

Sundarvan Nature Discovery Centre, Ahmedabad

Annual Report for the Year 2017 - 18



Sundarvan

A Nature Discovery Centre

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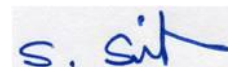
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Report of the Officer-in-charge

Since its inception in 1978, Sundarvan Nature Discovery Centre has been carrying out reptile awareness programmes. Regular reptile awareness and rescue programmes conducted in Sundarvan have sensitized the masses of the city on the importance of these animals and their ecological role. These awareness programmes have directly led to considerable reduction in the killing of snakes by people, hence emphasizing the conservation and wildlife educational role of this facility. Apart from above programmes, the zoo carries out many activities and workshops on various lesser-known species such as bats, odonates, amphibians, etc on regular basis. A total of 16021 students and 2107 teachers from 293 schools visited Sundarvan during this year to enhance their classroom learning.

The Indian zoos are moving towards the new era to fulfil the modern needs. We at Sundarvan also try our best to create a state-of-the-art Mini Zoo. We are working on the enclosure design and making changes of the animal facilities in phase. The nature immersed, spacious crocodile enclosure was completed in the year 2016 with an external funding. Construction of new snake enclosure as per the approved Master Plan is in progress.

The lush green campus acts as sanctuary for wide range of animals in this fast developing city. Apart from schools, the higher education institutions are also using this facility for their education, research and internship programmes. Sundarvan is already working with few institutions/zoos to get technical support. Further support from well-wishers, institutions, other zoos and Central Zoo Authority will help Sundarvan to reach as a modern zoo education facility for the region.



S. Sivakumar
Park Manager

1. History of the Zoo

Prior to 1978, the area of Sundarvan was a small mango orchard. Almost half of the area was barren. Later, different tree species were raised to maintain the diversity. The place became a dense green patch with over 50 tree species now. In 1978, the Nehru Foundation for Development, Ahmedabad organised a week long snake awareness programme in Ahmedabad with the help of Madras Crocodile Bank Trust, Chennai. The success of the programme inspired the management to create permanent reptile viewing and educational facility in Sundarvan.

2. Objective

- The prime objective of Sundarvan is to impart Nature Education to all the strata in the society.
- To develop model Zoo Education and Management Programme for Zoo Keepers and Zoo Administrators.
- To conduct training workshops for teachers, researchers, naturalists, volunteers, corporate personnel based upon their needs of nature education.

3. About us

S.No.	Particulars	Information
Basic Information about the Zoo		
1	Name of the Zoo	Sundarvan Nature Discovery Centre
2	Year of Establishment	1978
3	Address of the Zoo	Jodhpur Tekra, S. M. Road, Ahmedabad, Gujarat – 380015.
4	State	Gujarat
5	Telephone Number	079-26923148, 26921838
6	Fax Number	079-26858010
7	E-mail address	sundarvan@ceeindia.org

S.No.	Particulars	Information
8	Website	www.sundarvan.org
9	Distance from nearest	Airport: 17 KM
		Railway Station: 10.5 KM
		Bus Stand: 2 KM
10	Recognition Valid up to (Date)	22.03.2019
11	Category of zoo	Mini
12	Area (in Hectares)	1.3
13	Number of Visitors (Financial Year)	Adult : 46,877
		Children : 34,225
		Total Indian : NA
		Total Foreigners : NA
		Total Visitors: 81,102
14	Visitors' Facilities Available in Zoo	Children Play area, Seating arrangements, Toilets and Drinking water.
15	Weekly Closure Day of the Zoo	Monday
Management Personnel of the zoo		

