



WWF

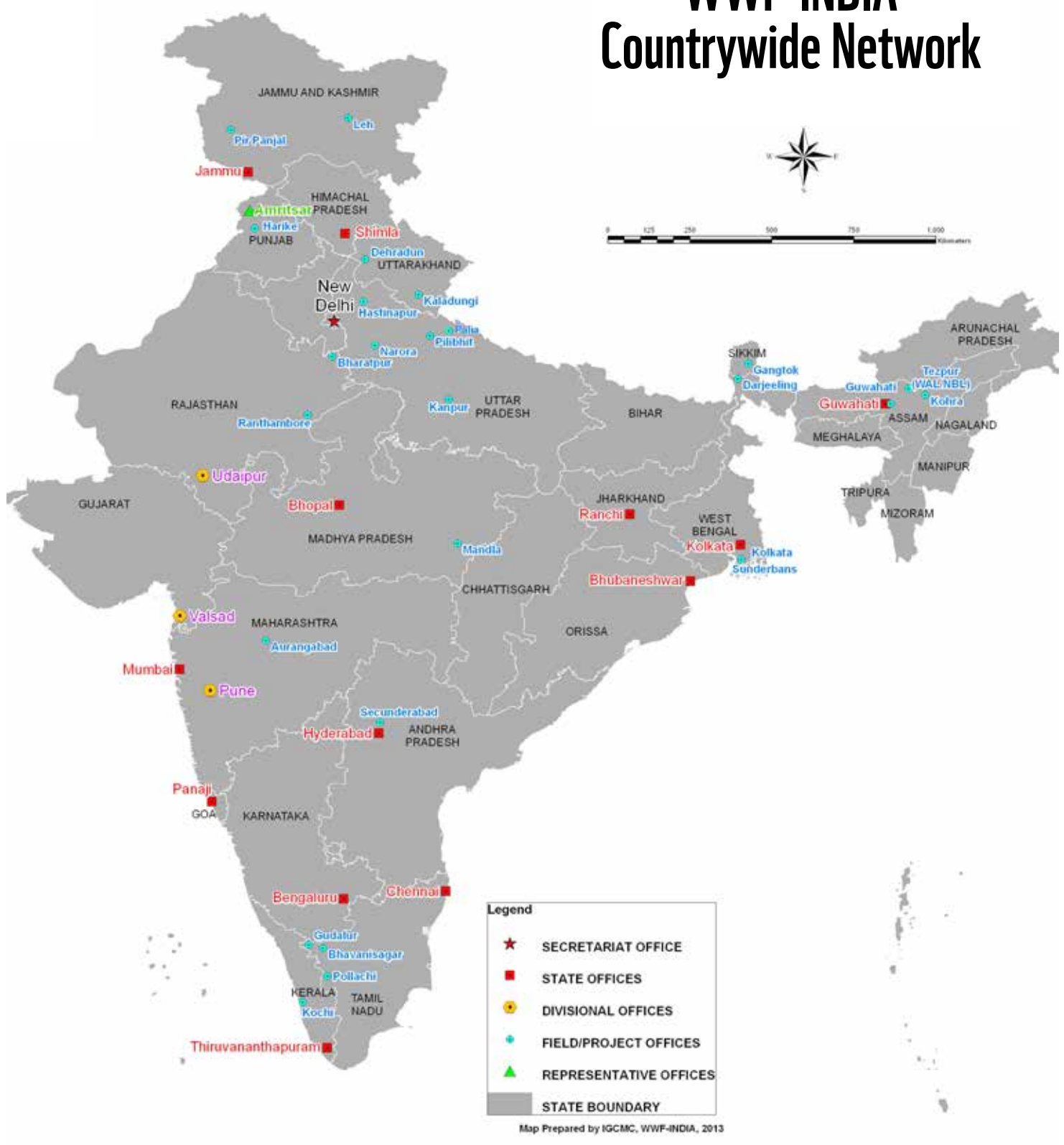
REPORT

IND

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# Annual Report 2013

# WWF-INDIA Countrywide Network



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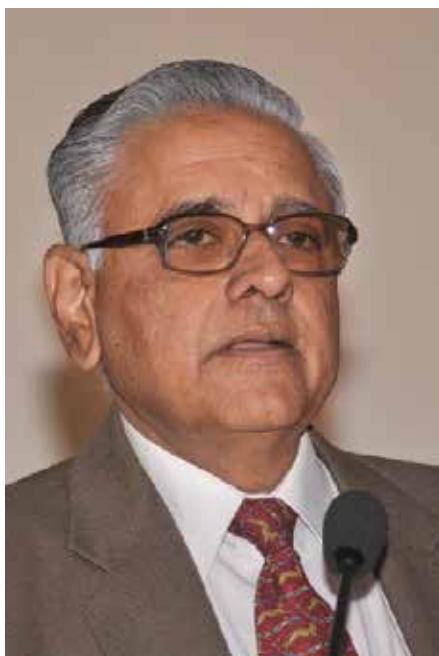
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# PRESIDENT'S NOTE

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This year the Annual Report looks at the multi-layered conservation work of WWF-India through photographs. WWF-India has for over forty years worked tirelessly in species and landscape conservation. The focus of the organization has expanded with the passage of time to include other exigent problems such as climate change and the need to find alternate solutions to our energy problems.

Ours is an inter-connected world where not much lives in isolation and therefore there is a continuous need to ensure that the balance between nature and humankind remains equitable and harmonious. I commend the WWF-India team for their dedication and enthusiasm in looking for innovative solutions to the country's ecological problems and to keep this balance in check.

**Divyabhanusinh Chavda**  
**President, WWF-India**

# FROM THE SG & CEO

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The Annual Report 2013 showcases the areas of WWF-India's work through a photographic journey. In doing so, it draws upon pertinent ecological concerns that India faces such as an acute scarcity of natural resources in trying to meet the consumption needs of its growing population. This has a huge impact on areas of critical ecological importance because natural resources are being depleted faster than they can be replenished. The erosion of natural resources also leads to habitat destruction and with it adversely affects the species therein.

To address this issue, WWF-India through its specialist programmes works closely across various platforms from government agencies, civic bodies, schools to companies and individuals. The range of WWF-India's programmes reflected here consist of species conservation including marine life and its sustainability, contributing to conservation initiatives in river basins, sensitizing schoolchildren on the importance of environment conservation. WWF-India also works to restore the freshwater bodies, promotes sustainable livelihoods and sustainable agriculture through better management practices and market transformation.



This large and varied nature of our work, nationwide and attempting to reach various groups of society is possible only due to the contribution of WWF-India's team, the support of its network, government agencies, institutional partners and thousands of supporters who participate in and encourage our work. Our sincere thanks to them all!

**Ravi Singh**  
**Secretary General & CEO**  
**WWF-India**

## A TIME FOR CHANGE

The global demand for food, water and natural resources has doubled in the last 50 years – and it is still growing. We are using more than the Earth can provide. Our demands do not just affect us humans – they are having catastrophic consequences on the plants and animals we share the planet with and destroying the natural systems we all depend on.

WWF aims to address these problems of the planet without compromising the needs of humans, by promoting methods for sustainable development where human beings live in harmony with nature.

The Annual Report 2013 focuses on these endeavours of WWF-India round the year through a photographic journey. The photographs depict the efforts towards creating a change that will help us deal with some of the environmental issues that we face.



# JANUARY



BIRDS OF  
HARIKE



## MONITORING TIGERS



BUILDING AN  
ENVIRONMENTALLY-  
CONSCIOUS  
GENERATION



## MONITORING TIGERS

### Supporting tiger conservation through monitoring

January 2013 saw WWF-India continuing engagement in monitoring tigers and their prey at multiple sites across India. Phase IV of the monitoring activity was initiated according to the guidelines of the National Tiger Conservation Authority, Government of India.

The Valmiki Tiger Reserve (VTR) was one of the key sites where such monitoring was undertaken. The minimum tiger population at VTR was estimated through a systematic scientific framework using camera traps. The study recorded 22 individual tigers, including breeding females and cubs, thereby signifying a resident tiger population in the reserve. The results of this study will now be used by WWF-India to devise and advocate appropriate conservation measures with the relevant government authorities to ensure the long-term survival of tigers and other wildlife in VTR.

