IndiaWilds Newsletter

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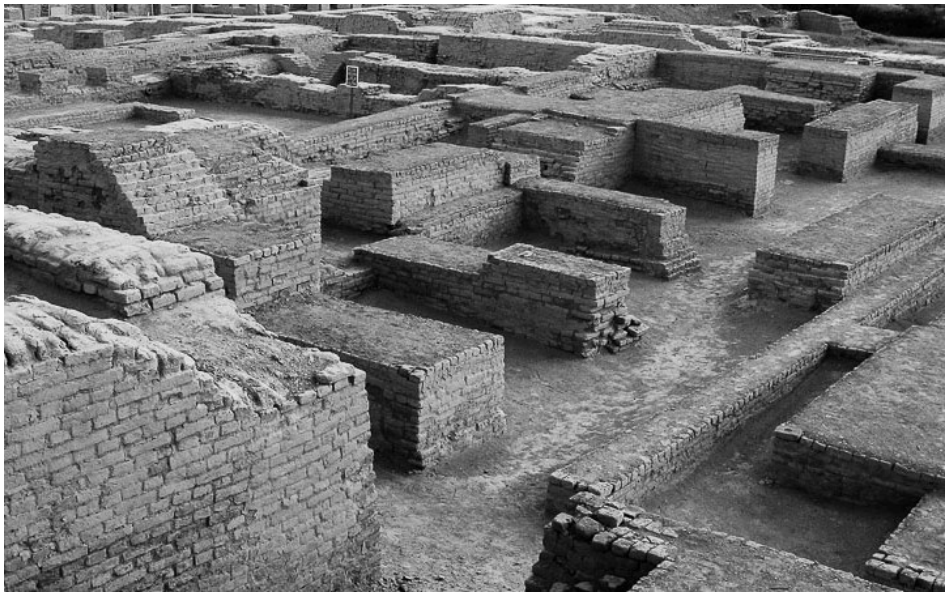
Climate Change is Real:

It is often mistakenly thought that climate change is a recent phenomenon. Scientists and conversationists often pepper their conversations with the statement "the spectre of climate change is looming large..." indicating that if we don't mend our ways to reduce our carbon footprint then climate change will be upon us and the impact will be highly deleterious for mankind.

However, little did we know that the climate change is a reality and the earth had witnessed climate change in earlier era and had to pay dearly.

Climate Change Claims Harappa:



Meticulously planned city

The Indus valley civilization in Harappa and Mohenjodaro had often been a mystery to not only us but also scientists as this civilisation seems to have been suddenly wiped out from the face of earth. The human settlements at Harappa and Mohenjodaro were meticulously planned with roads, road crossings, drainage, public spaces, granary, burial places carefully planned. It fits in with the modern concept of city planning.

Painted Dish

As opposed to the other civilisations like Egypt where the king or pharaoh is deified, the Indus valley civilisation seems to be a democractic society. So there have been many scientific studies to understand the sudden disappearance of this society as there can be learnings for us as well.

In a path breaking study, published in Geology (*Abrupt weakening of the summer monsoon in northwest India 4100 yr ago, Y. Dixit, Geology, 2014*) palaeoclimatologist Yama Dixit and team found out that between 4000 and 4200 years ago, the annual monsoon rains had stopped for a continuous period of two hundred years. This finding was based the study of Oxygen 18 versus Oxygen 16 isotope in the snail shells in Kotla Dahar.

When there is lack of precipitation water evaporates and the lighter O 16 isotope evaporates faster than the heavier O18 isotope. So the snail shells get enriched with the Oxygen 18 isotope during times of drought. Kotla Dahar being a closed rainfed basin, the study of the rare oxygen 18 isotope in the shells of snails becomes an accurate indicator to estimate the drought periods.

This lack of precipitation for a period of two hundred years would have resulted in unprecedented famine. The ghaggar river had gone underground and the lakes and other waterbodies died. As a result the mainly agrarian economy faced severe resource crunch. This unprecedented situation brought in cracks in the peaceful society and the marginalized communities were the first to suffer.

Lack of water had severe consequences on the hygiene and infectious diseases became prevalent. Tuberculosis was one of the diseases that had become rampant at that time.

Weapons used

The severe resource crunch gave rise to social unrest and unleased tremendous violence. About 50% of the remains had cracks in their skulls indicating blow by axe or similar weapons. (*Robbins Schug G, Blevins KE, Cox B, Gray K, Mushrif-Tripathy V (2013) Infection, Disease, and Biosocial Processes at the End of the Indus Civilization. PLoS ONE)*

Harappa society which at its peak had about half a million people was not a small settlement. If such a meticulously planned city could fall prey to climate change, can it not have the same impact on us sometime in future?

skeletons excavated in Mohenjadaro

The present day billion plus population of our country has started to grapple with water crisis in most parts of the country. Two southern states, Tamil Nadu and Karnataka, are locked in litigation over Kaveri water sharing and from time to time violent protests are seen in these two states. Delhi also faces the problem of water as the Yamuna river, due to the diversion of water has lost its ability to heal.

Our cities are growing bigger and bigger increasing the challenge of water supply to the masses. To cater to the needs of these burgeoning population, water from rivers are diverted by canals. This reduces the flow of the original rivers and impacts the health of the rivers and its ecosystem. The leakage of water from taps in the households as well as from the supply

lines often goes unnoticed. Neither the comman man nor the politicians give a thought that water is a finite resource. With unabated populism regarding urban water supply continues without any thought that our rivers are dying due to sewage and industrial pollution, diversion of water via canals and dam constructions.

An IPCC (Intergovernmental Panel on Climate Change) report had estimated that the Himalayan glaciers are receeding at the rate of 10 to 12 meters a year which is three times faster than it was two hundred years ago. If the present situation continues then these glaciers can completely vanish by the year 2035. This will severely impact the rivers like Ganga and Bramhaputra originating from the Himalaya making them completely dry up during summer months or reduce the flow to a trickle. Apart from severely denting the psyche of millions of people who revere these rivers as Gods, lack of water would be a death knell for agriculture, industries and the overall economy and the society will be in strife.