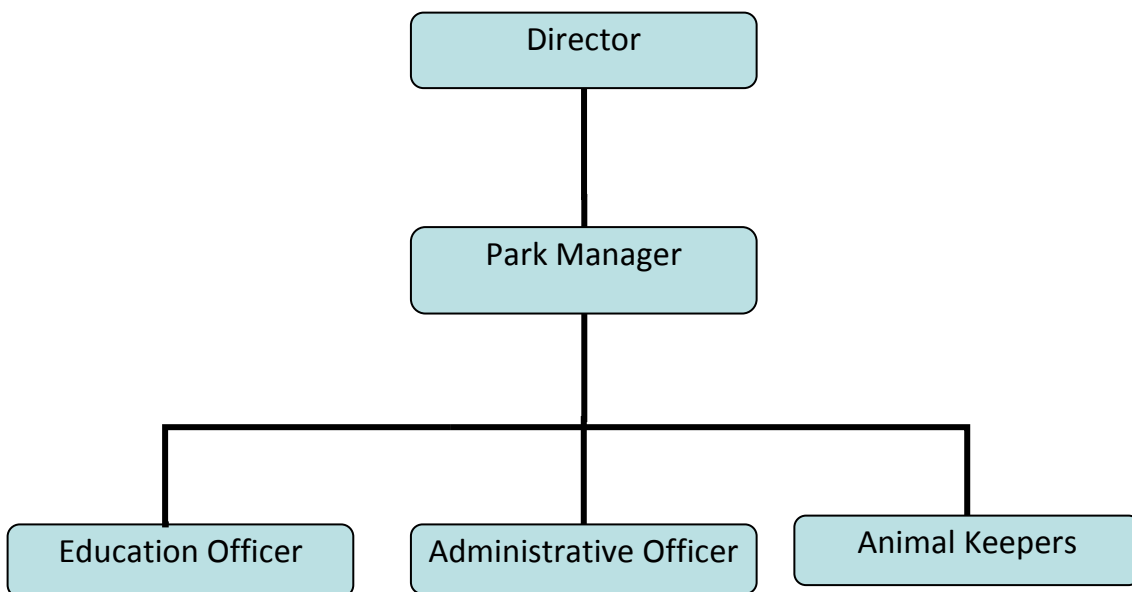
S.No.	Particulars	Information
16	Name with designation of the Officer in-charge	S. Sivakumar, Park Manager
	Name of the Veterinary Officer	Dr. Kishore Transadiya
	Name of the Curator	NA
	Name of the Biologist	NA
	Name of the Education Officer	Saymanti Bandyopadhyay
	Name of the Compounder/ Lab Assistant	NA
Owner / Operator of the Zoo		
17	*Name of the Operator	Centre for Environment Education
18	Address of the Operator	Thaltej Tekra, Ahmedabad, Gujarat – 380054.
19	Contact details/Phone number of Operator	079-26858002-05
20	E-mail address of Operator	ceedo@ceeindia.org

** Rule 2(m) of the Recognition of Zoo Rules, 2009.*

“Zoo Operator” means the person who has ultimate control over the affairs of the zoos provided that _____

- I. in the case of a firm or other association of individuals, any one of the individual partners or members thereof; or
- II. in the case of a company, any director, manager, secretary or other officer, who is in-charge of and responsible to the company for the affairs of the zoo; or
- III. In case of zoo owned or controlled by the Central Government or any State Government or Union Territory Administration or any Trust or Society funded by the Central Government or a State Government or a Union Territory Administration, the Secretary of the concerned Department of that Government, or as the case may be the Union Territory Administration, shall be deemed to be the Zoo Operator.

5. Organizational Chart



The Veterinary Officer is on call. The security and housekeeping staff are managed by a third part agency.

6. Human Resources

Manpower of the Zoo*

Sl.No.	Designation	Number of Sanctioned Posts	Names of the incumbent
1	Park Manager	1	1
2	Education Officer	1	1
3	Administrative Officer	1	1
4	Animal Keepers	3	3
5	Peon	1	1

*Please give above mentioned information in respect of all zoo personnel, from the Officer in-charge up to the Animal Keeper.