In addition to tigers, the study also captured on camera, leopards and lesser cats like the fishing cat, jungle cat and leopard cat, as well as prey and other species. Three of these species - Himalayan serow, crab-eating mongoose and yellow-throated marten were reported for the first time in VTR through photographic evidence obtained from the camera traps.



A camera trap been installed at the Valmiki Tiger Reserve (VTR)







### **Besides Valmiki, monitoring was carried out in the following sites:**

- Kaziranga Tiger Reserve, Assam
- Pakke Tiger Reserve, Arunachal Pradesh
- Manas Tiger Reserve, Assam
- Sundarbans (24 Paraganas, Basirhat, East and West National Parks), West Bengal
- Ramnagar Forest Division, Uttarakhand
- Dudhwa Tiger Reserve, Uttar Pradesh
- Phen Wildlife Sanctuary, Madhya Pradesh
- Sathyamangalam TR, Tamil Nadu
- Anamalai TR, Tamil Nadu
- Wayanad Wildlife Sanctuary, Kerala
- Satpura Tiger Reserve, Madhya Pradesh
- Nilgiri North Forest Division, Tamil Nadu
- Marat Longri Wildlife Sanctuary, Assam



## BIRDS OF HARIKE

Harike Wildlife Sanctuary is one of the largest wetlands in northern India, situated at the confluence of two major rivers, the Sutlej and the Beas. WWF-India has been conducting an annual bird census in the sanctuary since 2011 with support from the Department of Forest and Wildlife Preservation, Government of Punjab. During the census in January 2013, a total of 72,488 waterfowl representing 76 species were recorded. Despite a drop in count of the number of birds, there has been an increase in species diversity in this year's census.

These bird counts, the first of their kind in the area, help towards collating information about the number and varied species of birds visiting the sanctuary. This abets WWF-India's work on birds, especially waterfowl conservation. In addition to actual on-ground work, WWF-India has been actively engaging communities residing around the bird sanctuary in the census to increase their stake in the sanctuary.



© Gitanjali Kanwar/WWF-India

Blue throat is a small insectivorous bird that winters in the Asian subcontinent

## BUILDING AN ENVIRONMENTALLY CONSCIOUS GENERATION



© Mriganka Sharma

Students of Deshbhakta Tarun Ram Phukan M.E School, Chakradeo (Deepeer Beel), Assam involved in a cleanliness drive

WWF-India has been working to build an environmentally aware generation through both formal and non-formal approaches in education. Education for Sustainable Development (ESD) is an approach that acts as a powerful enabler in helping people work towards the goal of sustainable development. It working towards this goal it calls for a re-orientation of policies, curriculums, teacher training, changes in the pedagogy in local schools, communities and workplaces.

Beginning January 2013, the ESD training has led to the District Institutes of Education and Training (DIETs) in Assam to sign up to adopt one Model School each in the state's 15 districts. It is envisioned that the Model Schools through their collaboration with key educational bodies in the states and country will aid in furthering and speeding up education and conservation and thus the mandate of sustainable development.

# FEBRUARY



IMPACT OF  
GRAZING ON  
CRITICAL  
CORRIDORS



RESCUE AND  
RELEASE OF  
GANGES RIVER  
DOLPHIN



REDUCING WATER  
FOOTPRINT IN  
AGRICULTURE





# REDUCING WATER FOOTPRINT IN AGRICULTURE

Integration of Better Management Practices in  
production of cotton and other crops

Increasing demands for food and fibre have led to increased water requirements in agriculture. It is estimated that this requirement will rise from 550 to 719 billion cubic metres. Concurrently, ground water availability for agriculture will fall by 21 per cent from 2010 to 2025.

Better Management Practices (BMPs) in agriculture proposed by WWF-India aim at improving the hydrology where commercial crops like cotton, rice and sugarcane are being grown by optimizing water application and reducing chemical contamination. This will also enrich the biodiversity in those areas where BMPs are being adopted.

It has been noted that the BMPs adopted by farmers in Andhra Pradesh have reduced water application in cotton areas by 30 per cent and in Maharashtra by 19 per cent as on/ of February 2013. BMPs have thus saved around 378.33m<sup>3</sup>/ha and 900 m<sup>3</sup>/ha of water in Andhra Pradesh and Maharashtra respectively. Furthermore, the saving in water has also resulted in a reduction of energy used for water application.



© WWF-India

Women engaged in cotton cultivation by adopting Better Management Practices (BMPs)









## IMPACT OF GRAZING ON CRITICAL CORRIDORS

In February 2013, WWF India conducted an analysis of the impact of grazing on critical corridor areas, in particular, the Kanha-Pench corridor in Central India. The assessment included household surveys, focus group discussions and participatory rural appraisals in 10 villages in this critical corridor. The study obtained data on the number and types of livestock, fodder preferences and sources, seasonal variations in use of forest areas for grazing, extent of grazing and income generated from livestock. Secondary data on livestock populations and implementation of relevant schemes was also obtained from the block offices.

The study has contributed towards development of village-level plans to reduce the impact of grazing on forest areas.



© Vishnain Uppal/WWF-India

Rampant cattle-grazing along critical wildlife corridors such as the Kanha-Pench corridor adversely impacting forest areas

## RESCUE AND RELEASE OF GANGES RIVER DOLPHIN



© Parmanand/WWF-India

Ganges river dolphin being released into the Ghaghara River in Uttar Pradesh

A female Gangetic river dolphin (*Platanista gangetica gangetica*) weighing 150kg and measuring 2.1 feet was rescued from an irrigation canal in Gonda District in Uttar Pradesh and released in Ghaghara River at Ayodhya Ghat 45km away from where the dolphin was rescued. The Gangetic river dolphin is one of the seven species of focus for WWF-India's Rivers for Life, Life for Rivers programme.



MARCH

60+

EARTH HOUR

# EARTH HOUR 2013

Earth Hour is WWF's global campaign inspiring individuals, organizations and governments to take a stand against climate change – every year on the last Saturday of March. Millions of people across the globe unite in a spectacular show of support to raise awareness about climate change by switching off their lights from 8:30pm to 9:30pm. From this darkness emerges greater enlightenment about climate change and the need to make more planet-friendly choices.

## INDIA SWITCHES OFF FOR THE FIFTH YEAR



### With every consecutive celebration of Earth Hour India breaks its own records of participation

In keeping with the main premise of Earth Hour 2013, signature campaigns, musical evenings, cyclothons and walkathons, candlelit marches, dance performances, magic shows, flash mobs and recycling drives were organized to promote the use of renewable energy.



Guwahati, Assam celebrated Earth Hour for the first time in 2013



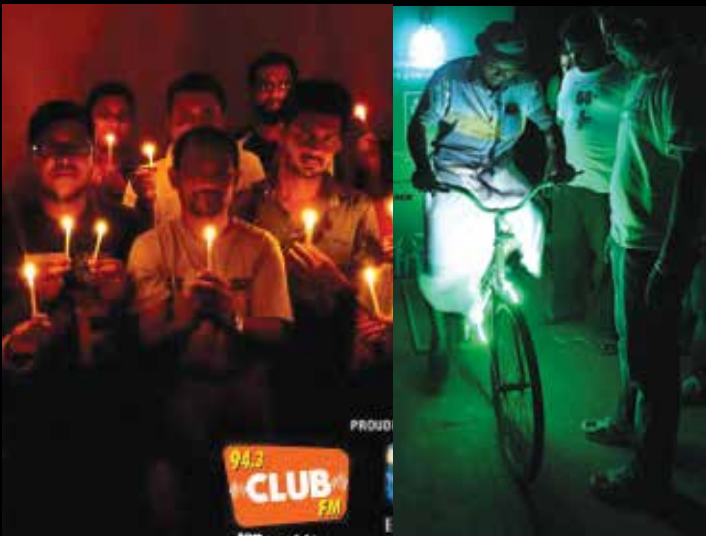
Solar lanterns light up Earth Hour in Delhi



# EARTH HOUR 2013 HIGHLIGHTS



The Earth Hour Delhi Cyclothon saw the participation of a four-year-old boy to a 65-year-old senior citizen. The crowd was a mix of school students, college-goers, cycling club members and environment enthusiasts.