Climate change opening a Pandora's box:

To add to the strife, there are chances that the receeding glaciers in the Himalaya may expose virusus that have been dormant for thousands of years and bring them back to life. A study published in PNAS (*Thirty-thousand-year-old distant relative of giant icosahedral DNA viruses with a pandoravirus morphology, Legendre et al),* has found a giant virus named *Pithovirus sibericum* while digging 30 meters in the Siberian permafrost. "*This giant virus, named Pithovirus sibericum, was isolated from a >30,000-y-old radiocarbon-dated sample when we initiated a survey of the virome of Siberian permafrost. The revival of such an ancestral amoeba-infecting virus used as a safe indicator of the possible presence of pathogenic DNA viruses, suggests that the thawing of permafrost either from global warming or industrial exploitation of circumpolar regions might not be exempt from future threats to human or animal health*."

"*This is the first time we've seen a virus that's still infectious after this length of time*," said Professor Jean-Michel Claverie, from the National Centre of Scientific Research (CNRS) at the University of Aix-Marseille in France.

Pithovirus sibericum at 1.5 nanometers is so big that it can be seen under a microscope. Fortunately it is harmless to humans. However, there might be other deadly viruses stored deep in the glaciers, thawed by the extreme cold and can spring back to life when the glaciers melt. Even infectious diseases which were supposed to be eradicated may be stored in these glaciers and can come back to haunt us. When ancient viruses come back, it becomes difficult to control because our bodies may no longer be immune to them and by the time modern medical system throws up an effective medicine, these viruses can create catastrophic damage. And if such an event happens during times of resource crunch induced by climate change, there may not be enough resources as well as well as the will to fight such malevolent viruses.

The human induced changes is taking a big toll on Mother Earth. The burgeoning population, green house gas emissions from vehicles, industries, thermal power plants, cutting down forests which otherwise help in carbon sequestration, a lifestyle which has more carbon footprint is increasingly threatening to pull down the very existence of life on earth. Unfortunately, neither we nor our decision makers seem to be giving any thought on climate change.

We have to wake up to the fact that Climate change is real. The first to succumb would be the poorest of the poor and the marginalized communities, as was seen in Harappa. The politicians will ignore these inconvenient truths. However, if we ignore then history will repeat itself.

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Local stakeholders' participation: Key to protecting the Himalayan Rivers? - By Nishikant Gupta

The Indian Himalayan Rivers are a life-line for millions yet, facing severe threats. Can local stakeholders' participation to conserve riverine ecosystems help in alleviating some of the threats?

India is a land of diversity with abundant floral and faunal species. It is also blessed with numerous perennial rivers. Further, the country has different bio-geographic zones each with diverse climatic conditions, and the Indian Himalayas is one of them. Apart from being a biodiversity hotspot, the Himalayan region is also the source of major perennial rivers. Some of these rivers are not only pilgrimage sites among devotees, but also provide multiple ecological and economic benefits. Millions of people also rely on these Himalayan Rivers in the downstream reaches as these rivers create vast fertile plains here and help sustain local livelihoods. More importantly, the Himalayan Rivers are home to a number of fish species. Apart from having various ecological functions, these fish species are at times the only source of protein for some poorer sections of the Indian society.

Anthropogenic stressors:

Despite these benefits, there are various anthropogenic stressors that are threatening the survival of the Himalayan Rivers and their fish species. To begin with, there is a huge demand for water from these rivers due to a growing population and a surge in industrial activities and constructions in the region. The construction activities lead to huge increase in demand for boulders and sand leading to illegal boulder and sand mining of rivers. This in turn impacts the percolation, ability of the river to cleanse and virtually destroys the river.

With the increase in population, the dumping of domestic and industrial waste into the rivers has skyrocketed leading to severe degradation in the quality of water. The crea-

tion of barriers to divert water flows reduces the flow of the river and impacts its capacity to cleanse. The removal of riparian vegetation to make way for new agricultural and urban land along with the destruction of river beds by illegal sand and boulder mining reduces the species richness by severely degrading the riverine ecosystem. The use of illegal fishing techniques such as dynamite fishing and poisoning to catch the fishes kills many other species apart from the fishes preferred in the market and damages the rivers. The combined effect of all these activities is acting like a death knell for these rivers.

Conservation and Stakeholder support:

There are numerous conservation strategies currently in place to protect river ecosystems here. However, not all of them are achieving the desired and long-term targets as anticipated during their implementation. One of the key barriers to the successful implementation of any conservation policy is the lack of local stakeholders' support, which has the potential to greatly undermine its aim and objectives. Therefore, any conservation plan can benefit by being sympathetic to the desires and hesitations of local stakeholders. There are possible approaches that could further assist the ongoing river and fish conservation programmes in the region.

Community governed

One such plan to protect Himalayan Rivers and their fishes could be to legislatively create community-governed river reaches. For example, communities located along a river could manage and protect river reaches abutting the community geographical boundaries, with adequate encouragement, support and under the overall jurisdiction of the appropriate Government authorities. However, assessing local communities' willingness to support such an approach has to be made a priority. The key members of the community also need to be trained so that the community is able to understand their duties and handle the responsibility. Even though a community is willing and is capable, after passage of time the initial enthusiasm can subside. Utmost care has to be taken to avoid conflicts of interest between communities which could hinder the success of this approach. Communities enthusiastic to support the approach should be allowed to assist with the ongoing conservation strategies in the region to better understand the future requirements and commitments from them. There are other potential hurdles with this approach, e.g. the unwillingness of neighboring communities to participate in river and fish conservation as well as conservation of the riverine ecosystem in a holistic manner. Here educational awareness and media could play a pivotal role. Communities protecting multiple river reaches along a river could have the potential for a long-term catchment scale protection.

