

February 2008

Report

World Wetlands Day, 2008



Project Report No. 2007EA06

www.teriin.org

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Acknowledgements

We express our sincere gratitude to the enthusiastic students of Delhi Public School and S. S. High School, both based in Navi Mumbai, for taking active part in the World Wetlands Day event organised by TERI on February 2nd, 2008.

TERI places on record its sincere thanks to its Mumbai-based sponsors, Hydroair Tectonics (PCD) Ltd., Nova Oleochem Ltd. and Vasant J. Sheth Memorial Foundation, for providing financial support for this event.

Our special thanks to Mr. P. C. Chhabra, Principal, Delhi Public School, Navi Mumbai, for lending us the venue and infrastructure for conducting the event in the school. Thanks to Ms. Sunita Jha, Senior Mistress of the Pre-Primary Section, Mr. Umesh Kopad, Ms. Bindu Rajendran and Ms. Sonu Bobby, who helped us for the event on behalf of Delhi Public School, and to all the support staff of the school for assisting TERI during the event.

We also wish to thank Mr. L. P. Sabnis, Principal and Ms. Geetha Murali, Teacher, S. S. High School for judging the posters of the event and for their active support.

Thanks are due to The Ramsar Convention Secretariat, Switzerland, for providing the World Wetlands Day poster for display during the event. The information sourced from its website helped in further enriching the information on wetlands shared by TERI during the event.

We also thank Mr. Suraj Das and Ms. Annie Gregory, volunteers who spared their time to lead the nature walk during the programme and helped us in other event activities.

We are thankful to Mr. H. B. Singh and Mrs. R. K. Singh, Directors of Hydroair Tectonics (PCD) Ltd for sparing time to be the chief guests for the event and arranging to display a working model of water treatment system at the venue. Thanks to Dr. P. Venkateswaran and other experts from Hydroair Tectonics for patiently answering the children's queries and for doing the physico-chemical analysis of water from the wetland where the nature walk was conducted. We thank all of them for their efforts.

We also thank Mr. Bhima Jadhav for his active involvement and assistance in organising and conducting the event.

Contents

Overview: World Wetlands Day

General Introduction to Wetlands.....	1
World Wetlands Day.....	1
Rationale for the Event.....	1
Objectives.....	2

Event details

Planning.....	3
Nature Walk.....	3
Presentation.....	4
Demonstration of Waste Water Treatment system.....	5
Poster Competition.....	6
Quiz on Wetlands.....	7
Valedictory function.....	8

Conclusion.....	9
------------------------	----------

ANNEXURE 1 Banner prepared by The Ramsar Secretariat.....	10
--	-----------

ANNEXURE 2 Prize-winning Posters.....	11
--	-----------

ANNEXURE 3 Feedback from the schools.....	12
--	-----------

ANNEXURE 4 Press Reports Photographs of the event.....	14
---	-----------

ANNEXURE 5 Photographs of the event.....	17
---	-----------

ANNEXURE 6 Banner prepared by TERI.....	19
--	-----------

REFERENCES	20
-------------------------	-----------

1. Overview: World Wetlands Day

1.1 General Introduction to Wetlands



Wetland near Delhi Public School

Wetlands are areas where water is the primary factor controlling the environment and the associated flora and fauna. Wetlands are generally categorised in to five major types, viz. **marine** (coastal lagoons, shores & coral reefs), **estuarine** (deltas, tidal marshes & mangrove swamps), **lacustrine** (lakes), **riverine** (rivers & streams) and **palustrine** (marshes, swamps & bogs). (See References section). Wetlands provide significant

ecological, social, economic and environmental benefits. Important wetland functions include water storage, groundwater recharge, protection from storms, flood mitigation, shoreline stabilization, erosion control, and retention of nutrients, and sediments. Wetlands also contribute significantly to the region's economy by providing water, fishery resources, timber, wildlife resources, agricultural products and tourism opportunities. At the same time, wetlands represent important carbon sinks and contribute significantly to the global carbon cycle.). (See References section)