7. Capacity Building of zoo personnel

No training programme attended by any staff from the zoo for this period

8. Zoo Advisory Committee

No existing zoo advisory committee

9. Health Advisory Committee

No health advisory committee

10. Statement of income and expenditure of the Zoo

Year	Income	Expenses
2017-18	17,40,190.00	18,24,738.00

Note: The staff salary of about Rs. 30,00,000/- has not been included in the above budget. The Centre for Environment Education, Ahmedabad, extended the financial support to manage the deficit in the above budget and the salary component.

11. Daily feed Schedule of animals

Sl. No.	Species	Feed item	Quantity		Day of fasting
			Winter	Summer	
1	Star Tortoise	Soaked grams, vegetables, fruits and leaves	100gm per animal.12.5%, 25%, 25% and 37.5% respectively	200gm per animal.12.5%, 25%, 25% and 37.5% respectively	Nil
2	Bengal Monitor Lizard	Mice, chicks and eggs	Two numbers per animal (any one at a time). Twice a month.	Two numbers per animal (any one at a time). Weekly once.	Weekly or fortnightly feeding, depends on the season
3	Indian Rock Python	Rabbit/chicken	One per snake (1.25 to 1.5kg)	One per snake (1.25 to 1.5kg)	Monthly once during winter and fortnightly in other seasons
4	Medium sized	Rat/chicks	One per snake	Two per snake	Fortnightly

	snakes (Indian rat snake, Cobra, Russell's viper and Red sand boa)				during winter and weekly during other seasons
5	Smaller snakes (common sand boa, common krait)	Mice	One per snake	Two per snake	Fortnightly during winter and weekly during other seasons
6	saw-scaled viper	Mice/lizard	One per snake	Two per snake	Fortnightly during winter and weekly during other seasons
7	Checkered Keelback	Frog/fish/mice	Two per snake	Two per snake	Fortnightly during winter and weekly during other seasons
8	African slender-snouted crocodile	Chicken/Rabbit/fish (dead/live)	2kg per animal	2kg per animal	Fortnightly during winter and weekly during other seasons
9	Indian Porcupine	Fruit, grains, vegetables and leaves	1kg per animal. Daily. 15%, 15%, 50% & 30% respectively	1kg per animal. Daily. 15%, 15%, 50% & 30% respectively	
10	Hedgehog	Boiled egg, meat, mice and fruits	100gm per animal. Daily	100gm per animal. Daily	

12. Vaccination Schedule of animals

No vaccination schedule, as most of the animals in exhibits are reptiles.

13. De-worming Schedule of animals

The faecal analysis carried out on regular interval to find the parasite load. De-worming is carried out on the need base. No de-worming was carried out in this year and detail of the previous de-worming is as given in the table.

Sl.No.	Species	Drug used	Month
1	Indian Rock	Ivermectine	5-11-2015

	Python	
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14. Disinfection Schedule

Sl.No.	Species	Type of enclosure	Disinfectant used and method	Frequency of disinfection
1	Snakes	Closed, glass front	Surface change & whitewashing the water trough	Fortnightly
2	Turtle	Open air	Whitewashing the water body	Fortnightly
3	Tortoise	Open air	Whitewashing water trough	Fortnightly
4	Crocodile	Open air	Water change and whitewashing water body	Fortnightly

15. Health Check-up of employees for zoonotic diseases

Sl.No.	Name	Designation	Date of Health Check up	Findings of Health Check up
1	Mr. Madansinh Sisodia	Animal Keeper	13-2-2018	Normal
2	Mr. Jagroo Prasad Pal	Animal Keeper	13-2-2018	Normal
3	Mr. Ratilal Solanki	Animal Keeper	13-2-2018	Normal

16. Development Works carried out in the zoo during the year

New Snake Enclosures

A pair of sample snake houses with large space to allow free movement of snakes kept inside and considering other factors such safety of the animal keepers and enhancing the visitors experience are made during this period. The flooring with leaf litters, large water trough, stones and tree branches for climbing and help ecdysis are provided as part of the enrichment activities. Cooler and heater provisions are also made to maintain the pleasant temperature in the enclosure during summer and winter respectively.