Flagship species have been vital in spreading conservation awareness and generating funds for future research activities. This has benefitted the species in question and their ecosystem. In the Himalayan region, the tiger and the Indian elephant continue to play important flagship roles and secure their survival and that of their habitats. Therefore, there is a need to explore the possibility of a flagship fish species which could boost river conservation on a domestic and international scale. However, such fish species should have strong local stakeholders' support by providing social and economic benefits. The golden mahseer could be investigated as a candidate for such an approach. This is because this fish species is world renowned among catch-and-release (C&R) anglers, who frequent the Himalayan Rivers in its search. This brings with it economic opportunities for local stakeholders, but more importantly, a sense of local pride for village members.

Catch and Release (C&R) angling has been a leisure activity in the Himalayan region for many decades, and has attracted both domestic and international audience. Various fish species have been of interest; however, the golden mahseer has been a clear winner. There are strong views that Catch and Release (C&R) angling is detrimental for not just the target fish species, but also for the wider river ecosystem. It is not permitted in the PAs (Protected Areas), Wildlife Sanctuaries and National Parks. There are reports of C&R angling providing valuable fish data to scientists, generating funds for research projects, providing monetary incentives for regional economies, and through collaboration with local stakeholders ensuring protection to threatened fish species. In this regard, there is a need to study the level of conservation awareness among C&R anglers visiting the Himalayan Rivers, and then determine if their current and future assistance could benefit the fish species as well as protection of the riverine ecosystem outside our existing PAs (protected areas) and Wildlife Sanctuaries.

The Indian Himalayan Rivers are facing major turmoil and demand the application of multiple approaches. The health of a river will be good if the entire river is protected through multiple mechanisms like existing PAs (Protected Areas), WLS (Wildlife Sanctuaries), National Parks along with community participation. Importantly, unless there is widespread cooperation between local stakeholders, we will be fighting a losing battle. The time has come to act, and to act now.

IndiaWilds Campaign- Barn Owl Hunting by villagers

A shocking practice of hunting barn owl by using catapult has come to light. IndiaWilds member Paramvir Singh found a villager with a barn owl near a hamlet called Lendipara, off Vajreshwari Road near the Tungareshwar Wildlife Sanctuary.

Hunted Barn owl
Courtesy - Paramvir Singh

Owls are mercilessly hunted because of their use in blackmagic rituals. Since villagers use catapult to hunt owls and other birds, it won't attract attention due to lack of sound. Unfortunately, catapult is not classified as a weapon In the Wildlife Protection Act (WPA). In the WPA the definition of weapon includes "ammunition, bows and arrows, explosives, firearms, hooks, knives, nets, poison, snares, traps, and any instrument or apparatus capable of anaesthetizing, decoying, destroying, injuring or killing an animal". This seemingly harmless play thing causes huge damage in the hands of experts. So we need to also raise our voice to ban catapult.

The killing of owls continue due to lack of documentation and lack of intelligence gathering by the forest department to prevent wildlife crimes. Unfortunately, in many parts of the country these crimes are ignored by the forest department even when reported to them.

This incident too has been duly reported to the DFO thane region. A covert study would definitely reveal many more instances given the brazen manner of this villager carrying away the barn owl.

It would be helpful if everyone writes to the authorities mentioning these incident and urging them to take strong action.

Hunted Barn owl Courtesy - Paramvir Singh

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Conservation News

Bihar developing India's biggest grassland for tigers

In a rare good news amidst the disheartening news that one often gets to hear rearding our wilderness areas, Bihar is developing India's biggest grassland. This grassland will be over 800 hectares in Valmiki Tiger Reserve to provide a wildlife friendly environment for the apex predators whose numbers have doubled in the last three years.

"We have decided to turn 800 hectares of forest in the tiger reserve into the biggest grassland in the country. The work has already begun to clean the bushes of unwanted species like mikenia, eupatorium and phoenix – which are the main cause of fires – to convert it into a grassland," Santosh Tiwari, director-cum-conservator of the Valmiki Tiger Reserve in West Champaran district that borders Nepal, told IANS, in an inteview.

Tiger in grassland

According to Shri Tiwari there is no place in the country with such a large grassland.

"We have estimated we will spend Rs 2 crore (Rs 20 million)," he said, adding that lack of funds had delayed the project. One other major problem is that residents of bordering villages of Uttar Pradesh used the core forest area of the reserve for grazing their cattle.

"We will have to fence and develop grassland to check the grazing of cattle," added Tiwari acknowledging the anthropegenic pressure.

He said that after the grassland was fully developed, it will become a safe zone for tigers as well as deer in the reserve. More grassland will support more prey animals, which will in turn support more tigers.

According to him, the Madanpur forest range in the tiger reserve is home to many herbivores because the rich alluvial soil enriched by the river Gandak has favored the growth of grasses. The grasses in the reserve include imperata cylindrica, saccharum spontaneum and saccharum munja.

Samir Kumar Sinha of the Wildlife Trust of India, which is helping the forest department to develop the grassland, said the tiger reserve had more grassland in the past; this gradually turned into woodland due to lack of management. People also turned them into agricultural land.

The number of tigers in the reserve has been estimated to have more than doubled in the last three years. Mixed forest vegetation is crucial for the herbivores as they are important sources of food. The availability of quality food boosts their chances of breeding.

"We have counted 22 tigers in the reserve at present on the basis of camera trap census," Tiwari said. The number of tigers was only 10 till 2010.

"In last three years, the population of tigers has jumped like never before in the 899 sq km reserve. Besides, intensive patrolling by local youth played a major role in checking the entry of poachers and others in the reserve," Tiwari noted.