1.2 World Wetlands Day

Each year, February 2nd is observed as the 'World Wetlands Day'. It marks the date of the adoption of the Convention on Wetlands on 2nd February 1971, in the Iranian city of Ramsar on the shores of the Caspian Sea. Each year since 1997, government agencies, non-governmental organizations, and groups of citizens at all levels of the community have taken advantage of the opportunity to undertake actions aimed at raising public awareness of wetland values and benefits in general. The Ramsar Convention is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 158 Contracting Parties to the Convention, with 1718 wetland sites, totalling 159 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance. (See References section)

1.3 Rationale for the event

The satellite township of Navi Mumbai, with a total area of 344 sq km, harbours a variety of wetlands from rivers to creeks and

lakes to ponds in addition to a fairly dense cover of mangrove marshes. Mangroves have been hacked to local extinction in many places. Solid wastes, construction debris, religious offerings, industry effluents and domestic sewage dumped and released in the wetlands are polluting these important ecosystems. Due to a general lack of awareness and apathy about the wetlands, and the growing pressure of industrialisation and construction on these, the wetlands preservation and their sustainable management has become a critical issue in this area.



Sand dredging activity in a Navi Mumbai creek

Despite their importance, wetlands have not received the attention they merit. During the course of TERI's basic data collection and visits to wetlands in Navi Mumbai area, it realised that wetlands, inland or coastal, are being destroyed at an alarming rate due to several anthropogenic activities. However, immediate interventions could infuse a fresh lease of life into these

ecosystems and they could be saved from local extinctions. It is high time that the ecological, economic and aesthetic values of wetlands are acknowledged by the policy-makers and general public, and wetlands preservation gets a priority in future planning and sustainable development of the area.

To address this lack of concern about wetlands among general public, TERI organised an event to commemorate the World Wetlands Day on February 2nd, 2008, and create awareness amongst students about the wetland ecosystems. TERI believes that children can carry and propagate the message of wetlands preservation effectively among their family, friends and the society at large, and thus an awareness programme on wetlands would go a long way in sowing the seeds of environmental conservation in their minds.

1.4 Objectives

- (1) To sensitise students about the existence of wetland ecosystem in their vicinity.
- (2) To give students an overview of the wetlands, their functions, uses and preservation.
- (3) To encourage students to creatively express their views on the issue of wetlands preservation.
- (4) To enrich the knowledge of students about important wetlands in the world through a quiz competition.

2. Event Details

VENUE: Delhi Public School, Nerul, Navi Mumbai 400706

PARTICIPANTS: Over 150 students of Delhi Public School and S. S. High School

2.1 Planning

The event activities were planned and executed by TERI. TERI's team compiled the necessary information for the presentation and developed the quiz questions keeping in mind the local relevance of the issues to be discussed with the children during the event. *Healthy Wetlands, Healthy People* was The Ramsar Convention's theme of the World Wetlands Day, 2008, and wherever possible TERI tried to link the event to this theme.

The Ramsar Convention Secretariat, Switzerland, provided the World Wetlands Day poster (Annexure 1) for display during the event. The information sourced by TERI from The Ramsar Convention website helped in further enriching the information on wetlands shared with children during the event. Based on the written communication, The Ramsar Convention Secretariat has agreed to upload the proceedings of the event on its website www.ramsar.org.

The programme schedule followed for the event is given below:

Programme Schedule	Time
Registration	08.00 am
Nature walk	08.15 am
Refreshments	09.30 am
Presentation & information on Wetlands	10.00 am
Poster Competition	11.00 am
Quiz Competition	12.00 noon
Prize distribution & valedictory	12.30 pm
End of the programme	01.00 pm

2.2 Nature Walk



Birds seen during the nature walk

After registration and necessary instructions, the children proceeded for the nature walk. The objective of the nature walk was to sensitise the students about the existence of a wetland ecosystem in their vicinity. (Ref. Objective 1) The children were quite excited about the nature walk and had come prepared for it with caps, shoes and notepads. The entire group was divided into three subgroups; each subgroup was assigned a group leader and an

accompanying teacher.