The nature immersed, spacious snake enclosure at Sundarvan.

Riverside School Project

The Riverside School is one of renowned schools in Ahmedabad has carried out a student project with Sundarvan during this year. The sixth grade students visited the zoo and did survey with visitors and identified few things to work on. Based on their finding and feasibility in their level, they have installed few things such as wayside signage, zoo map and facelift of the main gate at Sundarvan. Fourth grade students of the same school created a butterfly garden at our facility few years back. These projects provide students practical hands on experience and also send message to the community that how others can contribute to such public places.

17. Education and Awareness programmes during the year

Reptile Awareness Programmes was conducted for park visitors on every Sunday. It was carried out for 31 schools on other days, where about 2000 students and teachers participated. Sundarvan plays a very crucial role in sensitizing and creating appreciation for wildlife, specially the lesser known species like snakes and other reptiles. Regular Snake awareness and nature appreciation programmes conducted in Sundarvan have sensitized the masses of the city on the importance of these species and their ecological role. These awareness programmes have directly led to considerable reduction in the killing of snakes by people, hence emphasizing the conservation and wildlife educational role of this facility.

Young Naturalists of Sundarvan

This year, we introduced an annual membership programme for schools – ‘Naturalists of Sundarvan’, especially for students of 6th to 8th class. Aimed to create connect between the kids raised in an urban environment with their natural surroundings, this initiative banks upon nurturing the innate curiosity within every child. This helps to generate an interest and awaken the naturalist within through four unique sessions each focussing on three different animal groups, namely – insects, reptiles and birds and on trees. Each programme is planned at a different location and is packed with hands-on learning modules, resource materials and immediate help of experts.

Fifty two young naturalists from St. Kabir School were enrolled for the academic year 2017-18. Apart from this, 15 students joined from Mahatma Gandhi International School, Ahmedabad, with special focus on birds, covering different activities such introduction to the world of birds, food and feeding, breeding, bird watching field visits and how to contribute to the citizen science.

Special day events

National wildlife week is celebrated all through the country to aware the general public and instill the curiosity and passion about the wildlife of India. An initiative by Indian Board of Wildlife (IBWL), Wildlife Week is observed from 2nd-8th October. This year Sundarvan celebrated the noble cause with a series of events. The first programme of the occasion was the Wildlife Quiz. On 3rd, Tuesday, two quizzes were organised, the morning quiz targeted for school students and one in the evening was open to all. The Quiz Master for the school quiz was Mr Bhushan Patel who

designed it in different rounds, encouraging participants to learn more about the wildlife of India and the World. The open quiz for the evening was conducted by Mr Kushan Patel, founder of Ahmedabad Quiz Club. He put forward many topic-appropriate questions designed in exciting rounds by which not only participants but audience also got to learn about the amazing facts on flora and fauna, popular personalities who contributed for wildlife conservation and more.



The wildlife photo exhibition during the Wildlife Week at Sundarvan.

Indian Wildlife Quiz was organised to increase awareness about the fascinating wildlife of India and their conservation, and received tremendous response. The JK Laxmi Cement extended their generous support to carry out these quiz programmes.

On 6th Oct 2017, “CrOctober Friday” was organized. Sundarvan celebrated the wildlife friendly October’s first Friday talking about its one of the important members - the Crocs. The event started with a general introduction of Reptiles followed by features of Crocodile, its feeding habits, breeding, parental care, conservation issues, etc. Later, their favourite food - fish was fed to these mighty beasts in front of the participants. The interactive talk created lot of curiosity which facilitated the audience to ask many questions to clarify their doubts on crocodiles. The evening ended with screening of “Here Be Dragons” documentary, midst of the tall trees surrounded open air theatre.

The vivid colours of nature captured from different parts of Gujarat by one of our young volunteers, Neel Panchal was exhibited for visitors from 6th to 8th. Mr. Ratilal Kansodaria, Principal, Sheth C. N. College of Fine Arts, Ahmedabad, inaugurated the event. Over 50 photographs of wildlife ranging from spiders to birds and mammals were exhibited in the occasion.

