BE A SCIENTIST FOR A DAY: A CITIZEN SCIENCE PROJECT FOR BIODIVERSITY SURVEYS AT BNHS NATURE RESERVE





PRESENTATION LAYOUT

- 1. Introduction: Overview of Citizen Science
- 2. Methods: About Be a Scientist for a Day Programme
- Results: Profile of Citizen Scientists and Data collected by them
- 4. **Discussion:** Learning of Citizen Scientists and their contribution to science
- 5. Conclusion: Future Plans



OVERVIEW

- What is Citizen Science?
- Why is Citizen Science Important?
- Study area
- Introduction to Be A Scientist for A Day

What Is Citizen Science Programme?



- Involving citizens in scientific studies
- Oldest Citizen Science Activity:
 Audubon Society's Christmas
 Bird Count since Christmas of
 1900
- In India the first Citizen Science Programme was started by National Centre for Biological Sciences in 2007; MigrantWatch & SeasonWatch





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Why Citizen Science?

- Scientific community- aloof from society
- Lack of awareness about field science
- Gaping hole in scientific data
- Locals can be an important source for scientific data collection
- Large amounts of data is collected in shortest time.





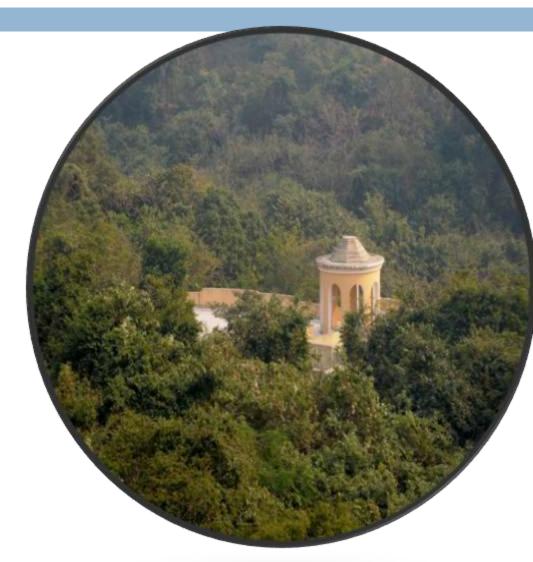
Study Area

Name: BNHS Nature Reserve (BNR)

□ Area: 33 acres

 Location: Sandwiched between Sanjay Gandhi National Park (SGNP) & Filmcity, Mumbai.

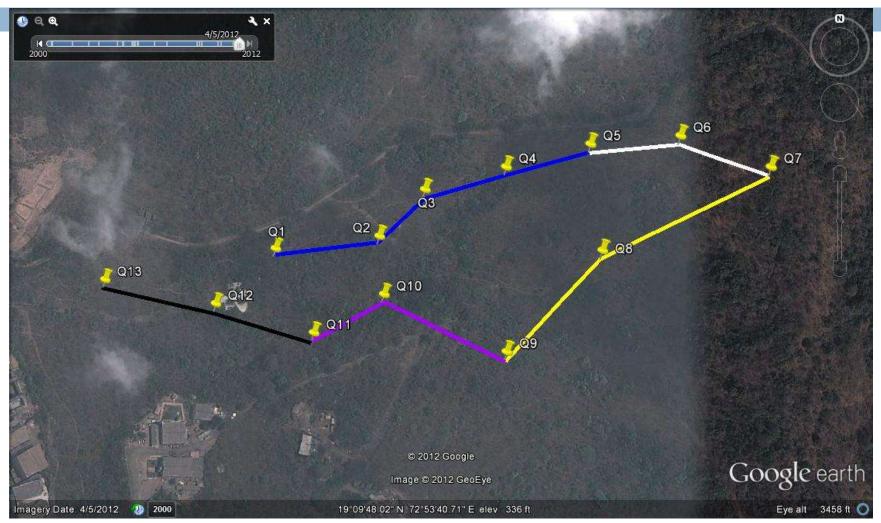
Type of Forest: SemiMoist Deciduous



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BNHS India conserving India nature since was

Map Of Study Area



LEGEND:

■ Karvi Trail □ Salim Ali Trail □ Leopard Trail □ Stream Trail ■ Temple Trail



Be A Scientist for A Day

- Launched on 26January 2011
- BiodiversitySurvey of BNHSNature Reserve
- Monthly surveys
- 5 Survey themes:
 Plants, Birds,
 Insects, Herpeto
 fauna, Birds and
 moth studies





Field Surveys

Surveys conducted by experts

Participants learn:

- Research orientation- Slide illustrated talk
- Identification
- Survey techniques-Hands on field work
- Use of gadgets like GPS, Thermohygrometer
- Use of field guides
- Data entry





METHODOLOGY

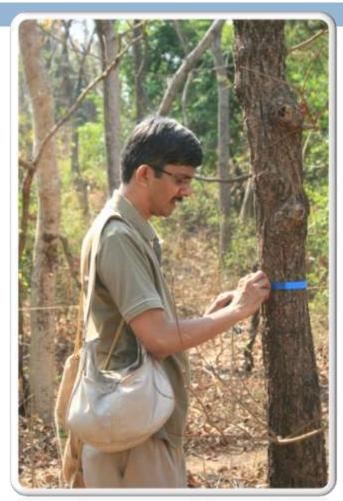
- Field survey techniques
- Materials and Equipment
- Announcement,
 Publicity and
 Registration of
 Programme
- Conduct survey
- Data analysis
- Feedback





Field Survey Techniques

- Monthly Surveys
- Five existing nature trails used as transect
- Set up 15 m X 15 m quadrants at every 100 m distance
- 13 quadrants on 33 acres
 - For Flora and Insects study:Quadrants
 - □ For Birds: Point-Transect
 - For Herpeto fauna- Direct Point-Transect
 - Nocturnal insects- Light traps.







Equipment And Resources

- Compass
- Ropes
- Measuring tape
- □ Paint and ribbons
- □ GPS unit- Garmin E-Trex
- □ Thermo-hygrometer
- □ Field Guides
- Data sheets











Programme Publicity

- Monthly announcement
- Publicity:
 - Press release
 - Online groups, Facebook,Twitter, Orkut
 - Radio
 - BNHS membership circular
 - BNHS website
- Registration form for prior registration

THE HANDBOOK

YOUR GUIDE TO BECOMING A CITIZEN SCIENTIST

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RESULTS

- Who were the Citizen Scientists?
- How they contributed to science?
- How they benefitted from science?



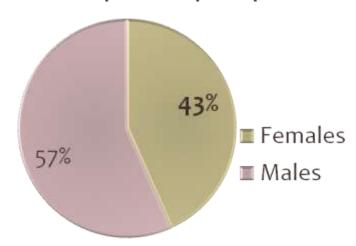
Participant's Profile

□ 271 participants till June 2012

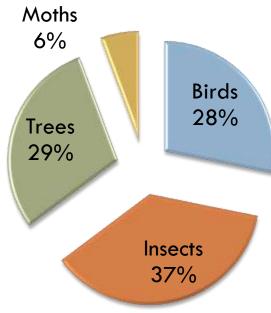
150 individuals and 121 school and college

students

Gender wise profile of participants

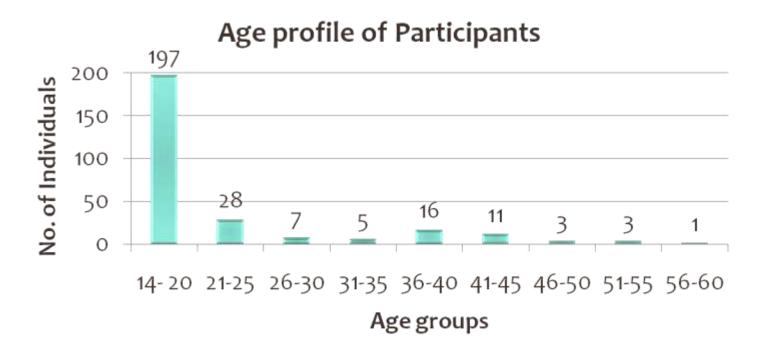








Participant's Profile





Data Collection on Plants

- 27 Trees, 9 Shrubs, 26 Herbs and10 Climbers species
- Most dominant species
 - Tree Lannea coromandalica
 - Shrub- Carvia callosa
 - Herb- Curcuma pseudomontana
 - Climber- Cocculus hirsutus