The wetland next to Delhi Public School was selected for the nature walk. This wetland, which once was a part of the marsh land adjoining the mangroves, is now an enclosed water body with saline water having the pH value of 8.6. The water body attracts a large number of migratory birds like the Pintail, Greenshanks, Redshanks, Black-winged Stilts in addition to many species of resident birds like the Red-wattled Lapwing, White-throated Kingfisher, Little Cormorant, Median Egret, Grey Heron, White-cheeked Bulbul, etc. This shows that the wetland has enough food (zooplankton, worms, fish, etc.) in the water and on the peripheral plants for these birds to feed on. The children got live experience of observing these magnificent creatures at this wetland ecosystem.

Several other facts about mangroves ecosystem, creeks, intertidal flora-fauna and herpetology (study of reptiles and amphibians) were shared with them. Problems associated with wetlands and what initiatives children can undertake at their level were discussed during the walk. Wherever possible, the information shared during the nature walk was linked to the topics in their syllabus life cycle of butterflies, adaptations in insects, migration of birds, coastal habitats, etc. The attention of the children was drawn to the solid waste dumped along the banks and in the water of the wetland and the mangroves nearby.

The one-hour nature walk ended with a quick feedback session. The children shared their views about the wetland as some of them stay in the vicinity. They were amazed at the biodiversity this wetland attracted and expressed their concern about the abuse of the wetland.

After the nature walk, the children proceeded for refreshments provided by TERI.

2.3 Presentation on Wetlands



Children engrossed in the presentation

The presentation on wetlands gave students an overview of the wetlands, their functions, their uses and the need for their preservation (Ref. Objective 2).

The 40-minute PowerPoint presentation began with a recap on the nature walk. Students were able to give examples of

interaction between the biotic and abiotic components of wetlands, by citing examples from the nature walk. The presentation further went on to explain the concepts relating to the definition of wetlands, ecosystems and the different types of wetlands.

The importance of wetlands in terms of the various ecological services and the different goods that wetlands provide was shared with children. Emphasis was laid on providing information on the various ecological functions of wetlands and by explaining how these would benefit the society. Some of the functions discussed during the presentation were:

- Wetlands as natural buffers against natural calamities such as storms, cyclones, floods and tsunamis.
- Wetlands prevent shoreline erosion.
- Wetlands improve the water quality
- Wetlands as natural drainage channels
- Wetlands sustain biodiversity

The various goods of wetlands (both marketable and non marketable) were presented to students. These were broadly organised as natural, cultivated and in terms of aesthetic value for tourism, recreation and leisure. The threats to wetlands due to natural as well as anthropogenic causes were discussed with the children. More emphasis was laid on anthropogenic causes like pollution, infrastructure and aquaculture development, unsustainable water withdrawals, tampering with natural drainage channels, dredging of water beds, deforestation and introduction of exotic species, and their effects on the health of wetlands.

The presentation ended with an interactive session on how children can make a difference in preserving these vital ecosystems locally.

The information shared during the presentation was sourced from The Ramsar Convention Secretariat and other relevant literature providing information with regard to India and Mumbai. (See References section). The presentation was made in simple and easy-to-understand language with attractive pictures. The children were busy taking notes and enthusiastically took part in the interaction that followed the presentation.

2.4 Demonstration of Waste Water Treatment System

The students were sent in batches to take a look and understand the working of the Waste Water Treatment system model



Children understanding waste water treatment model put up Hydroair Tectonics

installed for demonstration purpose by Hydroair Tectonics (PCD) Ltd. The children learnt the working of the plant which is helpful in treating and converting industrial effluents and domestic sewage into clean water. Thus, the children were explained with demonstration that technology was available to treat the polluted water and clean it before being released in the natural ecosystems.

2.5 Poster Competition

The poster competition titled *Save the Wetlands* was held to encourage students to creatively express their views on the issue of wetlands preservation (Ref. Objective 3).

A white-coloured chart paper measuring 22 X 28 inches was provided to a group of four students. To let the students work on posters in a group was a deliberate attempt to encourage them to work and think on the topic as a team. The students'



Poster-making activity

imagination and skills resulted in excellent posters. The stiff competition in the quality of the posters complicated the judges' task in selecting the top three best posters while giving justice to all the participants. The parameters on which the evaluation was carried out were based on scientific content, innovativeness, eco-message, art and overall creative presentation of the poster.