Conservation News

The importance of grasslands as an ecosystem is often misunderstood. So the forest departments in many protected areas either neglect it or even in some cases encourage plantations. With loss of grasslands, the species dependent on it too shift to other places or perish.

To an untrained eye, the grasslands may look like wastelands, however, it harbours many species of flora. When the wilderness areas are solely left for nature to have its play, grasslands are known to periodically recede and get taken over by trees species ie. forests and vice versa. Naturally caused forest fires play a role in it. However, when our wilderness areas are facing severe anthropogenic pressures, it is important for the forest department to lend a helping hand by scientific management practices. So in that regard it is a good move to recreate grasslands as it will encourage prey species dependent on the grasslands and will also attract predators.

Lakhimpur's killer tigress caught, released in Dudhwa

Mar 11, 2014, 05.39 AM IST

LUCKNOW: In a first for the UP forest department, a tigress that had killed a man in Lakhimpur Kheri district, was tranquilized, trapped and released back into the wild on Monday. The healthy, two-year-old tigress was released in Dudhwa tiger reserve after being medically examined.

Forest department officials believe the February 20 killing by the predator was a chance encounter. The 35-year-old victim's body was found at least 4km off the forest boundary in Bhira range of South Kheri forest division.

"Even 18 days after the killing, there have been no fresh attacks," said DFO, South Kheri, Neeraj Kumar, adding that the department would keep monitoring the situation.

"It cannot be said for sure that the animal wouldn't kill again," he said, but added that the animal now has the opportunity to stay away from humans.

Since the killing, the department had been tracking the animal. On Monday, it was spotted in a sugarcane field, some 50 metres from the boundary of the forest. It was tranquillized and then released in the Chandpara beat of Dudhwa tiger reserve, some 20km away.

Officials said the site of the release was chosen with care. Since the tiger census is on at Dudhwa, a team from WWF had surveyed the Chandpara beat area and found the area unoccupied by other big cats. "Therefore, there's little chance that the tigress would come in conflict with other tigers. The site is deep inside Dudhwa and has ample prey base," said the official.
The official said it is also difficult to say if it actually strayed out of south Kheri. "There is a regular movement of tigers from Kishenpur to south Kheri. To say this one strayed out of south Kheri is therefore difficult," he added.
However, relocation carries a risk, say wildlife biologists. The predator may get disoriented in the new place and show aberrant behaviour. Relocated tigers have in the past tried to return to their original habitat.

Forest department officials said they were faced with increasing cases of young tigers straying out of the protected area in Uttar Pradesh.
"In most cases, tigers come into sugarcane fields chasing nilgai and wild boars," said former director, Dudhwa, GC Mishra.
Meanwhile, wildlife enthusiasts applauded the forest department's swift move to release the animal in the wild. "We will write to the government appreciating the department's quick action," said green activist Sanjay Narayan.

Conservation News

Quote Sabyasachi Patra - " The problem is because of the sparse vegetation in the forests which is also a reason for lack of food for the prey species. Our forests are not inviolate. Every day people and cattle enter the forests in search of firewood, illegal logging, NTFP collection, cattle grazing, poaching etc. In that scenario, the best place for the predators are the sugar-cane fields as those are inviolate in the real sense of the term. People can't enter these tall sugarcane fields due as it is dense and one can get severely cut by the blade of the leaves. The prey species first made it their home as they found this human modified landscape to suit them for food and shelter. And it was natural for the predators to have followed the prey. "

Equipment Discussions -

Canon announces Powershot G1 X Mark II

Canon has announced an update to its G1 X camera by introducing the G1 X Mark II.

The PowerShot G1 X Mark II Enhanced Grip Edition1 is Canon's flagship professional compact camera, featuring a large 1.5-type Canon CMOS sensor, a super-wide 24mm 5x f/2.0-3.9 zoom, 31-point AiAF, Dual Control Rings and a 7.5cm (3.0") LCD with touch-screen control plus WiFi with Remote Shooting function and Image Sync. It features the new DIGIC 6 processor and can record Full HD video (1920x1080) at 30p.

This is a small compact with professional features. One can even use the Wireless connectivity feature which allows users to control the PowerShot G1 X Mark II remotely by installing the Canon Camera Window app on a smart device. So you can even place the camera near the place where you expect action and shoot wildlife. The smaller size of this camera will make it inconspicuous.

The detailed specifications are as follows:

Canon Powershot G1 X Mark II

IMAGE SENSOR

Type	1.5 type (18.7 mm x 14.0 mm) Canon high-sensitivity CMOS
Effective Pixels	Approx. 12.8M (Aspect ratio: 3:2) Approx. 13.1M (Aspect ratio: 4:3)
Aspect Ratio	Multi-aspect Sensor - 3:2 (default), 4:3
Colour Filter Type	Primary Colour

IMAGE PROCESSOR

Type	DIGIC 6 with iSAPS technology

LENS

Focal Length	12.5 - 62.5 mm (35 mm equivalent: 24 - 120 mm)
Zoom	Optical 5x ZoomPlus 10x Digital Approx. 4x (with Digital Tele-Converter Approx. 1.6x or 2.0x[1]). Combined Approx. 20x
Maximum f/number	f/2.0-f/3.9
Construction	14 elements in 11 groups (1 double sided aspherical UA lens and 2 double
Image Stabilisation	Yes (lens shift-type), approx. 3.5-stop[1]. Intelligent IS with 5-axis En-

FOCUSING

Type	TTL
AF System/ Points	AiAF (31-point, Face Detection or Touch AF with Object and Face Select and Track), 1-point AF (any position is available or fixed centre)
AF Modes	Single, Continuous, Servo AF/AE[1], Touch AF
AF Point Selection	Size (Normal, Small)
AF Lock	Yes, via customisable buttons
AF Assist Beam	Yes
Manual Focus	Yes, plus MF Peaking AF + MF
Focus Bracketing	Yes
Closest Focusing Distance	5 cm (W) from front of lens in macro