On Saturday the 7th Oct “Lets Talk about Photography” became a highly acclaimed event. The programme was targeted towards the photography enthusiasts who have special interest on shooting wildlife. Mr Pavan Patel was the speaker of the day. With a deep passion for wildlife and nature, Pavan is into ecotourism and has extensively travelled to different parts of India and other countries. He mesmerized the audience with his stunning photographs and the event was well received by the participants.

The events were diverse with potential to inculcate the passion and curiosity on wildlife among different age groups.

Other Educational Activities

Three different activities, Young Naturalists for 8 to 12 years old, Zoo Keeper for a day for 10 to 15 years old and Mom and Me exploring the zoo for 4 to 7 years were conducted during this summer. Over 100 children were participated in these programmes. Winter programme with special focus on spider was carried out, where 175 kids participated in batches. A significance attitude change towards spider was found through the pre and post programme questionnaire survey.

Green birthday celebration of small children with various awareness activities were carried out for 13 children during this period. Around 300 participants including children and adults participated in these birthdays. Discover bat – a bat awareness programme consisting of powerpoint presentation, movie clippings, games, visit to the roost site (within Sundarvan campus) and observing bats feeding fruits, etc were carried out once for different age participants.



Participants observing birds during the visit to Pariej wetland

A bird watching trip was arranged to Pariej wetland, Gujarat, on 3rd December. The participants consist of both children and adult showed keen interest seeing different birds in the wetland and noting down their names. “Our Birds Our Friends” bird chart of Centre for Environment Education was distributed to all as a resource material to encourage bird watching.

18. Seasonal special arrangements for upkeep of animals

Air cooler, sprinkling water in the enclosure are carried out during summer and heater is provided during winter months.

19. Research Work carried out and publications

No research work carried out during this period.

20. Conservation Breeding Programme of the Zoo

There is no breeding programme happening at Sundarvan, as the animals we have are very common species that has wide distribution in India.

21. Animal acquisition / transfer / exchange during the year

There is no animal acquired from any zoo or given to any zoo from Sundarvan during this period.

Excess Animals with us: Three Indian Rock Pythons are excess in our stock (All females). These snakes can be given to any recognised zoo(s) that needs this species.

22. Rescue and Rehabilitation of wild animals carried out by the Zoo

No rescue was carried out.

23. Annual Inventory of animals

Form – II
[See Rule 11(1)]
Part – A

Inventory Report for the Year: 2017-18

Endangered Species*

S.No.	Animal Name	Scientific name	Opening Stock as on 1-4-2017				Births			Acquisition			Disposal			Death			Closing Stock as on 31-3-2018			
			M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T
1	Indian cobra	<i>Naja naja</i>			6	6															6	6
2	Indian monitor lizard	<i>Varanus bengalensis</i>			3	3											1				2	2
3	Indian rock python	<i>Python molurus</i>			7	7															7	7
4	Indian rat snake	<i>Ptyas mucosus</i>			5	5															5	5
5	Chekered keelback	<i>Xenocrophis piscator</i>			3	3															3	3
6	Russell's viper	<i>Doboia russelii</i>			1	1															1	1

*Animals under Schedule I and Schedule II of the Wild Life (Protection) Act, 1972

Part – B

Other than Endangered Species

S.No.	Animal Name	Scientific name	Opening Stock as on				Births			Acquisition			Disposal			Death			Closing Stock as on				
			M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T	
1	Indian porcupine	<i>Hystrix indica</i>			1	1															1	1	
2	Pale hedgehog	<i>Paraechinus miers</i>	1	2		3															1	2	3
3	Red sand boa	<i>Eryx johni</i>	1	1		2															1	1	2
4	Common sand boa	<i>Eryx conicus</i>	1	1		2															1	1	2
5	Common krait	<i>Bungarus caeruleus</i>				6																	6
6	Saw-scaled viper	<i>Echis carinatus</i>	1	1		2															1	1	2
7	Star tortoise	<i>Geochelone elegans</i>				16																	16
8	African slender-snouted crocodile	<i>Mecistops cataphractus</i>		2		2																2	2