Following groups were declared as the winners:

First Prize: Group comprising ...
Sushobhan Dhar, J. Kirtan, Pravin Kumar & Akshay Rakhija

Second Prize: Group comprising...
Ikya Jupudi, Kshwetali Patil, Jayati Trivedi & Ruchika Khemka

Third Prize: Group comprising...
Abhirup Bhattacharya, Sreyansh Somavanshi, R. Shravya & Reshma Pillai

The first three prize-winning posters are attached as Annexure 2.

2.6 Quiz

The quiz competition was held to enrich the knowledge of students about important wetlands in the world and their conservation issues through interaction (Ref. Objective 4).

Elimination Round



Children answering the Elimination Round of Quiz

A questionnaire comprising 25 multiple choice or objective type questions on wetlands were given to every participant. They were allotted 10 minutes of time to answer the questions. The questionnaire covered a wide range of topics related to wetlands found in India and rest of the world (See References section). At the end of 10 minutes, the questionnaires were collected and handed over to

the volunteers for checking.

Final Round

Twenty top-scoring students were selected to participate in the final round of the Quiz. The children were divided into four teams, ensuring that the children from both the schools were mixed in each team to encourage the team spirit. The four teams were named after well-known wetlands and Ramsar-designated sites in India, namely, *Chandertal* in Himachal Pradesh, *Wular* in Jammu & Kashmir, *Rudrasagar* in Tripura and *Kolleru* in Andhra Pradesh.



Final Round of Quiz

Of the five rounds of the final quiz, first round was based on Wetlands in Maharashtra; second round was based on wetlands in India; third was based on wetlands of the world; fourth was based on conservation issues of wetlands and fifth was a rapid fire round. The quiz was quite exciting with a lot of clapping and cheering for the participants. The questions that could not be answered by any of the four teams were asked

to the audience. The correct answers were revealed and discussed for the benefit of all the children. At the end of the five rounds there was a tie between team *Chandertal* and team *Wular*. Finally, team *Chandertal* answered the tie-breaker question successfully, and they were declared the winners.

Winners – Team *Chandertal* comprising...

Venkatraman Ganesh, Sanchita Seth, Deepika Balaji & Rahul Prasad

Runners-up – Team *Wular* comprising...

Kshitij Verma, Aanchal Verma, Yash Upadhyay & A. Praveen Kumar

2.7 Valedictory Function



*Prize distribution at the hands of chief guests
Mr & Mrs Singh*

The valedictory function was graced by Mr. H. B. Singh and Mrs. R. K. Singh, Directors of Hydroair Tectonics (PCD) Ltd, Mr. P. C. Chhabra, Principal of Delhi Public School and Mr. L. P. Sabnis, Principal of S. S. High School. The winners of the poster competition and the quiz competition received the prizes at the hands of the distinguished guests.

The winning teams of the Poster and Quiz Competitions were given educational CDs and books published by TERI on topics of global warming, water, climate change and forests. The prizes also included Solar-powered torches produced by TERI.

The programme concluded with a Vote of Thanks.

3. Conclusion



Mangroves in Navi Mumbai

Creating awareness about wetlands in Navi Mumbai was a unique initiative of TERI which aroused the curiosity of both students and teachers. Both the schools that participated in this event have expressed their interest to work with TERI in future on environment education and awareness programmes (Annexure 3). Having achieved the objectives of this event, TERI is satisfied with the outcome of the programme and will continue to work with students to instil in them a sense of environmental responsibility. TERI hopes that eventually the message of conservation of wetlands reaches their parents, family, friends and the society at large. The event was reported in the local press and these reports have played a major role in creating awareness about wetlands and the need for their preservation (Annexure 4). Local NGOs have approached TERI to conduct many more such events and programmes involving children in future.