EXPOSURE CONTROL

Metering modes	Evaluative (linked to Face Detection AF frame), Centre-weighted average, Spot (centre or linked to Face Detec-
AE Lock	Yes, via customisable buttons
Exposure Compensation	+/- 3 EV in 1/3 stop increments Manual and automatic dynamic range correction Automatic shadow correction ND Filter (3 stop)
AEB	1/3 - 2 EV in 1/3 stop increments
ISO sensitivity	AUTO, 100, 125, 160, 200, 250, 320, 400, 500, 640, 800, 1000, 1250, 1600, 2000, 2500, 3200, 4000, 5000, 6400, 8000, 10000, 12800

SHUTTER

Speed	1 - 1/4000 sec. (factory default) 60 - 1/4000 sec. (total range - varies

WHITE BALANCE

Type	TTL
Settings	Auto (including Face Detection WB), Daylight, Shade, Cloudy, Tungsten, Fluorescent, Fluorescent H, Flash, Underwater, Custom 1, Custom 2 Multi-area WB correction available in Smart Auto White Balance Compensation White Balance Compensation in Underwater mode

COLOUR MATRIX

Type	sRGB

VIEWFINDER

Viewfinder	Optional Electronic Viewfinder EVF-DC1

LCD MONITOR

Monitor	Tilt type 7.5 cm (3.0”) sRGB PureColor II Touchscreen LCD (TFT). 3:2 aspect ratio. Approx. 1,040,000 dots. In-cell capacitive type
Coverage	Approx. 100%
Brightness	Adjustable to one of five levels. Quick-bright LCD

FLASH

Modes	Auto, Manual Flash On / Off, Slow Synchro
Slow Sync Speed	Yes. Fastest speed: 1/2000 sec. (built-in flash) 1/250 sec. (external flash) 1/4000 sec. (external using high-
Red-Eye Reduction	Yes
Flash Exposure Compensation	+/- 2 EV in 1/3 stop increments. Face Detection FE, Safety FE, Smart Flash
Flash Exposure Lock	Yes
Manual Power Adjustment	3 levels with internal flash (up to 19 levels with external EX Speedlites 270EX II and 430EX II. 22 levels with
Second Curtain Synchronisation	Yes
Built-in Flash Range	50 cm - 6.8 m (W) / 50 cm - 3.5 m (T)
External Flash	E-TTL with EX series Speedlites[1]

SHOOTING

Modes	Smart Auto (58 scenes detected), Program AE, Shutter priority AE, Aperture priority AE, Manual, Custom 1, Custom 2, Hybrid Auto, Auto, Creative Shot, SCN (Portrait, Smart Shutter (Smile, Wink Self-Timer, FaceSelf-Timer), Star (Star Nightscape, Star Trails, Star Portrait, Star Time-Lapse Movie), Handheld Night Scene, Underwater, Snow, Fireworks), Creative Filters (High Dynamic Range, Nostalgic, Fish-eye Effect, Miniature Effect, Toy Camera Effect, Background Defocus, Soft Focus, Monochrome, Super
Modes in Movie	Smart Auto (21 scenes detected), Standard, Program AE, Portrait, Nostalgic, Miniature Effect, Monochrome, Super Vivid, Poster Effect, Underwater, Snow, Fireworks, iFrame Movie
Photo Effects	My Colors (My Colors Off, Vivid, Neutral, Sepia, Black White, Positive Film, Lighter Skin Tone, Darker Skin Tone, Vivid Blue, Vivid Green, Vivid Red, Custom Color)
Drive modes	Single, Auto Drive, Continuous, Continuous with AF, Self-Timer
Continuous Shooting	Approx. 5.2 shots/sec until memory card becomes full[1] with AF: Approx. 3.0 shots/sec with Live View: Approx. 3.1 shots/sec (all speeds are until memory card becomes full)[2][3]

FILE TYPES

Still Image Type	JPEG compression (Exif 2.3 [Exif Print] compliant) / Design rule for Camera File system and DPOF ver. 1.1 compliant), RAW (14bit, Canon original RAW 2nd edition), RAW+JPEG
Movies	MP4 [Video: MPEG4-AVC (H.264), Audio: MPEG2 AAC-LC (stereo)] iFrame

RECORDING PIXELS / COMPRESSION	
Image Size	3:2 - (RAW, L) 4352 x 2904, (M1) 3072 x 2048, (M2) 2048 x 1368, (S) 640 x 424 4:3 - (RAW, L) 4160 x 3120, (M1) 3072 x 2304, (M2) 2048 x 1536, (S) 640 x 480 16:9 - (RAW, L) 4352 x 2248, (M1) 3072 x 1728, (M2) 1920 x 1080, (S) 640 x 360 1:1 - (RAW, L) 3120 x 3120, (M1) 2304 x 2304, (M2) 1536 x 1536, (S) 480 x 480 4:5 - (RAW, L) 2496 x 3120, (M1) 1840 x 2304, (M2) 1232 x 1536, (S) 384 x 480 Resize in playback (M2, S)
Compression	RAW, Superfine, Fine
Movies	(Full HD) 1920 x 1080, 30 fps (HD) 1280 x 720, 30 fps, (L) 640 x 480, 30 fps Star Time-Lapse Movie (Full HD) 30, 15 fps Miniature Effect (HD, L) 6fps, 3fps, 1.5 fps Hybrid Auto (HD) 30 fps iFrame Movie (Full HD) 30fps
Movie Length	(Full HD HD) Up to 4 GB or 29 min. 59 sec.[1] (L and M) Up to 4 GB or 1 hour[2] (Star Time-Lapse Movie) Up to 32 sec

Equipment Discussions -

DIRECT PRINT

Canon Printers	Canon SELPHY Compact Photo Printers and Canon Inkjet Printers supporting PictBridge
PictBridge	Yes (via USB or Wireless LAN)