24. Mortality of animals

Sl.No.	Animal Name (with individual identification mark, if any)	Scientific Name	Sex	Date of Death	Reason of Death as per the Post-mortem report
1	Monitor lizard	<i>Varanus bengalensis</i>	Unidentified	15/12/2017	Old age

25. Progress made in implementation of the conditions stipulated during the 2015 grant recognition.

Sl. No.	Norm No.	Condition Stipulated	Time Period to Comply	Status with Regard Compliance of the Conditions Stipulated
1. General Requirement				
1	1 (2 i)	Landscaping, plantation along pathway which will attract butterfly is useful for two purposes. Food for butterfly and beauty for area.	One year	Raising plants along sides of the pathway has been carried out.
2	1 (2 ii)	Trees plantation near wall with creepers help to hide wall and building.	Six months	Sundarvan has got very good vegetation cover that hide the most part of the boundary walls and nearby buildings. New trees are planted in the gaps.
	2 (iii)	Need tall plantation with creepers to hide wall and human habitation.	Immediately	About 4 feet height plants of tall growing Asopalav <i>Polyalthia longifolia</i> were planted in a row close to the boundary wall that separate the human habitation during the 2015 rainy season. Apart from this, already many other flowering tree species have also been planted in this area three years back. Once they reach good height, they hide the view of the human habitation close to the zoo.
3. Development and planning				
4		The Zoo should prepare and give the master plan approved from the Central Zoo Authority immediately.	Immediately	The Master Layout Plan of Sundarvan got approved in 2009. The Master Plan will be made soon to submit CZA for further approval.
4. Animal Housing, display of animals and animal enclosures				
5	4 (6)	Many other enclosures like birds and snake need enrichment.	Six months	Logs, stones, water trough, perches are provided in the enclosures. Construction of spacious snake enclosures with modern amenities have been

				started. As these enclosure are spacious, will have all necessary enrichments.
6	4 (5)	The zoo should provide appropriately designed and effective standoff barrier at every animal display enclosure to regulate the movement of visitors.	Six months	As there is no enough space to provide standoff barrier in the aquarium, we can't do here. However, the new aquarium design will have this provision. Other enclosures have the suitable standoff barriers. Moreover, the new snake enclosure design has the provision of appropriately designed standoff barrier as per CZA guidelines.
7	4 (5)	Every enclosure should be provided with appropriate signages with relevant information on biology and behaviour of animals.	Six months	The appropriate signages have been installed in all animal enclosures.
8	4.1	All animal enclosures should be nature immersing.	One year	The zoo has got very good vegetation cover and even some enclosures such as turtle, tortoise and python have got vegetation inside them. The new snake enclosure also designed keeping this in mind. Necessary action will be taken to make all the enclosure nature immersing.
9	4.2	The design and dimensions of every enclosure in the zoo should as per the prescribed standards and norms of CZA and should meet the biological behaviour of the animals. Snake enclosures require some changes	One year	Two spacious snake enclosures are made. The process is on to get approval of design from CZA for other snakes that are listed in Schedule I and II.
6. Veterinary and Infrastructure Facilities				

10	6 (1C)	The zoo should provide a treatment room with basic facilities for treatment of animals.	Within six months	Since it is a Mini Zoo and most of the inhabitants are reptiles, we do not have much medical issues. However, we have veterinarian on call. His clinic is located within 500m from Sundarvan and its equipped with all the modern medical amenities. However, we will do the needful to get this room done soon.
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26. List of free living wild animals within the zoo premises

a. Mammals

- i. Indian Flying Fox
- ii. Short-nosed Fruit Bat
- iii. Small Asian Mongoose
- iv. Northern Palm Squirrel