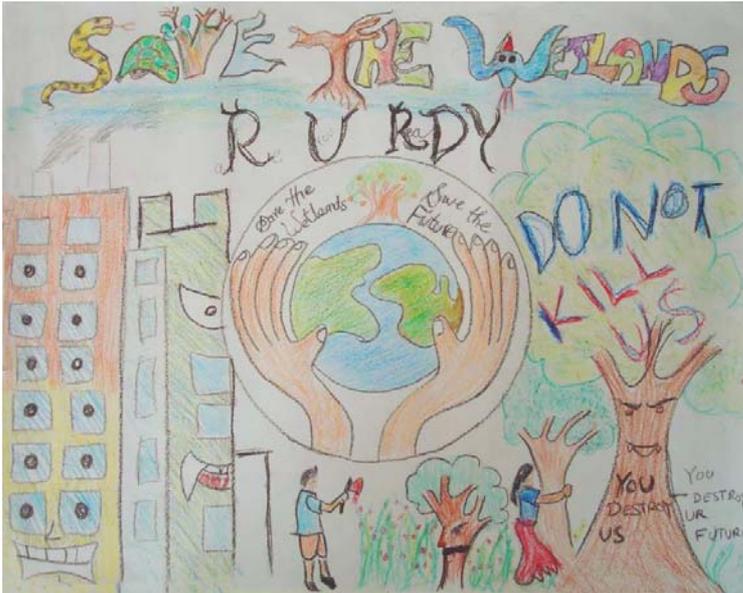
TERI is optimistic that the awareness generated through this event translates into a positive interest being developed in favour of the wetlands. Additionally, the success of this programme and the overwhelming response from students, teachers and school management has reinforced TERI's interest to have a long-term association with the cause of wetlands preservation.

Annexure 1 – Poster prepared by The Ramsar Convention Secretariat

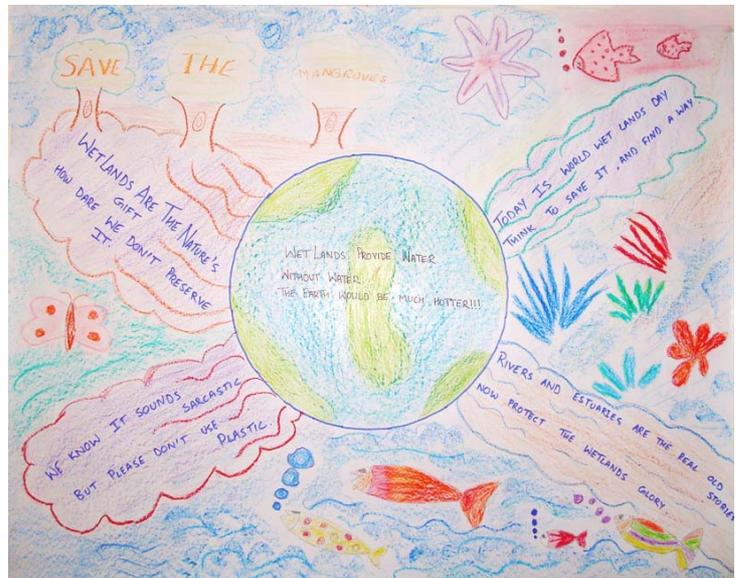


Banner prepared by The Ramsar Convention Secretariat

Annexure 2 – Prize-winning Posters



First Prize



Second Prize



Third Prize

Annexure 3 – Feedback from Delhi Public School



Delhi Public School, Navi Mumbai

Mr. Kedar Gore
Research Associate
TERI
Belapur, Navi Mumbai.

Date - 12th February 2008

Subject: Feedback on the World Wetlands Day Programme.

Dear Sir,

Thank you for conducting an excellent programme on 2nd February 2008. It was enjoyed by students and teachers equally. We are looking forward of working together in the future on various environmental education and awareness programmes.

Our feedback and suggestions on the event on 2nd Feb. 08 as per the parameters listed by you.

1. Theme of the event – Excellent! It was unique and very much relevant to the school curriculum and environmental issues.
2. Quality of resources content – Very good.
3. Continuity of information dissemination – Very good.
4. Receptivity – Very good. Foundation was laid to save wetlands.
5. Logistical Arrangements – Very good.
6. Target Audience – Manageable.
7. Would you like to host such events in your school – Yes, with pleasure
8. Suggestions –
 - Nature walk duration can be longer.
 - Certificate of Participation to the students.
 - A workshop for teachers to carry forward the environmental education and awareness programmes.

Thanking you
Yours Sincerely

A handwritten signature in black ink, appearing to read 'Sunita Jha'.

SUNITA JHA - Co-ordinator environmental education.

Annexure 3 – Feedback from S. S. High School and Junior College



Sahaj Jeevan Education Trust's (Regd.)