Kochi ran a successful campaign for the fifth with week-long activities like walkathons and awareness drives, door-to-door promotion and an Earth Hour vehicle driving across the city. An exhibition of solar powered products, along with a cycle that creates power by pedaling was the main attraction. Hundreds of supporters gathered for an evening of musical and theatrical performances



World famous sand artist Sudarshan Pattnaik pledged his support to Earth Hour with this beautiful sand painting



Participants from Aasayi in Etawah District, Uttar Pradesh also pledged their support for Earth Hour

## EARTH HOUR AMBASSADORS

Earth Hour is a peoples' movement and a live example of what individual action can do. Earth Hour gives each one of us a chance to show our individual commitment towards the cause.

**Ajay Devgan**  
Actor



We should all try to promote environment-friendly living at home to set an example for our future generations. Earth Hour gives each one of us a chance to show that individual commitment and seek change.

**Venkatesh Prasad**  
Former Indian bowler



I am sure Earth Hour 2013 will inspire individuals to become more aware about their responsibility towards the environment. If we want to live in a healthy and clean planet, we must also take action accordingly.

**Jiiva**  
Actor



Earth Hour strives to create awareness about the harmful effects of climate change and how we as individuals can contribute to sustainable living and contribute to renewable energy.

**Parambrata Chatterjee**  
Actor



If we aspire for a clean and healthy environment, and for cities that develop sustainably, then we should be aware of our part as well, and be willing to change our own behaviour.

**Shruti Hassan**  
Actor



# ICONIC BUILDINGS SWITCH OFF



From the Rashtrapati Bhavan, the PM's and CM's residence and India Gate to the city's oldest and biggest commercial hub, all switched for Earth Hour



The Mumbai CST administrative building, the BMC building, Gateway of India, Marine Drive, Taj Hotels, Trident and many more buildings plunged into darkness



Landmark buildings such as the Mysore Palace switch off for Earth Hour



The Earth Hour fair at Dilli Haat



Earth Hour drill at a mall in Chennai



DB Mall switched off in Bhopal



NCC Cadets Rally, Karnataka



RIMC cadets have a candlelight dinner for Earth hour



Over 3000 people witnessed the switch off at Connaught Place



# APRIL



## REVIVING THE RAMGANGA



## RHINO MONITORING IN DUDHWA



## PARTNERING FOR CONSERVATION



# REVIVING THE RAMGANGA

## WWF-India brings people together for the river

WWF-India's Rivers for Life, Life for Rivers initiative, supported by the HSBC Water Programme, focuses on issues of sustainable water management, urban and industrial water footprint and stewardship. It also focuses on climate change adaptation, conservation of habitats and population of seven species in the Ganga and the Ramganga, a key tributary of the Ganga. This programme envisions improving the ecological health of these river systems thereby ensuring long-term water security to communities, businesses and nature.

Moradabad, known as *pital nagari* (brass city), one of the industrial cities on the banks of the Ramganga has a significant ecological impact in the river. With population of 900,000 this city discharges approximately 100 million litres of untreated sewage daily into the Ramganga. In addition, the effluents from brassware, sugar and paper and pulp industries have left the river ecologically dead. Moradabad is a classic example of competing water uses coming into play. WWF-India in collaboration with the District Administration of Moradabad initiated the Ramganga for Life, Life for Ramganga campaign to sensitize diverse stakeholders and inspire them to take action to revive the river. Launched in April 2013, the campaign started with a Ramganga Padyatra (Walk for the River) to help mobilize stakeholder action and brought together students, teachers, government officials, businesses, and citizens together for the cause of the river. The District Administration of Moradabad also constituted the Ramganga Conservation Committee with District Magistrate and key government departments, NGOs, and experts to steer the revival of Ramganga.

WWF-India also set up a multi-stakeholder group, the Ramganga Mitra (Friends of the River), to contribute to river conservation. In a meeting held in October 2013, 80 people from the city including the Mayor signed up to be a Ramganga Mitra, pledging to work for the conservation of river. So far 360 people have signed up as Ramganga Mitras from urban and rural Moradabad. A Ramganga Choupal, a knowledge centre on Ramganga conservation, was also launched in October 2013 where information on the threats and solution in the form of creative exhibits for the conservation of the river are displayed.



Over 2000 citizens of Moradabad took an oath to work for the conservation of the Ramganga











## RHINO MONITORING IN DUDHWA

The escalation in demand of illegal animal parts has given rise to the need for a better monitoring programme to ensure the safety of wild animals. The ID-based rhino monitoring programme implemented in the Dudhwa National Park of Uttar Pradesh is a step towards accomplishing that goal for the first time in India.

The rhinos in the Park are now monitored on a daily basis with the aid of these IDs. The data accumulated over a period of a month is compiled by WWF-India into a report. Each report contains the remote-sensed data of the sighting information of each individual rhino and the patrol effort of the staff. These reports are then provided to the park management for the betterment of monitoring and conservation of these mega-herbivores.



© Ruchit Sharma

Forest Department staff on rhino ID-monitoring patrol

## PARTNERING FOR CONSERVATION



© WWF-India

WWF-India and Oxford Bookstore partner for rhino conservation in Assam

**OXFORD BOOKSTORE:** Oxford Bookstore and WWF-India have joined hands for an innovative and exciting umbrella partnership towards raising funds, public consciousness and sharing responsibility for WWF-India's rhino conservation work in Assam. Oxford Bookstore is donating a share of their proceeds from Cha Bar, a tea café housed within the bookstore. It is also encouraging its customers to support WWF-India programmes as well as its conservation products.



© WWF-India

Tata Housing lends support for conservation initiatives

**TATAHOUSING:** During the first year in Khangchendzonga Landscape in Sikkim and Western Arunachal Landscape in Arunachal Pradesh, support from Tata Housing has helped strengthen partnerships with both government and non-government partners by involving them in the various initiatives. Teacher training camps were organized with a participation of 74 teachers from 45 schools. Awareness programmes reached out to over 500 students from 20 schools.

In Arunachal Pradesh, baseline data on red panda status and habitat was generated through field surveys in two districts while the biodiversity in and around the Bhagajang Wetland Complex was documented.



# MAY



BUILDING  
CAPACITY  
OF FOREST  
DEPARTMENT



KADARS GET RECOGNITION OF  
COMMUNITY FOREST RIGHTS



TOWARDS  
REDUCING  
CLIMATE  
VULNERABILITY



# KADARS GET RECOGNITION OF COMMUNITY FOREST RIGHTS

Primitive tribe granted legal rights for community forest resource use

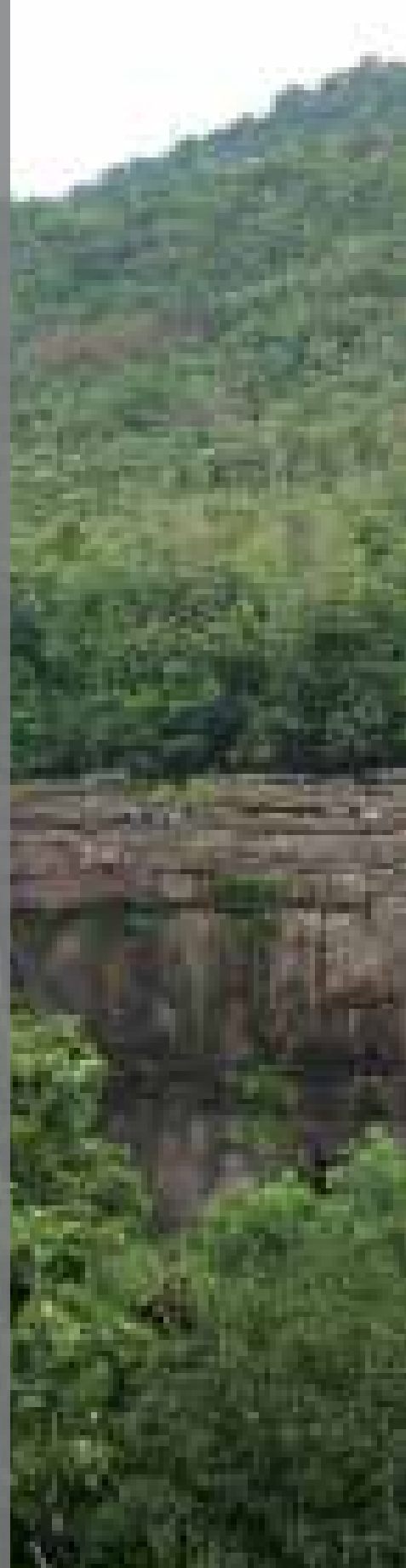
Prince Charles visited Vazhachal Forest Division and interacted with members of the Kadar community, a primitive tribe, whose rights over their community forest resource use area were approved in 2013. The Kadars had applied for recognition of their community rights under the provisions of the Forest Rights Act, 2006, for which they received their titles in 2014.