b. Birds

- i. House Crow
- ii. Jungle Crow
- iii. Common Myna
- iv. Ashy Drongo
- v. Black Drongo
- vi. Blue Rock Pigeon
- vii. Asian Collared Dove
- viii. Laughing Dove
- ix. Red Collared Dove
- x. Grey Francolin
- xi. Rufous Treepie
- xii. Southern Coucal
- xiii. Shikra
- xiv. Black Kite
- xv. Rose-ringed Parakeet
- xvi. Coppersmith Barbet
- xvii. Small Minivet
- xviii. Grey-headed Canary Flycatcher
- xix. Paradise Flycatcher
- xx. Tickell's Blue Flycatcher
- xxi. Red-breasted Flycatcher
- xxii. Brown Flycatcher

- xxiii. Black-naped Monarch
- xxiv. Common Tailorbird
- xxv. Magpie Robin
- xxvi. Indian Robin
- xxvii. Ashy Prinia
- xxviii. Red-vented Bulbul
- xxix. Lesser whistling Duck
- xxx. Red-naped Ibis
- xxxi. Pond Heron
- xxxii. White-breasted Waterhen
- xxxiii. Yellow Wagtail
- xxxiv. White-throated Kingfisher
- xxxv. Red-wattled Lapwing
- xxxvi. Purple Sunbird
- xxxvii. Purple-rumped Sunbird
- xxxviii. Asian Koel
- xxxix. Alexandrine Parakeet
- xl. Yellow-legged Green Pigeon
- xli. Jungle Babbler
- xlii. Small Green Bee-eater
- xliii. Indian Peafowl
- xliv. Black-rumped Flameback
- xlv. Indian Silverbill
- xlvi. Palm Swift
- xlvii. Dusky Crag Martin
- xlviii. Thick-billed Flowerpecker
- xlix. Pale-billed Flowerpecker
- l. Greenish Warbler
- li. Oriental White-eye
- lii. Lesser Whitethroat
- liii. Little Egret
- liv. Indian Golden Oriole
- lv. Common Iora
- lvi. Indian Thick-knee
- lvii. Black-crowned Night Heron
- lviii. White-browed Fantail
- lix. Bluethroat

c. Reptiles

- i. Common Garden Lizard
- ii. Brook's Gecko
- iii. Northern Hose Gecko
- iv. White-spotted Skink

- v. Common Snake Skink
- vi. Common Monitor Lizard
- vii. Indian Flapshell Turtle
- viii. Indian Rat Snake
- ix. Spectacled Cobra
- x. Common Sand Boa
- xi. Common Wolf Snake
- xii. Common Krait

Education Reports and Publications

Field Report

education

Budding birders of Sundarvan



At Godhavi - observation of heronry to learn about breeding in birds

Birdwatching is a recreational activity and can progress to be a great contribution for citizen science. Encouraging children in birdwatching will help them develop passion towards nature appreciation. Now a days, children spend lot of time in watching televisions and playing video/mobile games. The outdoor exposure will provide good physical and mental health. So, time spent outdoor for useful hobby such as birdwatching make the children engaged in useful activity, which helps them grow healthy.

Fifteen students from Mahatma Gandhi International School (MGIS), Ahmedabad, joined in the "Budding Birders of Sundarvan" for 2017-18. Joonaa Sheel, the teacher in-charge of the programme is dedicated to mould these students as keen bird watchers.

This annual programme has four different sessions. Students were introduced to the world of birds through an interactive powerpoint presentation in the first session. Topics such as origin, general features, diversity, food and feeding, breeding, conservation issues, beak and feet adaptation, interesting facts, importance of birdwatching, etiquettes of birdwatching and introducing the common birds of this region were covered. Later, students were taken around to observe birds in the school premises.