S. S. HIGH SCHOOL

INDEX No. 16.15.96

Plot No. 9, Sector - 44, Seawood, Nerul, Navi Mumbai- 400 706. Off.: 65143700

Ref: SSHS/PP/46/07-08.

Date: 12/02/2008

To,
Shri. Kedar Gore,
Research Associate,
"TERI"
318, Raheja Arcade,
Sector - 11, CBD, Belapur.

Sir,

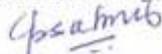
We are very much grateful to you & your entire team of 'Teri', for extending opportunity to our students in participating in world 'Wet Land Day Programme'.

The feedback from the teacher and students was collected which is as follows:

1. The Programme was associated with the school syllabus and was connected with Science, EVS.
2. Around 50% students liked Quiz Programme 50% liked poster making.
3. The students activity was well designed and implemented.
4. The Target audience was apt
5. Logistical arrangements were very good.
6. Yes, we would like to host such events regularly.

Suggestion: The schools should be selected as centre of 'Teri' and students should be train in different environmental issues and the preservation of environment.

Yours faithfully,


HEAD MASTER
S. S. HIGH SCHOOL
Seawoods, Nerul, Navi Mumbai.

Annexure 4 – Press Rep

DNA, February 03, 2008

Student import

TERI organised variou
DNA Correspondent . Nerul

With a view to spread aware-
ness among the students re-
garding wetlands in Navi Mum-
bai on the occasion of World
Wetlands Day on February 2,
Tata Energy Research Institute
(TERI) along with Ramsar Con-
vention, Switzerland organised
various competitions for the
students and informed them
about the importance to safe-



A poster making contest

Students get an insi importance of weth

TERI organised various competitions at Delhi Public School, Nerul

DNA Correspondent . Nerul

With a view to spread aware-
ness among the students re-
garding wetlands in Navi Mum-
bai on the occasion of World
Wetlands Day on February 2,
Tata Energy Research Institute
(TERI) along with Ramsar Con-
vention, Switzerland organised
various competitions for the
students and informed them
about the importance to safe-

guarding the wetlands. The
competition was held at Delhi
Public School, Nerul.

Coordinator of TERI, Dr An-
jali Parasnis informed that this
was first such initiative in Navi
Mumbai to sensitize the stu-
dents from the city as Navi
Mumbai is also a reclaimed
area. "Hence we are focusing
on the long term prevention
and looking at developing ini-
tiatives by the students for the

sustainability of the ecosys-
tems." She said. TERI is an in-
dependent research institut
focusing on energy, environ
ment and sustainable develo-
pment and is devoted to
efficient and sustainable use
of natural resources.

Students from two
schools — DPS, Nerul and
SSI school, Seawoods partici-
pated in the event. Au-
thorities from TERI took
students for a nature walk
near the wetlands in the
area followed by a presen-
tation on the importance of
wetlands and gave them
lessons on how to preserve
them.

A quiz and poster com-
petition was also organized
on the occasion for stu-
dents. A live replica of a wa-
ter purifier in the industries
was also their and the stu-
dents were told on how to
recover the energy from
waste. The model was pre-



A poster making contest was also held on the occasion.

Umesh Pawar/DNA

Annexure 4 – Press Report

Loksatta, February 05, 2008

लोकसत्ता

मंगळवार, ५ फेब्रुवारी २००८

पाणथळीच्या जागेत
चिमुकल्यांचा वावर

नवी मुंबई/प्रतिनिधी
पल्लेशी पक्षी पाहुण्यांचे
आश्रयस्थान असणाऱ्या
पाणथळीच्या जागेत पर्यावरणाच्या
हितासाठी संरक्षित राहिल्या
पाहिजेत, यासाठी 'टैरी' या
पर्यावरणवादी संघटनेने कंबर
कसली असून, नवी मुंबईतील
पाणथळीच्या जागांची बेथील
विद्यार्थ्यांना ओळख चावी, यासाठी
शनिवारी जागतिक वेटलॅण्ड दिनाचे
अनिर्णय साधून या संस्थेने दिल्ली
पब्लिक स्कूलच्या विद्यार्थ्यांना

पर्यावरणदृष्ट्या महत्त्व विद्यार्थ्यांना
संस्थेच्या कार्यकर्त्यांनी पटवून दिले.
पाणथळीच्या जागांची त्यासाठी
प्रत्यक्ष सफर करण्यात लक्षी,
अभ्यासक्रमात असणाऱ्या
पाणथळीच्या जागांविषयी
विद्यार्थ्यांना माहिती असते, मात्र
आपल्या घराच्या पाठीमागे काय
आहे, हेच मुळात या विद्यार्थ्यांना
कधी-कधी माहीत नसते. हे काम
टैरीने केल्याचे या संस्थेचे
समानवयक वैदास गेरे यांनी
सांगितले.