The community, which resides in eight settlements in the forest area, is primarily dependent on Non-Timber Forest Produce (NTFPs), such as honey, incha and thelli for their livelihoods. They now have tenurial security through rights to manage, protect, regenerate and conserve around 400km<sup>2</sup> of forest which they have been traditionally protecting and conserving for sustainable use.

WWF-India, in partnership with the Kerala Forest Department and other local organizations, has played a key role in ensuring that the Kadar community's rights over the Vazhachal forests received legal recognition under the Forest Rights Act, after sustained engagement with the community and other stakeholders since 2007. WWF will continue to engage with the community to develop and implement sustainable resource extraction models which will ensure livelihood security for the community, while at the same time safeguarding the health of these forests.



Prince Charles meets Kadars at Vazhachal Forest Division









## BUILDING CAPACITY OF FOREST DEPARTMENT

The Bhimbandh Sanctuary in Bihar has a large number of villages located within and in its surrounding areas. Most of the villagers are tribal and dependent on the forest resources for their sustenance. Due to extremist forces and limited employment opportunities, the villagers are also antagonistic towards the Forest Department. This makes it imperative to strengthen the interface between the department and local community for conservation of the Bhimbandh Sanctuary.

A two-day capacity building workshop was held on 16 May 2013 for Forest Department staff of Bhimbandh Sanctuary in Bihar by WWF-India on preparing micro-plans and building effective partnerships with local communities to carry out participatory situational analyses.



© Harshad Karandikar/WWF-India

Social mapping exercise in progress

## TOWARDS REDUCING CLIMATE VULNERABILITY



© WWF-India

Participatory Rural Appraisal in progress in Medinipur village, Moradabad District

WWF-India and the district administration conducted a survey in 30 villages in Moradabad to map the threats to the river and shortlisted eight, to develop model conservation programmes addressing these threats. The objective of these models is to improve ecological health through sustainable water, agriculture practices thereby minimizing the vulnerabilities of the local community to climate change. Participatory rural appraisals are being conducted to develop the conservation plan in these villages.



# JUNE



## UNDERSTANDING OTTERS



## SEIZE YOUR POWER



## CONSERVING THE SUNDERBANS





# STUDYING OTTERS

## Baseline data on otters collected

A report was compiled in June 2013 to ascertain the population status and habitat choices of otters in Harike Wildlife Sanctuary. Evidence of otter occurrence was found to be concentrated in the areas like river Beas, Reyasat and some parts of Khetan while the river Sutlej was completely avoided by the species.

Lack of baseline data on the ecology of otters is one of the major constraints that the conservation of the species is facing, thus necessitating status assessments of otters in Indian waters. Distribution and abundance assessment are a key step to ensure their successful management and conservation.



© Gitanjali Kanwar/WWF-India

Otters generally occur along the large rivers and lakes and when occupying saltwater areas, they require freshwater nearby



© Gitanjali Kanwar/WWF-India

Otters are primarily piscivorous (ie they feed on fish) which accounts for over 70 per cent of their diet







Smooth-coated otter near Harike Barrage



Smooth-coated otter (Male) in the water



Impressions of otter trackset close to Harike ferry point





# CONSERVING THE SUNDARBANS

## Estimation of tiger numbers reveals positive results

In June 2013, WWF-India in collaboration with the Sundarbans Forest Department established a robust tiger estimation in the Sundarbans, covering the Sundarbans Tiger Reserve and 24-Parganas (South) Forest Division. The baseline estimate for number of tigers in the Indian Sundarbans was found to be over a 100.

The estimation used remotely-triggered camera traps and the capture framework to estimate the minimum population and density of tigers. A total of 214 camera trap pairs were used to cover approximately 2142km<sup>2</sup>. The outcome of the intensive camera trap study helped the West Bengal forest administration in taking a decision to declare about 556km<sup>2</sup> of reserve forest area as the West Sundarbans Wildlife Sanctuary under Section 18 of the Wildlife (Protection) Act, 1972. This has led to a significant increase of the protected area in the Indian Sundarbans.



©WWF-India

Camera trap photo of a tiger in Sundarbans

## CONSERVING THE SUNDARBANS A PHOTO ESSAY







1. Preparing the camera traps
2. Searching for high elevation areas
3. Getting down the boat at the destination
4. It's tough finding a proper route!
5. Searching for signs of a tiger
6. Based on sign survey suitable spot for placing the camera traps is selected
7. The camera traps are deployed and some vegetation cleared to enable clear line of sight for the cameras
8. The lure is applied near the camera traps
9. The team gets back to the boat
10. After a certain amount of time the team goes back and collects the camera traps and brings them back for data analysis
11. The images are downloaded and WWF-India researchers begin the tiger estimation process for the Sundarbans

Photos: © Sundarbans Team/WWF-India





## SEIZE YOUR POWER

WWF-India launched a renewable energy (RE) campaign in June 2013 as a part of the global Seize Your Power (SYP) campaign. The campaign, globally, calls for greater investment for renewable energy and seeks better policies, increased investments and greater public awareness towards renewable energy. As part of the campaign, Renewable Energy Fairs were organized from 1-22 October 2013, across four cities – Bhopal, Shimla, Dehradun and Bangalore. Efforts were made to promote simple and practical renewable energy solutions among individuals and institutions. The campaign was also promoted online which garnered huge public participation as they pledged their support for renewable energy. A T-shirt designing contest, with the theme of designing a green future, was also held as part of the online campaign.

With an estimated reach of more than 4.5 lakhs people and more than 3000 online pledges on WWF-India website, the campaign has been successful in creating increased awareness among various stakeholders towards making a shift to RE. The campaign has also mobilized people for pledging their support for renewable energy.



© WWF-India

School students get live demonstrations on renewable energy products in Dehradun



© WWF-India

Renewable energy products on display in Bangalore



© WWF-India

In Bhopal, around 200 students and nature enthusiasts took part in a rally "Walk for Renewable Energy" walking through busy streets holding placards



© WWF-India

A visitor participates in the slogan and signature campaign in Shimla





# JULY



PREDICTIVE  
MODELLING FOR  
CONSERVATION



## HIMAL RAKSHAKS OF SIKKIM



# HIMAL RAKSHAKS OF SIKKIM

Community-based volunteers aid conservation efforts in alpine landscape

The high altitude alpine zone of the Sikkim Himalayas harbours exceptional biodiversity and is of great ecological, cultural and economic significance. This zone is the source of many Himalayan rivers which sustain millions of people downstream. While a number of sanctuaries and national parks have been notified to protect this unique alpine landscape, there is a need to address on-ground conservation initiatives effectively.

In order to address this issue, a community-based individual volunteer programme – Himal Rakshak – was piloted in Sikkim in 2006. WWF-India and other civil society organizations contributed in the capacity building of the Himal Rakshaks. This empowered the Himal Rakshaks to take the lead in mobilizing the local community to reducing the conservation threats like retaliatory carcass poisoning, hunting and littering by tourists in this region. Consequently, wildlife populations have started to bounce back, solid waste is better managed and a greater number of tourists are also frequenting the area.

In July 2013, in a meeting organized by WWF-India in Gangtok, the Himal Rakshaks related their observations of monitoring exercises in 2013 with the Department of Forest, Environment and Wildlife Management Department, Sashastra Seema Bal, and NGO partners like The Mountain Institute and the Khangchendzonga Conservation Committee.