OTHER FEATURES

GPS	GPS via mobile (linked to compatible smartphone)
Red-Eye Correction	Yes, during shooting and playback
My Camera / My Menu	My Menu customisation available
My Category	Image tagging feature
Intelligent Orientation Sensor	Yes
Histogram	Yes, live histogram
Playback zoom	Approx. 2x - 10x
Self Timer	Approx. 2 or 10 sec., Custom
Menu Languages	English, German, French, Dutch, Danish, Finnish, Italian, Greek, Norwegian, Portuguese, Russian, Swedish, Spanish, Ukrainian, Polish, Czech, Hungarian, Turkish, Simplified Chinese, Chinese (traditional), Japanese, Korean, Thai, Arabic, Romanian, Farsi, Hindi, Malay, Indonesian, Vietnamese, Hebrew

INTERFACE

Computer	Hi-Speed USB (MTP, PTP) dedicated connector (Mini-B compatible)
Other	HDMI Micro Connector (HDMI-CEC compatible) A/V output (PAL/NTSC)
Computer/Other	Wi-Fi (IEEE802.11b/g/n), (2.4 GHz only), with NFC support[1]

MEMORY CARD

Type	SD, SDHC, SDXC (UHS Speed Class 1 compatible)

SUPPORTED OPERATING SYSTEM

PC Macintosh	Windows 8 / 8.1 / 7 SP1 / Vista SP2 / XP SP3 Mac OS X 10.7, 10.8, 10.9 For Wi-Fi connection to a PC: Windows 8 / 8.1 / 7 SP1 only Mac OS X 10.7 / 10.8.2 or later / 10.9

SOFTWARE

Browsing Printing	ImageBrowser EX
Other	CameraWindow, PhotoStitch, Map Utility
Image Manipulation	Digital Photo Professional for RAW development

POWER SOURCE

Batteries	Rechargeable Li-ion Battery NB-12L (NB-12L battery and charger supplied)
Battery life	Approx. 240 shots Eco mode approx. 300 shots Approx. 300 min. playback
A/C Power Supply	Optional, AC Adapter Kit ACK-DC100

ACCESSORIES

Cases / Straps	Soft Case DCC-1820 PowerShot Neck Strap NS-100
Waterproof / Weatherproof Case	Waterproof Case (40m) WP-DC53 Waterproof Case Weight WW-DC1
Lenses	Lens Hood LH-DC80 Filter Adapter FA-DC58E (Compatible with Canon 58mm Filters: Circular Polarizing Filter PL-C B, Neutral Density Filters ND4-L ND8-L, Protect Filter, UV Filter, Skylight Filter, Softmat Filter No.1 2)
Flash	Canon Speedlites (including 270EX II, 320EX, 430EX II, 580EX II, 600EX, 600EX-RT[1]) Speedlite Transmitter ST-E2, Off-Camera Shoe Cord OC-E3, Bracket BKT-DC1, Speedlite Bracket SB-E2
Remote Controller/ Switch	Remote Switch RS-60E3
Power Supply Battery Chargers	AC Adapter Kit ACK-DC100, Battery Charger CB-2LGE
Other	Electronic Viewfinder EVF-DC1 (0.48 type), 4:3 aspect ratio, Approx. 2,360,000 dots, 100% coverage Canon AV cable AVC-DC400ST Interface cable IFC-400PCU

PHYSICAL SPECIFICATIONS

Operating Environment	0 - 40 °C, 10 - 90% humidity
Dimensions (WxHxD)	116.3 x 74.0 x 66.2 mm
Weight	Approx. 558 g (including battery/ batteries and memory card)

Zoom	[1] Depending on the image size selected.
Image Stabilisation	[1] Values at maximum optical focal length. Cameras whose focal length exceeds 350mm (35mm equivalent) are measured at 350mm.
AF Modes	[1] Some settings limit availability.
Manual Power Adjustment	[1] Not all functions of the flash are supported.
External Flash	[1] Not all functions of the flash are supported.
Continuous Shooting	[1] Sustained continuous shooting function requires compatible SDHC/SDXC UHS Speed Class 1 memory card, total number of frames captured varies depending on shooting subject. [2] Under conditions where the flash does not fire. [3] Depending on memory card speed / capacity / compression setting.
Movie Length	[1] The following Speed Class memory cards are required for maximum record time: (HD) 1280 x 720 Speed Class 4 or above. (Full HD) 1920 x 1080 Speed Class 6 or above. (iFrame) 1280 x 720 Speed Class 6 or above. [2] Depending on memory card speed / capacity / compression setting.
Computer/Other	[1] Wi-Fi use may be restricted in certain countries or regions. Wi-Fi support varies by device and region. For more information visit www.canon-europe.com/wirelesscompacts
Flash	[1] Not all functions of the flash are supported.

Natural History -

COUNTRY NOTEBOOK: M.Krishnan: 'Little Cormorants'

The Sunday Statesman: 23-March-2014 (shared by Shri. Saktipada Panigrahi)

" ONE way or another, I have been seeing quite a lot of the Little Cormorant in the past few months. Not that it is rare or shy. If you know its haunts you may see it in hundreds, for it is highly sociable and goes about its most personal affairs quite publicly, unlike most birds. Only, it is so very much a water bird and I am so terrestrial that I have had limited opportunities for observing it, till recently.

Of course, it is not little. Its name does not refer to its diminutive size, but only to larger cousins. I should think it is heavier built than a Kite, though on the wing it looks smaller because of comparatively shorter wings and a short stiff-feathered tail.