पाणथळीच्या जागांची सुंदर सफर
घडवून आणली.

नवी मुंबईला सुमारे ६०
किलोमीटर लांबीचा खाडीकिनारा
लाभलेला आहे. याजागी मोठ्या
प्रमाणात पाणथळीच्या जागा निर्माण
झालेल्या आहेत. जेएनपीटी येथे
अशाच पाणथळीच्या जागांवर
उतरलेल्या एअरपोर्टी पक्षी
फ्लेमिंगोची गेल्या महिन्यात शिकार
करण्यात आली होती. तेव्हापासून
या जागा सुरक्षित नसल्याचे प्रकटने
जाणवू लागले होते. जागतिक
पाणथळीवर पर्यावरणाचे काम
करण्याच्या 'टैरी' या संस्थेने
पाणथळीच्या जागांविषयी प्रबोधनाचे
कार्य हाती घेतले आहे.

पाणथळीचा मार्गावरील दिल्ली
पब्लिक स्कूलच्या २५० विद्यार्थ्यांन
घेऊन शनिवारी (२ फेब्रुवारी)
जागतिक पाणथळी दिनाचे अनिर्णय
साधून पाणथळी म्हणजे काय, या
जागेचे मानवी जीवनतील महत्त्व
या टिकाणी आढळणारा पक्षांचा
वावर, पाण्याच्या जागांचे

विद्यार्थ्यांसाठी चित्रकला स्पर्धेचे
आयोजन करण्यात आले होते, त्यात
सेव्ह वेटलॅण्ड हा विषय प्रामुख्याने
देवण्यात आला. अनेक विद्यार्थ्यांनी
या स्पर्धेत भाग घेतला. त्यातील
सुचोपन धर, जे. कोलीकन,
प्रवीणकुमार, अक्षर रत्नेजा या
विद्यार्थ्यांच्या वटाने बाबी मारली. या
स्पर्धेनंतर क्विझ कॉन्टेस्ट आयोजित
करण्यात आली होती. जेएनपी,
रुद्रसागर, कॉल्सेरु, चंद्रताल या
चार गटांनी त्यात भाग घेतला होता.
पर्यावरणाविषयी अनेक प्रश्न या
प्रश्नमनुषेत विचारण्यात आले.
त्यात २५ गुण प्राप्त करून
चंद्रताल या गटाने बाबी
मारली.

शहरातील पाणथळीच्या जागांना
संरक्षित करण्यासाठी 'टैरी' विदेशी
प्रयत्न करीत असून, विद्यार्थ्यांच्या
प्रबोधनाने ही सुरुवात असल्याचे
गेरे यांनी सांगितले. टैरीचे
पर्यावरण आणि ऊर्जा या दोन क्षेत्रात
मैली ३५ वर्षे जागतिक पाणथळीवर
कार्य आहे. ■

Annexure 5 – Photographs of the event

Poster Competition



Children busy making posters

Presentation



Children engrossed in the presentation

Annexure 5 – Photographs of the event

Quiz



Quiz in progress



Winning team of the Quiz

Valedictory Function



Students receiving prizes at the hands of the chief guests Mr. & Mrs. Singh



Chief Guests, Mr & Mrs Singh, being given a token of appreciation from TERI



Dr. Anjali Parasnis, Head & Coordinator, TERI Mumbai, extending the Vote of Thanks

Annexure 6 – Banner prepared by TERI

teri

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The Energy and Resources Institute
Mumbai Office

celebrates

World Wetlands Day
February 02, 2008

Venue Courtesy: Delhi Public School, Navi Mumbai

Banner created by TERI for the event

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