One of the significant outcomes of the meeting was that Himal Rakshaks would be engaged in future conservation initiatives related to critical wildlife species like the red panda, snow leopard, musk deer among others including curbing of illegal wildlife trade.



© The Yambong Team/WWF-India

The Himal Rakshaks on a patrol in Sikkim









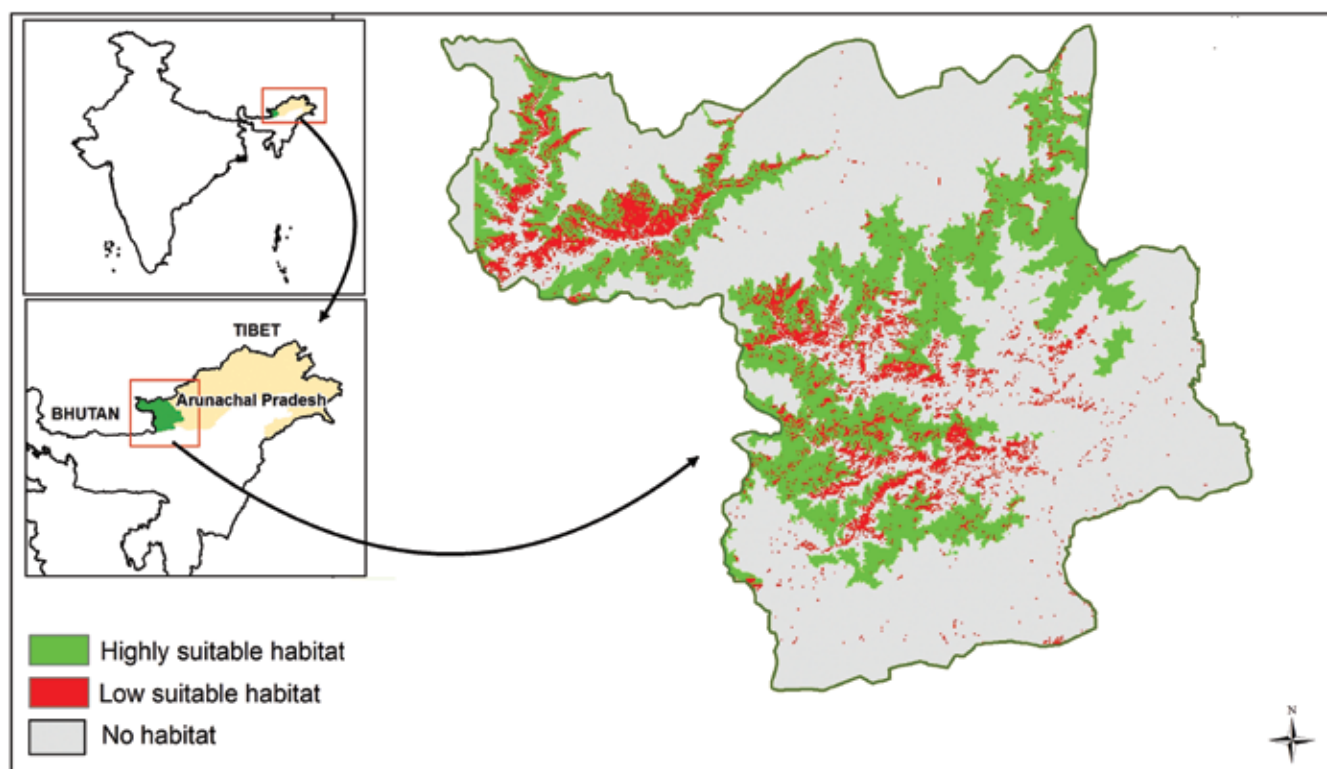
# PREDICTIVE MODELLING FOR CONSERVATION

Conservation planning requires fundamental information about the distribution and status of natural resources. It allows us to compare spatial patterns of biodiversity and environmental services, and to identify ecological hotspots and evaluate them economically. The Integrated Valuation of Ecosystem Services and Trade-offs (InVEST) is a modelling suite developed by The Natural Capital Project in partnership with Stanford University, University of Minnesota, The Nature Conservancy and WWF. WWF-India's staff underwent a training workshop on evaluation ecosystem services using InVEST.

A habitat model for red panda in Western Arunachal Landscape (WAL) was developed by us using InVEST. It modelled habitat quality and the species' rarity as proxies, ultimately estimating the extent of red panda habitat across this landscape. The data on habitat, threats and sensitivity of these threats towards habitat were used. The model allowed us to estimate the relative impact of one threat over another so that threats that were more damaging to the red panda's presence on the landscape could be represented as such. These results were presented at the NatCap annual meeting in Stanford University, California, USA in 2013. The outcome of the red panda habitat model can act as an input to a coarse-filter assessment for prioritizing conservation needs and opportunities.

In addition to biodiversity habitat modelling, WWF-India is also focusing on the economic valuation of ecosystem services using InVEST. In doing so, it evaluates the benefits of clean water, Non Timber Forest Products (NTFPs), and carbon sequestration on ecosystems. Further, estimation of the amount and value of environmental services will be analyzed under current and future scenarios both in biophysical and economic terms.

## Habitat suitability map of red panda for Western Arunachal Landscape using InVEST





# AUGUST



## CHARTING MIGRATION OF BAR-HEADED GEESE



## SUPPORTING SUSTAINABLE FISHERIES



# CHARTING MIGRATION OF BAR-HEADED GEESE

Sightings provide critical information on the migratory bird

One of the highest flying birds in the world, the bar-headed goose (*Anser indicus*) can fly at altitudes of 25,000 feet, while migrating over the Himalayas, where oxygen and temperature levels are extremely low.

A bar-headed goose, first collared at Pong Dam in Himachal Pradesh in March 2011, was sighted at the Tsokar Wetland in Ladakh in August 2013 establishing a link between the two wetlands. This also confirmed the fact that the bar-headed goose, which breeds at Tsokar in Ladakh spends winters at Pong Lake in Himachal Pradesh. Other bar-headed geese collared at Pong Dam were seen at another wintering site, Gharana wetland, shedding some light on their local dispersal patterns during winters.

Such significant findings, like that of the bar-headed goose's migratory route to Himachal, will help WWF-India develop strategies for sites critical to migratory birds and wildlife, with the support of government agencies.

© Pushpinder Singh Jamwal/WWF-India



A collared bar-headed goose spotted at Gharana wetland in Jammu

© Pushpinder Singh Jamwal/WWF-India



A collared bar-headed goose spotted at Tsokar wetland in Ladakh











# SUPPORTING SUSTAINABLE FISHERIES

Small-scale fisheries comprise approximately 94 per cent of the world's fisheries and produce nearly half of the global fish supply for human consumption. India is the second largest aquaculture producer in the world and among the top four exporters of seafood products like shrimp to Europe, Japan and the United States. Small-scale fisheries constitute 85 per cent of the sector in the country. WWF's sustainable fisheries programme facilitates Marine Stewardship Council (MSC) certification such that community-scale fisheries can operate sustainably.

WWF-India has been working on a transformational fisheries project in Kerala in Ashtamudi Estuary in Kollam, Kerala.



© Vinod Malayilethu/WWF-India

Harvested clams from the Ashtamudi aquaculture farm in Kerala

MSC's full assessment of the Ashtamudi clam fishery is in partnership with the Fishermen's Welfare Association (FWA) and Central marine Fisheries Research Institute (CMFRI). The project aims to achieve MSC certification for the short neck clam (*Paphia malabarica*) fishery by making the fishermen shift to sustainable approaches. This initiative has led to the formation of a governing council for the Ashtamudi short-neck clam fishery, which is the first of its kind in India. The council will review the clam fishery and address the issues faced by fishermen in the region.