Data Collection on Insects

- 200 speciesbelonging to 15Orders
- Dominant order was Hymenoptera
- Lepidoptera showed most species diversity
- 46 species of butterflies

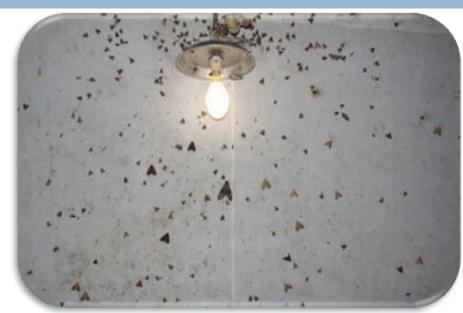






Data Collection on Moths

- Common moth Asota sp.
 belonging to family Erebidae.
- Infestation by mangrove moths (Hyblea sp.) during the month of September.
- □ Over 200 species of moths.







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Data Collection on Reptiles & Amphibians

- 11 species of reptiles and five amphibians.
- Among the reptiles the Geckos were dominate,
- The snakes were sighted rarely during the survey.
- Common Indian Toad was the dominant amphibian.

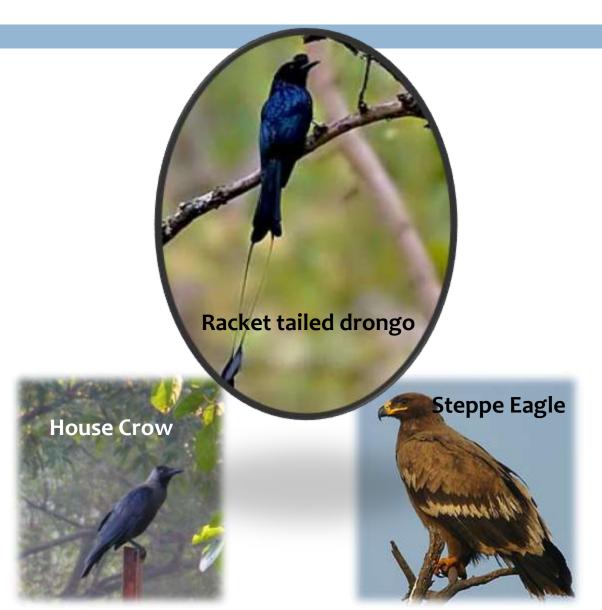






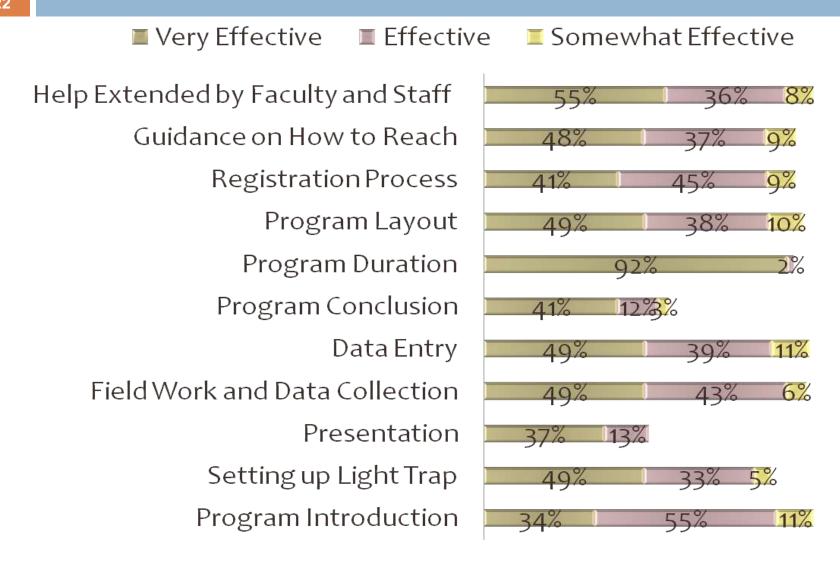
Data Collection on Birds

- 2317 individuals of
 53 species belonging
 to 29 families
- Dominant family
 Corvidae with 849
 individuals of two
 species.