Little Cormorant

In the evenings the cormorants would come home from feeding grounds to their nesting-trees in the water. In wave after wave of close, quick-winged flights. Most of them came from the West, at sunset. A thin, black, pulsating line would cross the flaming horizon, then another and another. By the time the first flight has passed overhead with a swish of stiff pinions, the next would be halfway across, rapidly resolving itself into birds from a quivering black line and then a pattern of rhythmic black dots shrinking and growing in unison as the wings were moved in perfect coordination. Even when the birds were right above, flying low, one did not see them as so many cormorants but only as a formation - there was that sameness of looks and matched movement in them that makes it so hard to pick out one soldier from the company at a marchpast.

Isolated flights would come in from time to time throughout the day. Most of these went straight to the nesting trees and vanished all at once as the birds settled. Occasionally, a flight would come hurtling into the tank, hitting the water over a wide area like a scattering of heavy missiles from some old-fashioned cannon. These " water-crows" (an English name that is a verbatim synonym of the Tamil name) swam and dived and fished with easy speed, but were less effortless in taking away from the water,splashing along for a few yards before being airborne. When they left the tank for their feeding grounds,they went singly and in small parties so that one hardly noticed their departure, though their return in packed company was almost dramatic.

In the evenings they roosted on the topmost boughs in hundreds, darkening the trees before the night. In flight and repose, they kept so much together, in such numbers that one could not see the birds for the flock.

The young were almost grown up, and sufficiently by themselves for close study - but I knew better than to try anything so messy. Cormorants work hard, frequently flying to distant waters to satisfy their voracious children, and the young are usually chock-full of small fish. And when they are closely studied,there is a conclusive movement of their thick, snaky necks and the contents of their bulging crops are sort out in a stream on the observer beneath!

Incidentally,in nearly two dozen nests I saw there were only two young per nest (often the bough supporting the nest, for the juveniles were now well able to clamber about), except for two nests that each held three. The pairs, and the sets of threes, kept close together when they moved out to the ends of their boughs, seeing me approach. Yet the 'Fauna of British

India' says the number of eggs per clutch is from three to five, and earlier in the season I saw at least three eggs in nearly every nest I was able to inspect.

The good book also says, of the genus 'Phalacrocorax' to which the Little Cormorant belongs, that the second primary is usually the longest - note that in my photograph of a cormorant in overhead flight,the third and fourth primaries of the left wing (i.e., the wing to the right side in the picture) are the longest; the tip of the other wing, blurred in the print, has been touched up and so cannot be taken into consideration.

It was as I was watching the paired young from a safe distance that the great idea came to me. I had a loaded camera and by sheer chance two flash bulbs in my pocket - earlier the day I had to photograph a human infant and had used the flashgun to catch the fleeting expression. Here was opportunity, to be seized by the forelock, mane or tail for a truly unique photograph.What I had to do was to creep near a pair of young birds without alarming them, then move in quickly and focus before the rising lumps in their throats reached their beaks, and record the reaction literally in a flash I gave much thought to preliminaries. Reluctantly, I set the shutter to the fastest speed it had, though that meant a wide stop and loss of depth of field - else I could not freeze the shower of small fry as it fell.

I selected a pair of young on a nest low enough for my purpose - the water round that tree was waist-deep and singularly filthy, but one does not get record pictures by sheer cleanliness. I turned my face the other way and slowly, ever so slowly, backed my way till I was near enough for the part demanding rapid action. As I adjusted the focus in a preliminary way before entering upon the second part of the plan, I noticed a leafy twig, directly between me and my subjects; this twig, just above reach, had not seemed obstructive earlier. however, I also noticed a simultaneous compensation. About three yards from the perch of my original pair, actually standing off their nest in another and lower branch of the same tree, was another pair of juvenile cormorants, better placed for my picture.Only, I should be quick for they were already alarmed and stretching their necks.

I took one long, splashing, underwater step to get near enough, focused rapidly and squeezed the trigger just as the gaping mouths opened to discharge their regurgitated shot. And as the flash flared up, a glittering little fish hit the lens of my camera with a smack, completely running the picture. I had forgotten all about the original pair of young birds, now directly above, and they had been a split second earlier in their reaction than their fellows. I am afraid I will have to wait till next year for my remarkable picture. I am still cleaning the eye of the camera with tender care, a little area at a time and in gentle installments, so as to remove all foreign matter without damaging the coating."

-M. Krishnan

This was first published on 22 April 1956 in The Sunday Statesman

Wilderness Updates-

The Mukki angle of Kanha-An early winter visit Nov 2013

by Shyamala Kumar

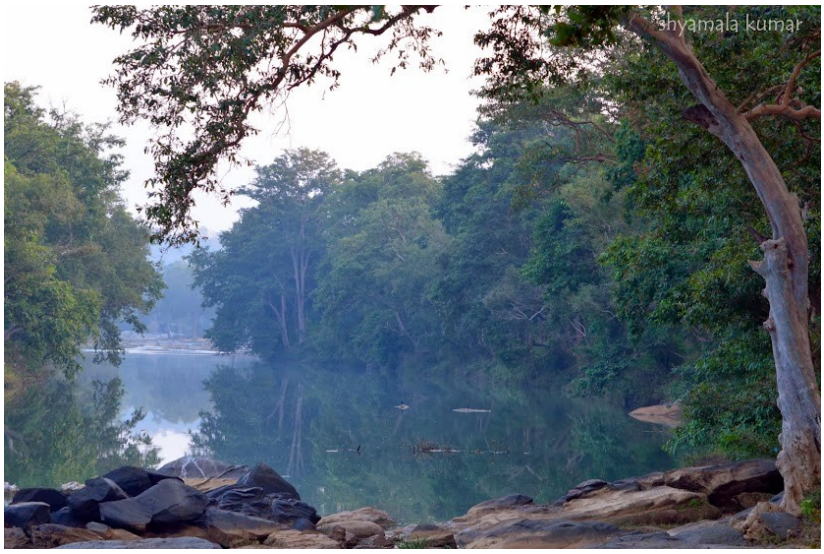
Kanha is a vast 1900sq km of exquisite biodiversity spreading across the districts of Gondia and Mandla in Central India.Of this 900sq km is the core area It is the original setting for Rudyard Kiplings Jungle Book.So far we had only entered Kanha through the Kanha kisli gate,staying at our favourit place- Baghira lodge, which is within the forest boundary and located on a waterhole.This waterhole is visited by nearly all the forest denizens. Our route then was Nagpur-Seoni-Chiraidongri-Kisli.