© Vinod Malayilethu/WWF-India

Clam fishing in progress

# SEPTEMBER



CONSERVING THE  
BLACK-NECKED  
CRANE



INNOVATIONS IN  
HUMAN-ELEPHANT  
CONFLICT MANAGEMENT



RESCUING  
GHARIALS





# CONSERVING THE BLACK-NECKED CRANE

State bird of Jammu and Kashmir gets  
enhanced attention

The black-necked crane (*Grus nigricollis*), also known as the 'Tibetan crane', is endemic to the high altitude wetlands (HAWs) of the Himalayan region. The last of the world's cranes to be discovered by the scientific community, this bird has been revered by Tibetan Buddhists as a symbol of peace for decades, while the Indian state of Jammu and Kashmir has declared it the state bird.

However, the black-necked crane is listed as 'Vulnerable' in IUCN's Red List of Threatened Species and is representative of the fragility of the high altitude ecosystems it inhabits. Once found abundantly in these areas, numbers have dwindled in recent times, primarily because of the steady loss of wetlands. The species is threatened in the long-term by climate change, drying up of marshes, increased human settlements and predators such as domestic dogs.

WWF-India has identified the black-necked crane as a priority species for conservation, and has been working closely with the Department of Wildlife Protection, Government of Jammu and Kashmir for its protection. This collaboration has contributed to the remarkable recovery in the species from 38 birds in 1998 to 139 in 2012. At a meeting of the J&K State Board for Wildlife in September 2013, the Chief Minister of Jammu & Kashmir, Mr Omar Abdullah released two posters jointly prepared by the department and WWF-India, of which one was that of the black-necked crane. Regular education and awareness activities continue to be carried out with local communities, the Indian Army, Indo-Tibetan Border Police (ITBP), tourists, tour operators and local youth for the long-term conservation of the species.



© Mahesh Nair

The black-necked crane is threatened by environmental depredation











## INNOVATIONS IN HUMAN-ELEPHANT CONFLICT MANAGEMENT

WWF-India initiated the deployment of elephant anti-depredation measures in a demonstration village at the border of Satkosia Tiger Reserve, Orissa in September with the advent of the cropping season. The village had experienced severe human-elephant conflict over the last few years which adversely affected their crop harvest. In 2013, WWF-India demonstrated in Jhankartoila village different anti-elephant depredation measures using cheap and natural resources. The measures were selected after interaction with the community and experts and studying earlier reports of their implementation. The different measures deployed by WWF-India included the planting of medicinal plants on the periphery of the fields and the deployment of soaked castor seed pulp in used PET water bottles, around the periphery of agricultural fields. There have been some promising results with a reduction in elephant depredation in 2013.



© Michael Peters/WWF-India

Castor seed pulp in bottles being hung on trees in the periphery of the demonstration village

## RESCUING GHARIALS



© Asghar Nawab/WWF-India

A translocated gharial being released into the waters at Hastinapur Wildlife Sanctuary

A male gharial was rescued from Narora barrage and translocated to the Hastinapur Wildlife Sanctuary between 29 August and 2 September 2013. The animal had dispersed 110km away from the protected area (Hastinapur Wildlife Sanctuary) to unprotected areas during the flash floods in August. On rescue, it showed good signs of growth and acclimatization to the wild environment. Since 2009, WWF-India in collaboration with Uttar Pradesh Forest Department has released 550 gharial into the Ganga at Hastinapur. The rescued gharial belonged to 2010 batch indicating the success of the gharial release.



# OCTOBER



SUPPORT TO  
CYCLONE-  
AFFECTED  
VILLAGE



WILD WISDOM



CURBING  
TRADE  
IN SNOW  
LEOPARDS





## WILD WISDOM

### Wildlife quiz gets enthusiastic response from students across the Nation

The Wild Wisdom Quiz is an initiative of WWF-India is a non-formal approach to environment education that is jointly supported by the Ministry of Environment and Forests (MoEF) and Central Board of Secondary Education (CBSE). As Asia's biggest and the only national wildlife quiz in India, Wild Wisdom provides a unique opportunity for students to deepen their understanding about the natural world and enhance their knowledge about India's flora and fauna.

In its sixth Annual Edition in 2013, The Wild Wisdom Quiz was held in 17 cities across India. The quiz saw the participation of over 550 schools with more than 25600 students from 44 cities and 23 states across India. Apart from the 17 cities where the quiz was held, the quiz received encouraging participation numbers from the remotest areas of the country in Andaman & Nicobar Islands, Meghalaya, Manipur, Sikkim, Jharkhand and Chhattisgarh.



© WWF-India

Wild Wisdom finals being held in New Delhi

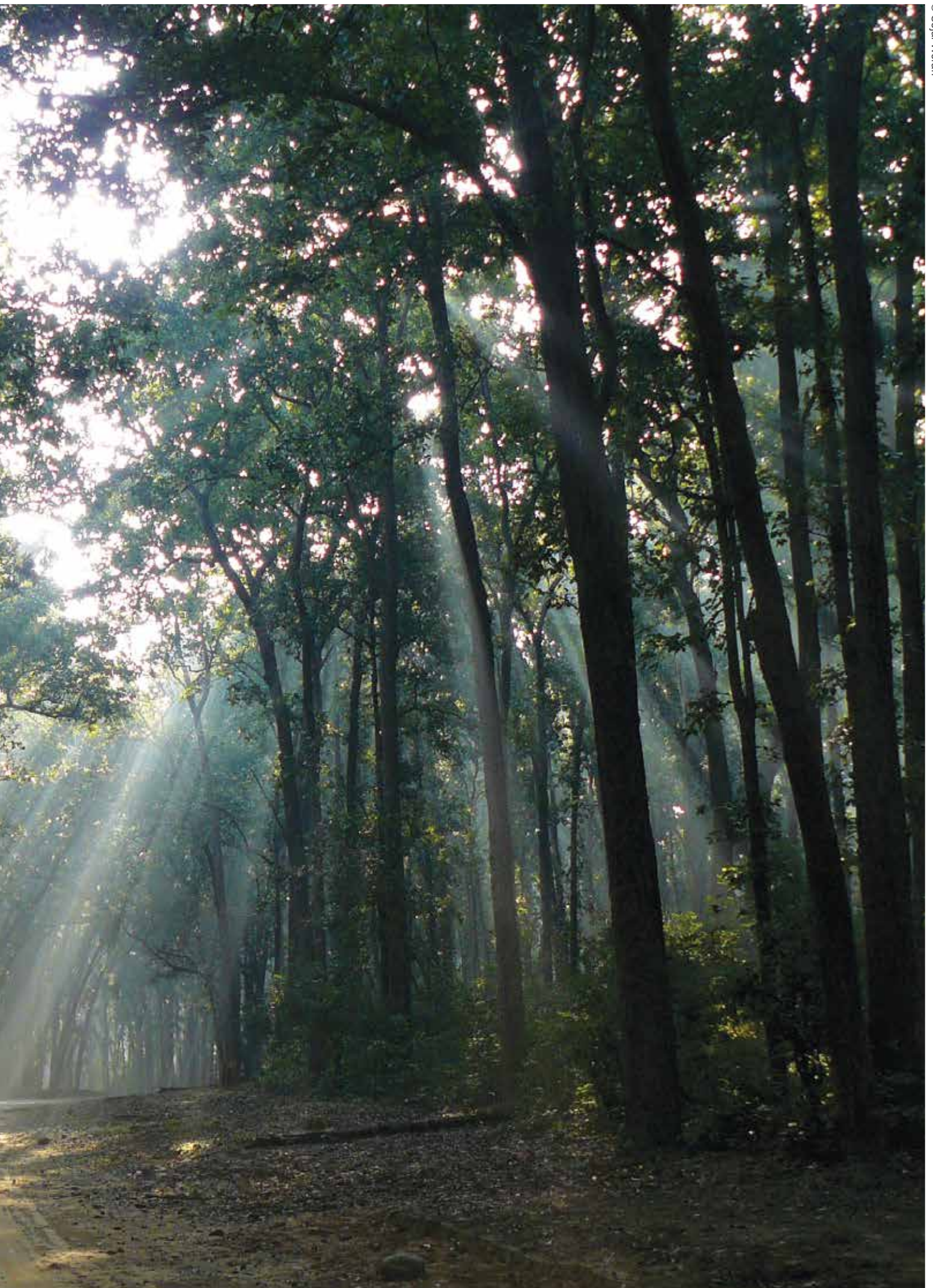


© WWF-India

Wild Wisdom winners on a trip to Corbett National Park











## SUPPORT TO CYCLONE- AFFECTED VILLAGE

On 14 October, the cyclone 'Phylin' caused severe damage to the coastal villages close an important Olive Ridley rookery site. WWF-India provided all possible support to the village of Gokhurkuda, the base camp village for WWF-India's Olive Ridley conservation programme. Along with restoring infrastructure in the villages, rations were provided to households. The village was provided a solar lighting system for their cyclone shelter. As a rehabilitation measure, alternate livelihood facilities with poultry farming and ponds for freshwater fish farming were provided.