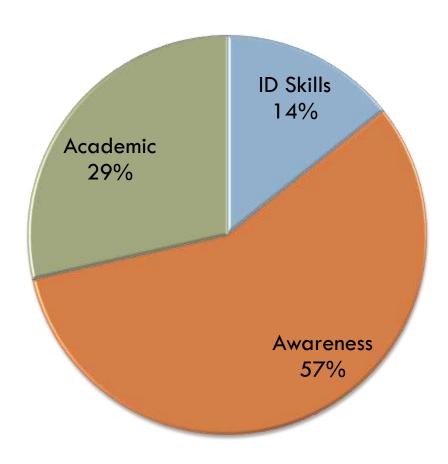
Particpants' Feedback





Benefits to the Participants

Benefits to the Participants



DISCUSSION



Participants

- Youth were attracted to the module with a sizable chunk (225 individuals) being between 14-25 years
- The students benefit by learning the research methodologies through hands on training
- The BNHS benefits through completion of Biodiversity study of BNR.
- The community benefits through having army of citizens undertaking scientific presentation.

Data Interpretation

- The dominance of Carvia callosa and Curcuma pseudomontana could be attributed to the undulating terrain of the BNR
- The infestation by Hyblea sps. needs to be further investigated
- Dominance of Crow population along the periphery could be attributed to proximity to Shooting locations



CONCLUSION

- The "Be A Scientist for A Day" programme has been well received by audiences
- The programme succeeded in infusing interest among amateurs for field research
- The uniqueness of the programme could be one reason it was covered repeated in print media including cover stories.
- Contributes to Aichi Target 1.

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FUTURE PLANS

- Make "Be A scientist for A Day" a regular feature of BNHS- CEC programmes
- Apply for grant, so that the module can be subsidized.
- Publish a scientific paper
- Increase the purview of the study to include more sites.





Our Experts

• Flora: Dr. Usha Desai, Ms. Renee Vyas, Mr. Hemant Tripathi.Insects: Dr. V. Shubhalaxmi, Mr. Sachin Chorge. Reptiles and Amphibians: Mr. Viral Mistry. Birds: Dr. Ketki Marthak, Mr. Kevin Paul

Our Participants

Poonam Gajaria, Sameer Ashar, Vandana Tilwani, Rutuja ,Vikas Joshi,Anuya Krishna Merwade, Kavita Rani Vasundhara Sanklecha, Jonathan D'silva Nirmala Balakrishnan Elizabeth Devasia Diksha Nerurkar Darshan Kothari Aditya Rajpurohit Jainam Shah Elizabeth Devasia Trishla Singh Vivek Lotlikar, Deepa Kapadia Dhwanil Kapas Vallari Saxena Vivek D. Khache Sunita V. Kache Pranika Borkar Leena Sachin Danave Leena Uday Borkar Majuri Chawla Shivani Sachin Danave Dr. Arpita Masare Parshoi Hemani Babita Parag Hemani Raj Sameer Khamkan Sara Chauhan Vihaan Pandey Priyansha Bajoria Manasvi Masare Paarth Borkar Vama Ketan Dagli Kapil Wadhwa Guncha Wadhwa Omkar V. Khache Dhwani Chawla Darshan Khamkar Aayushi Shah, Mrs. P. Kharat Priyam Bhushan, Ria Khetan, Prabhavati Padamshisoni ,Kajol Kansaria Divit P. Shah Parth Dlip Shah Divya Tushar Samani, Utpal Shanghvi School Anjana Bahadur Indrakshi Paul Dhriti Sheth Urvi Ashwin Thakkar Satyam pramod Srivastava Rachna S. Jadhav Amberisch Gawaskar Prashant P. Dhamankar Bomble Chetan Shankar Poorvi Raghavendra Balkundi Parikh Srushti Vasundhara Samklecha Parekh Maitri Virendra Anuradha Deepak Rathod Parekh Yash Virendra. Kavita Rani Saumya Singh Prasanna R Iver



THANK YOU

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