A visit was made to the heronry in Godhavi to observe breeding activities of birds on 2 September 2017. Students were very excited seeing this colonial breeding phenomena of different birds such as Asian Openbill, Indian Cormorants, Night Herons, Black-headed Ibis and different species of egrets. Information such as tree species used for nesting, tree

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education

height, nest height, number of nest on each tree, distance of nest tree from road, human habitation and water bodies, etc were collected for further discussion. "Birds of Peninsular India" - packet guide was distributed to all the students as resource material. Students tried their hand, identifying birds seen in this site. Introduction on nesting and various types of nests were explained to them before reaching the spot.

The third activity was carried out at Sundarvan Nature Discovery Centre on 17 January 2018. Nest making activity, using different waste materials was taught. A birdwatching session was also conducted for them at the premises. Students were encouraged to submit their bird list in online portal such as ebird.org to contribute to the citizen science.

The enthusiastic group gathered at Sundarvan early morning of 10 February 2018 for a bird watching trip to Pariej. A group of two adults and juvenile Sarus Cranes was the major attraction before reaching this fantastic birding site of Gujarat. A small squadron of Dalmatian Pelicans welcomed us in Pariej. The children were excited to see magical colours of Purple Moorhen, Bronze-winged Jacan and White-throated Kingfisher through spottingscopes. A white morphed Paradise Fly-catcher with long tail was entertaining these budding birders by hopping here and there to capture flies for quite some time. The children could view over 50 birds including Caspian Tern and Small Pratincole. They were totally in to the birding by viewing them thoroughly, noting down the bird names, capturing them through lenses and asking questions to clarify their doubts. Joonaa told me that they have few more activities at school to sustain this interest among these kids and to pass this energy to other students. I strongly believe that this programme will have major impact to shape some future naturalists.



Observation of Sarus Crane family on the way to Pariej

Acknowledgements: Sincere thanks to IDEA WILD for generously providing us a spottingscope and binoculars to use in such programmes and also thanking the management of MGIS for choosing us to carry out this activity for them.

Submitted by: S. Sivakumar, CEE, Sundarvan, Ahmedabad.
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Snake Awareness Programmes for Government Schools of Ahmedabad, Gujarat, India

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Introduction

Sundarvan is an activity of Centre for Environment Education, Gujarat, India and it is recognised as a Mini Zoo by the Central Zoo Authority of India (CZA). Sundarvan conducts various activities round the year to sensitize people about wildlife appreciation.

Sundarvan is popularly known for its service of snake rescue and snake awareness in Ahmedabad. Snakes are one of the most misunderstood animals and generally killed when encountered in and around human habitations. As a result of our regular snake awareness programmes conducted over three decades, people call us to rescue snakes when encountered instead of killing them. Apart from rescue, awareness gives long-term impact to avoid snake-human conflict. Through our regular snake awareness programmes at Sundarvan, we reach around 20,000 people annually.

Sundarvan tries to reach as many people as possible by offering a range of programmes and activities to visitors, for bringing behavioural change. Due to different constraints, government schools almost never visit Sundarvan.



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To cover a number of Government schools and to create a cadre of teachers to bring long-term impact, a proposal was submitted to The Rufford Foundation and through this funding considerable number of government schools (c.15%) in Ahmedabad were reached in 2015-16.

The Rufford Foundation is a UK registered charity which funds nature conservation projects across the developing world. Till now, the Foundation has awarded grants to over 3000 projects in 155 countries.

Methodology

Government schools from the outskirts of Ahmedabad, where children have a higher chance of seeing snakes, were selected and approached to conduct a snake awareness programme. A team of at least two people visited such schools to carryout programmes. An interactive, pictorial presentation on snakes, covering topics such as characteristic features of snakes, distribution, diversity, venomous, non-venomous, precautions to avoid snakebite, first aid in case of bite, snakebite and treatment, conservation issues and myths and facts were shown to them. Artefacts such as slough was carried to the school to use as touch table material to enhance the experience of the participants. A questionnaire survey with following questions was made to the students before (n=768 students) and after (n=765 students) the programme to evaluate the effectiveness:

1. Which of the following snakes are venomous?
2. Do snakes drink milk?
3. Do snakes have bones?
4. What should be done in case of snake bite?
5. Do we need snakes?