Since Nagzira was one of our destination this time, we decided to viisit Kanha via the the Mukki gate and experience a different type of terrain. The route was Sakoli-Gondia-Balaghat-Baihar-Mukki .For this we had to leave the NH6 ahead of Sakoli and drive northwards along SH26 a distance of about 225km taking into account a minor digression at Baihar were the irrational monsoons this year had practically washed away about 30km stretch of state highway

It was a beautiful drive through forestland .Of course there were the inescapable crowded villages and a few polluted townships in between. One is learning to accept violation of nature has become part of the Indian psyche. Reaching Mukki around lunchtime we found that Mptdc run Mukki safari lodge located on the edge of the scenic Banjar river.
While I was there I heard that there was an attempt to re- introduce the Black Buck to Kanha. An earlier attempt to do so had not been successful.

The very first safari confirmed my belief that the terrain was different from Kisli. Firstly there were the swamps and what was most heartening, frequent sightings of Barasinghas. It was cold during the early morning safaris, probably because of the large shallow water bodies. The forest roads were across bunds with the swamps stretching out on both sides.

There was also the dense tall forests of Sal the trademark of Kanha. The guide and the driver seem to think that our visit would be fruitless unless we sighted a tiger or a leopard. The most frustrating part of the safaris was that they kept zipping up and down in pursuit of the ever elusive tiger and leopard and refusing to stop for the lowly bird or herbivore .Only towards the end of safari time did they allow me to take shots of these lesser animals. By this time the sun was up and both the birds and hebivores had moved into the shade(during the morning safaris) or the light was too low to take a decent shot (during the evening safari).



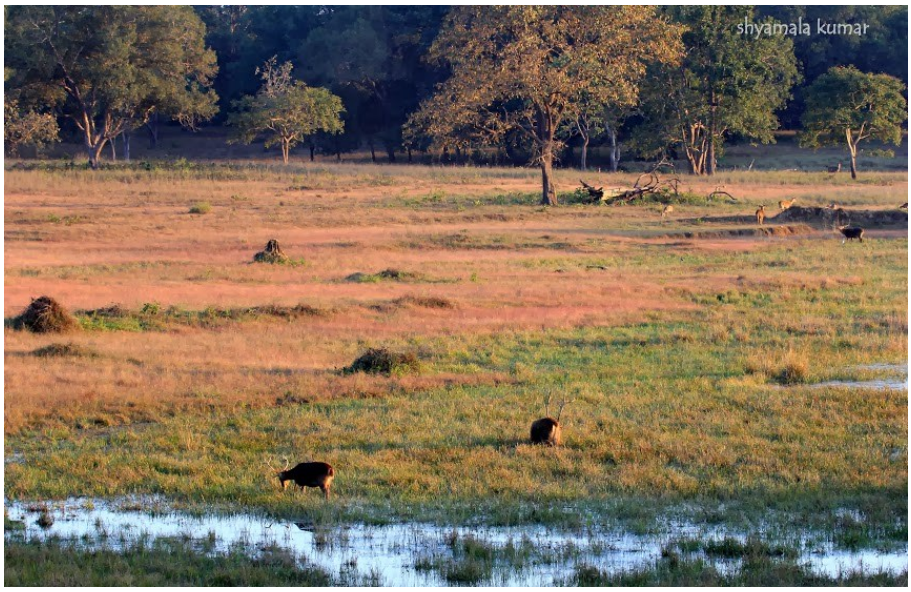
This river which is the largest tributary of the Narmada runs through the Mukki area of Kanha giving it both vitality and beauty.

When the sun came up they moved to the edge of the swamp to dally and rest.

The rivulets are an intrinsic part of the the Kanha landscape.

It is a heartening sight to see this herd composed solely of does.

I saw that only the males were wading and grazing in the swamps.



Wading with the Barasinghas ,busy fishing in the shallow depths among the bulrushes.

Image of the Month -

The honour for the Image of the Month for February 2014 goes to the image titled -

'Golden-fronted leaf bird' image of Jitendra Katre

I liked the texture of the teak leaf and the overall composition.

Following is the original text that accompanied the image:

Canon 7d, canon 300 with 2x, f/5.6, 1/500, iso-500

Wildlife Photography -

Flying Malabar Squirrel by Murugan Anantharaman

Leopard-Danger Unwinding by Shyamala Kumar

Wildlife Photography -

Sultan of Ranthambore by Vipin Sharma

Kid by Sabyasachi Patra

Wildlife Photography -

Wire tailed swallows by Roopak Gangadharan

Crested Hawk Eagle with Kill by Bibhav Behera

Wildlife Photography -

Siberian Stonechat by Mangru Minz

Greylag Goose by Rajeev Khanna

Wildlife Photography -

Rafter's Nightmare by Kaling Dai

Kumaon Himalayas by Sunil Purushe

Wildlife Photography -

Blue Sheep (Bharal) by Sucheth Lingachar

I look forward to your inputs and support in preserving the last tracts of wilderness and wildlife left in our beautiful country. For other interesting articles and images check - ***http://www.indiawilds.com/forums/***

To post in the IndiaWilds forums, you can register free of cost using your Full Name as user id at ***http://www.indiawilds.com/forums/register.php***

If you are already a member of IndiaWilds and have forgotten you user id and/or password you can mail to administrator@indiawilds.com

Regards,
Sabyasachi Patra

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