© WWF-India

Essentials like milk powder for babies were provided in the village

## CURBING TRADE IN SNOW LEOPARDS



© Martin Harvey/WWF-Canon

The endangered snow leopard is poached for illegal trade

TRAFFIC's project to curb the illegal trade in snow leopards across its range was launched in 2013. In addition to updating country-wide information on snow leopard trafficking, TRAFFIC is providing this information to enforcement agencies to implement at the national and regional network levels.

Preliminary results have been shared at the Global Snow Leopard Conservation Forum (GSLCF), Bishkek in October 2013 as well as at the WWF Eastern Himalayas meeting held in Kathmandu.



# NOVEMBER



RELEASING  
TURTLE  
HATCHLINGS



LIGHTS4STRIPES



PROMOTING  
SUSTAINABILITY  
IN PALM OIL





# LIGHTS4STRIPES

## Managing human-tiger conflict in the Sundarbans

The Sundarbans, the largest block of mangrove forests in the world, is situated on the delta of the Bay of Bengal, at the confluence of the rivers Padma, Brahmaputra and Meghna. One-third of this expansive 4110 km<sup>2</sup> (approximately) landscape is in India, while the remainder is in Bangladesh. Rich in biodiversity, the Sundarbans is home to the Bengal tiger. The communities inhabiting the area are abysmally poor and heavily reliant on forest reserves for their sustenance and energy needs. This brings them into direct conflict with wildlife, especially tigers.

WWF-India has, therefore, strategically planned to help the communities by supplying them with access to inexpensive solar power because the Sundarbans in India is an energy-deficient region. It has been providing solar streetlights to discourage tigers and other wildlife from straying into human settlements. In 2013, with support from WWF-Australia and Aircel, 58 streetlights were installed around the Sundarbans Tiger Reserve and 24 Parganas (South) Forest Division.

In 2013, a survey revealed that the communities preferred CFL luminaries, because they are locally available. They also insisted on the installation of more solar lights in the periphery of Sundarbans Tiger Reserve because these lights prevented tigers from straying into villages. A new exercise was then carried out to repair and replace the existing solar lights. The new solar lights were mounted on shorter poles of 16 feet and have only one arm fitted with CFL luminaries. All the 38 solar lights in the periphery of Sundarbans Tiger Reserve were repaired and replaced by November 2013, with the remaining lights to be replaced during 2014.



© Anil-Cherukupalli / WWF-India

A solar streetlight in the Sundarbans











## RELEASING TURTLE HATCHLINGS

On 27 November 2013, more than 100 river turtle hatchlings were released by community members and schoolchildren of Meerut District, Uttar Pradesh at Maqhdoompur Ghat, on the banks of the Ganga. This release was part of a collaborative turtle conservation project, jointly initiated by the Uttar Pradesh Forest Department along with WWF-India in January 2013.

The release day saw excited members of the community and enthusiastic schoolchildren coming together to transfer the tiny hatchlings to their new home in the Ganga. The turtles had been retrieved from nets, then nurtured and protected at the turtle nursery constructed by WWF-India at the Forest Training Centre in Hastinapur. Through events like these, WWF-India hopes to succeed in changing attitudes toward river turtles and generate awareness about the importance of their presence in the river's ecology.



© Pangshura Smithii

River turtle hatchlings released in a joint operation involving WWF-India and the Uttar Pradesh Forest Department

## PROMOTING SUSTAINABILITY IN PALM OIL



© Jürgen Freund/WWF-Canon

Aerial shot of New Britain palm oil plantation, a leader in the production of sustainable and ethical palm oil in the world, in Papua New Guinea. India is a key market for palm oil

India is a key market for palm oil – the most widely consumed and traded vegetable oil in the world. To ensure environmental and social sustainability in the industry, WWF-India has been engaging with businesses working in this domain.

In 2013, WWF-India's efforts saw a significant increase in the Roundtable on Sustainable Palm Oil (RSPO) membership from a mere 14 in 2012 to 30 by November 2013. Three Indian companies were included in the international palm oil buyers' scorecard for the first time, further underlining the progress made in the industry. In the Indian palm oil market, RSPO chain of custody certification has been issued for Kamani Oil Industries and Galaxy Surfactants. There are two more companies which have initiated the process of certification, illustrating that the drive towards sustainable commodity sourcing is gathering momentum.



# DECEMBER



MAPPING  
THREATS TO THE  
RAMGANGA



CREATING  
ENVIRO-LEGAL  
REPOSITORIES



CONNECTING  
KANCHENJURI



CURBING SHARK  
TRADE





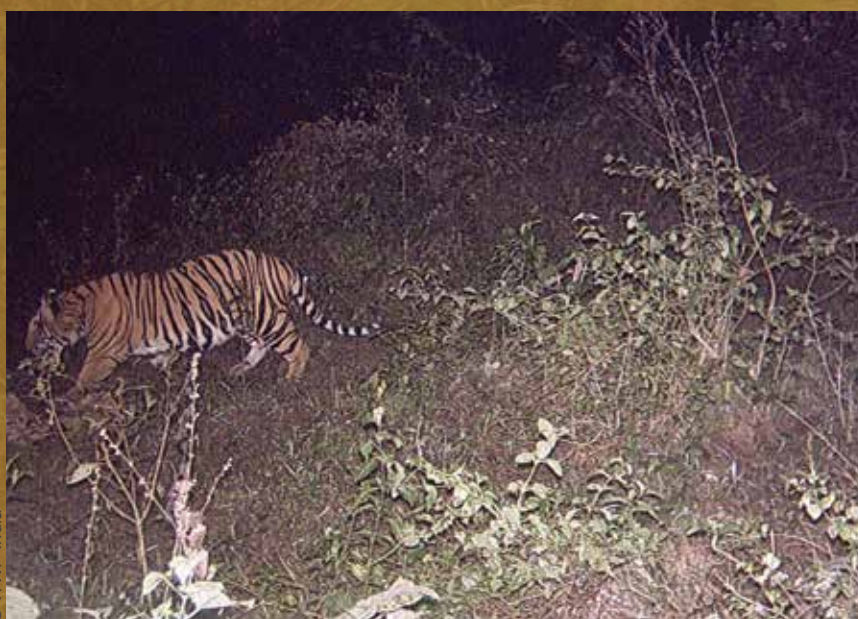
## CONNECTING KANCHENJURI

### Kanchenjuri corridor being secured to reduce human-wildlife conflict

The forests of Kanchenjuri form a critical corridor that connects the Kaziranga National Park to the hills of Karbi Anglong to the south. The primary challenge in securing this corridor is to generate community support as the corridor comprises of community-owned forests in the Karbi Anglong region. WWF-India has been working with local communities living on the fringes of the Kanchenjuri corridor to promote sustainable livelihoods and address human-wildlife conflict. The aim is to strengthen community participation to secure the corridor and also improve the interface between communities and the forest department.

In 2013, as part of the Human-Elephant Conflict (HEC) management, six Anti Depredation Squads (ADS) were formed at strategic locations along the corridor. They were provided with support like search lights and firecrackers to guard their crop fields. Ten solar-powered streetlights were also provided to a village in the south east of the corridor to prevent conflict due to wildlife straying.

No retaliatory killing of elephants and tigers was reported during this period. In addition, the corridor functionality was monitored by recording wildlife movement through the use of camera traps in strategic locations. Photographs of tiger, elephant, civet cats, clouded leopard, grey peacock pheasant and more were captured on the camera traps indicating the active use of the corridor by wildlife.



