a population of more than one million in 2011. Unplanned urbanization and urban sprawl in the metropolitan area have posed serious problems like lack of infrastructure and basic amenities (like supply of treated water, electricity, sanitation facilities), loss of wetlands, green spaces, and increases in the concentration of greenhouse gas (GHG) emissions. Biggest challenge during the 21st century is to provide clean air, water, energy, land, with the sustainable livelihood options for billion people.

Rapid urbanisation consequent to globalisation in cities like Bangalore, has led to large scale land cover changes with the serious environmental degradation, posing serious challenges to the decision makers in the city planning and management process involving plethora of issues like infrastructure development, traffic

congestion, enhanced pollution levels (land, water, air and environment), basic amenities (electricity, water, and sanitation), etc. Apart from this, major implications of urbanisation are:

- Loss of wetlands and green spaces: Urbanisation (925% concretisation or paved surface increase) has telling influences on the natural resources such as decline in green spaces (78% decline in vegetation) including wetlands (79% decline) and / or depleting groundwater table. Quantification of number of trees in the region using remote sensing data with field census reveal 1.5 million trees and human population is 9.5 million, indicating one tree for seven persons in the city. This is insufficient even to sequester respiratory carbon (due to breathing which ranges from 540 -900 g per person per day).
- Floods: Conversion of wetlands to residential and commercial layouts has compounded the problem by removing the interconnectivities in an undulating terrain. Encroachment of natural drains, alteration of topography involving the construction of high-rise buildings, removal of vegetative cover, reclamation of wetlands are the prime reasons for frequent flooding even during normal rainfall post 2000.
- Decline in groundwater table: Studies reveal the removal of wetlands has led to the decline in water table. Water table has declined to 300 m from 28 m over a period of 20 years after the reclamation of lake with its catchment for commercial activities. In addition, groundwater table in intensely urbanized area such as Whitefield, etc. has now dropped to 400 to 500m.
- Heat island: Surface and atmospheric temperatures are increased by anthropogenic heat discharge due to energy consumption, increased land surface coverage by artificial materials having high heat capacities and conductivities, and the associated decreases in vegetation and water pervious surfaces, which reduce surface temperature through

evapotranspiration. . The study unravels the pattern of growth in Greater Bangalore and its implication on local climate (an increase of ~2 to 2.5 °C during the last decade) and also on the natural resources (78% decline in vegetation cover and 79% decline in water bodies), necessitating appropriate strategies for the sustainable management of natural resources.

- Increased carbon footprint: Due to the adoption of inappropriate building architecture, the consumption of electricity has increased in certain corporation wards drastically. The building design conducive to tropical climate would have reduced the dependence on electricity. Adoption of building architecture unsuitable for Bangalore climate has contributed to higher electricity consumption and hence higher GHG (Greenhouse gases). Per capita electricity consumption in the zones dominated by high rise building with glass facades require 14000-17000 units (kWh) per year compared to the zones with eco-friendly buildings (1300-1500 units/person/year) Higher energy consumption, enhanced pollution levels due to the increase of private vehicles, traffic bottlenecks have contributed to carbon emissions significantly. Apart from these, mismanagement of solid and liquid wastes has aggravated the situation.

Bangalore is experiencing unprecedented urbanisation and sprawl in recent times due to concentrated developmental activities with impetus on industrialisation for the economic development of the region. This concentrated growth has resulted in the increase in population and consequent pressure on infrastructure, natural resources and ultimately giving rise to a plethora of serious challenges such as climate change, enhanced green-house gases emissions, lack of appropriate infrastructure, traffic congestion, and lack of basic amenities (electricity, water, and sanitation) in many localities, etc. Of all the sectors, the domestic sector is one of the dominant sector accounting 45% of total primary energy and

final energy consumption is of 30% (excluding energy used for transport). During past few decades, the energy consumption pattern, land use patterns, technological advancements which lead to increase in the quantum of urban MSW generation has changed due to the rise in the economic level, change in the demographic structure, consumer attitude and lifestyle of the residents. The change in the lifestyle provokes the transition of end-use energy in the household sector. Such as from using fuel wood to kerosene, kerosene to LPG and electricity for cooking and fuel wood to solar heater and electrical heater for water heating. Solid waste is also an important factor in the emission of 60% Methane (CH₄) and 40% Carbon Dioxide (CO₂) to the atmosphere due to the anaerobic decomposition. Solid waste is commonly known as garbage which consists of biodegradable and non-biodegradable components produced by the various activities in the society. Municipal solid waste has become the serious problem in the recent years because about 3/4th of MSW generated from urban areas are being disposed in an unscientific way which in turn possess the serious threat to the ecosystem and human health.

Around 120 students from AIET had attended the talk on this topic.



Guest talk by Mr. Snake Shyam

Venue: AIET auditorium

Date: 30th September 2016

Topic: Different species of birds and their behaviors

Report:

A talk on snakes; the famous snake charmer Mr. Snake Shyam from Mysore demonstrated a wide variety of poisonous and non poisonous live snakes to the students.

Introduction of the guest:

M. S. Balasubramania (alt spelling Balasubramanya; born 1967), popularly known as Snake Shyam, is a snake enthusiast, wildlife conservationist and lecturer in Mysore, India. He was elected to the Mysore City Corporation in 2013, a role he served until 2018. Though not a trained herpetologist, Shyam is known throughout the Mysore region as a "naturalist on wheels". He rescues and rehabilitates snakes and educates the public about them. He is also sometimes consulted by local hospitals to identify a species of snake prior to treating a snakebite victim. Shyam has been widely recognized for his work. National Geographic featured him in its Croc Chronicles: Snakes, Karma, Action special. He has also been featured on the Discovery channel. Mysore city has named a street for him and has dedicated its first "urban forest" to him and fellow environmentalist Hyder Ali Khan.

Event:

There are more than 3,000 species of snakes on the planet and they're found everywhere except in Antarctica, Iceland, Ireland, Greenland, and New Zealand. About 600 species are venomous, and only about 200—seven percent—are able to kill or significantly wound a human. Nonvenomous snakes, which range from harmless garter snakes to the not-so-harmless python, dispatch their victims by swallowing them alive or constricting them to death. Whether they kill by striking with venom or squeezing, nearly all snakes eat their food whole, in sometimes astoundingly large portions. Almost all snakes are covered in scales and as

reptiles, they're cold blooded and must regulate their body temperature externally. Scales serve several purposes.

Around 140 students had attended the talk