© WWF-India

Tiger in Kanchenjuri corridor











## MAPPING THREATS TO THE RAMGANGA

Businesses today realize water risks, but these risks are not understood holistically across their operations and supply chain. Water is a shared resource and, therefore, a shared risk. Shared risk can form the basis of water stewardship and offers an opportunity to stakeholders to harness the shared value of water. To map the water risks in the metal ware industry in Moradabad and to come up with a water risk mitigation plan, WWF-India and the Export Promotion Council for Handicrafts signed a non-financial Memorandum of Understanding on a Knowledge Partnership on Water Stewardship.



© WWF-India

More than 2000 citizens of Moradabad took oath to work for Ramganga conservation during the Walkathon

## CURBING SHARK TRADE



© Vinod Malayilethu/WWF-India

India is one of the world leaders in shark trade

India is the second largest shark trading nation in the world according to the Food and Agriculture Organization (FAO). There are gaps in the knowledge on shark trade in India. TRAFFIC has developed a new project on sharks and submitted it for international funding support. It is also coordinating its efforts with the Ministry of Environment and Forests (MoEF) and other regional institutions to address these gaps and to curb illegal trade in protected endangered shark species. In December 2013, TRAFFIC surveyed and assessed the scope and domain of the proposed work in south India and explored possibilities of partnership for working on shark fishery and trade.





## CREATING ENVIRO-LEGAL REPOSITORIES

In December 2013, the Centre for Environment Law (CEL), WWF-India and the National Law University Delhi (NLUD) felicitated participants of the Post Graduate Diploma in Urban Environment Management (PGDUEML). CEL, in partnership with NLUD, started the course in 2012. The institutions are pioneers in advancing legal education through the years. CEL serves as a resource centre for research in national, regional and international context on matters relating to environmental law. Under this initiative, it started the first dissemination programme on Environmental Law by launching the 'Diploma in Environmental Law' that has been running for two decades now. The PGDUEML is one of the specialized courses designed and implemented by CEL in collaboration with NLUD. In addition to PGDUEML, the Centre for Environment Law offers two other Post Graduate courses – Post Graduate Diploma in Environment Law and Policy and Post Graduate Diploma in Tourism and Environment Law.



© WWF-India

Felicitations of participants of the Post Graduate Diploma in Urban Environment Management

# PUBLICATIONS

## Status of Tiger, Leopard and Prey in Nandhaur Valley



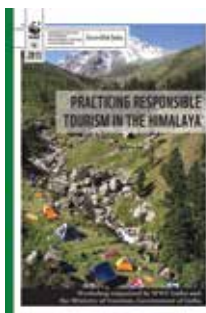
The vision to establish within the Terai-Arc Landscape (TAL) a contiguous tiger habitat is contingent upon extending conservation efforts beyond the Protected Areas. The primary goal of this study was to bridge gaps in information on the status of threatened large mammals in the Nandhaur region and recommend future conservation strategies.

## Environmental Flows for Kumbh 2013 at Triveni Sangam, Allahabad

WWF-India carried out a scientific assessment of E-Flows for a Healthy Ganga during Kumbh 2013 to ensure adequate release of flows in the River Ganga and to build consensus on Environmental Flows among key stakeholders. The E-Flows assessment was based on socio-cultural aspirations, ecological and geomorphological considerations at Sangam, Allahabad during Kumbh 2013.



## Practicing Responsible Tourism in the Himalayas



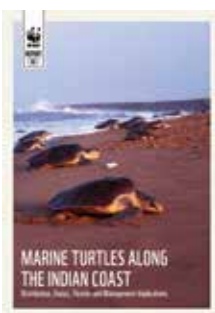
Tourism is one of the few industries with immense economic as well as social potential. It can play a big role in creating jobs, sustaining economic growth and reducing poverty. Further, as natural beauty is one of the factors that appeal to tourists, tourism can work greatly to preserve natural resources and the environment, to its own advantage.

## Cutting Cotton Carbon Emissions: Findings from Warangal, India

Cotton is an important cash crop for India, with 11 million ha of land in production. Warangal, a district located in the northern part of Andhra Pradesh, is a major cotton-growing district. WWF-India is working with farmers in Warangal district to promote better management practices (BMPs) in cotton so as to reduce the environmental impact associated with the overuse of inputs and resources.



## Marine Turtles along the Indian Coast



India has a coastline of more than 8000 km which is rich in biodiversity. Five species of sea turtles are known to inhabit Indian coastal waters and islands. The report aims to provide an understanding of the current status and trends in turtle distribution along the Indian coast. It also assesses the threats to turtle populations in each state and provides recommendations for their conservation.

## Value Chain Mapping of Tourism in Ladakh

The primary objective of this study was to carry out a value chain mapping of tourism in Ladakh, a region representative of tourist destinations in the Himalayas, and to recommend strategies for integrating local communities, particularly herders, women and marginal groups into tourism.





## RE+: Renewables Beyond Electricity



Renewables beyond electricity is a compendium comprising innovative renewable energy applications, pilot projects and novelty in technologies and business models. These 14 innovative cases bring out the experiences of different stakeholders such as entrepreneurs, developmental agencies and non-governmental agencies in exploring the diverse applications to which renewable energy can be utilized at the rural, urban and industrial levels

## Low Carbon Growth Policy Tracker for Indian States

This study has been undertaken with the objective of developing a Low-Carbon Growth Policy Tracker that will assess the impact of state-level low-carbon policies in Indian states. For this purpose, a sample of 10 selected states has been analyzed, and a tracker has been developed to map the performance and progress of state policies that directly or indirectly affect the low-carbon growth of these states.



## The Energy Report - Kerala 100% Renewable Energy by 2050



This project is an attempt to model the energy requirement (across power, transport, agriculture, industry, domestic and commercial sectors) of Kerala up to 2050 in order to assess the feasibility of meeting 100 per cent of the state's energy demand with renewable sources.

## The Energy Report - India 100% Renewable Energy by 2050

Developing countries like India, where nearly 300 million people do not have access to electricity and modern energy forms, undoubtedly need enhanced supply of energy to advance their social and economic development, but the key challenge lies in being able to do so in a clean and sustainable manner



# FINANCIALS

(Rs '000s)

<b>Income and Expenditure</b>	<b>31 March 2013</b>	<b>31 March 2012</b>
<b>Income</b>		
Fund raising and subscription	4,761	4,012
Donation	7,291	5,648
Project Grants	*3,70,083	2,88,497
Other Income	83,526	61,040
<b>Total Income</b>	<b>4,65,661</b>	<b>3,59,197</b>
<b>Expenditure</b>		
Conservation expenditure on objects of the trust	*3,98,470	3,01,372
Other expenses/operating costs	77,448	56,588
<b>Total Expenditure</b>	<b>4,75,918</b>	<b>3,57,960</b>

(Rs '000s)

<b>Balance Sheet</b>	<b>31 March 2013</b>	<b>31 March 2012</b>
<b>Funds and liabilities</b>		
Trust funds and corpus	1,16,307	1,06,170
Earmarked and other funds	20,085	32,120
Current & other liabilities	2,00,388	1,79,360
<b>Total</b>	<b>3,36,780</b>	<b>3,17,650</b>
<b>Property and assets</b>		
Fixed assets	14,782	16,325
Investments	1,24,278	1,14,279
Current & other assets	1,97,720	1,87,046
<b>Total</b>	<b>3,36,780</b>	<b>3,17,650</b>

\* excludes impact due to change in accounting policy



## CAMPAIGNS AND EVENTS

Individuals from various corners of the country participated in Earth Hour and other campaigns on wildlife and renewables throughout the year. Crowdfunding was also an important component of campaigns this year

## EDUCATION

More than 30,000 students across India were engaged in several activities that involved sensitizing them about the environment and issues related to the environment

## PARTNERSHIPS

WWF-India engaged in partnerships across a wide spectrum of organizations, communities and individuals to take its message of conservation forward

## PUBLICATIONS

WWF-India released several reports on key environmental and wildlife-related issues

## SUPPORT

More than 22,000 people support WWF-India's conservation initiatives through various kinds of contributions



### Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

[www.wwfindia.org](http://www.wwfindia.org)

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