Summary of an expedition which carried Explorers Club Flag #52 to the Bardia and Kailali Districts in the Terai of Western Nepal, investigating the habitat of the *endangered* Gangetic River Dolphin (*Platanista gangetica*) in Nepal; March 4th - March 20th, 2011

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http://www.anzec.org/view_member.php?member_id=19
A postcard with dolphin photos taken in the Mohana River and/or its tributaries.

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Unless otherwise noted, all contemporary dolphin photos used throughout this report were kindly supplied by Mr Bhoj and Bijay Shrestha of the Dolphin Conservation Centre, Thapapur - 4, Kailali District, West Nepal, Nepal. Tiger photos were taken by expedition member Umang Thapa. All other photos, unless otherwise stated, were taken by the author of this report, Kevin Denlay.

BARDIA AND KAILALI DISTRICTS, WEST NEPAL TERAI, MARCH 4TH – 20TH, 2011
Ashore at Chisapani, just downstream from the Karnali River Bridge, right after exiting the Karnali River Gorge. Prior to construction of the bridge (it opened in 1993) the upstream deep water gorge was regularly frequented by dolphins, but are very seldom seen there now.

2011 Expedition Members
Uttam Jung Thapa (Expedition Co-leader)
Kevin V Denlay (Expedition Co-leader, E.C. Member FI98)
Umang Jung Thapa
Premi Khadka
Sanu Thapa

The author with expedition co-leader Uttam Thapa (left) and Rabin Kadariya, a conservation officer at the National Trust for Nature Conservation office in Bardia National Park.
Expedition Preamble / Objectives

The idea for an expedition to the Karnali River in West Nepal - to photograph the purportedly few remaining Gangetic River Dolphins in Nepal - originated when I visited Kathmandu for just a week in December 2010. T’was my first time back there in over 20 years so (if you have been there) you can just imagine my surprise at the changes that had taken place in my absence. Why, now there are skyscrapers (well, now quite ‘skyscrapers’), shopping malls, several TV stations, a democracy (instead of a Kingdom), multi party elections, etc, (all a far cry from when I lived there through the late 70’s an early 80’s). And, unfortunately there had also been a long drawn out vicious civil war in the country to boot, that had swelled the population of Kathmandu dramatically. And the traffic! Woeful! A journey by car that once took ten minutes in Kathmandu now took 45 minutes to an hour.

Be that as it may, I was talking over a few beers with an old Nepali friend who I knew very well, when he brought up how increasingly rare it was to see ‘river’ dolphins in the Koshi River (East Nepal, where his family is from) and how rare they were believed to have become in Nepal in general - where once they had been relatively abundant - I was both surprised and shocked. Surprised, as I was not even aware at the time that the Gangetic River Dolphin even existed in Nepal, and shocked that more was not being done to conserve those that were left so that they didn’t go the same way as the Baiji Dolphin in China (i.e. extinct!). My friend knew my background with regards photography, and underwater photography in particular, so he suggested we join forces and try to do something to rectify this situation. He suggested that we go out to the Karnali River in West Nepal, one of the only places they are still seen, and both photograph and video them and then make an concerted effort to publicise their plight to the world at large.

He was also very concerned at what a shame it was that primarily only the big ticket animals, that is the animals that most appeal to tourists, etc, (i.e. the tiger, rhino, et al) got the bulk of the funding from international grants (WWF, etc) for research, habitat conservation and protection. Given what I knew first hand about the interest worldwide for the protection of whales and dolphins in the oceans of the world (and what had happened to the Baiji) I knew we had to try and do something for their river dwelling cousins, that is both investigate their habitat and raise the general awareness of the world at large to the plight of the endangered Gangetic River Dolphin in Nepal. (The species is listed as ‘Endangered’ by the ICUN - International Union for the Conservation of Nature - in their Red List of Threatened Species.)

A two phase initial program, or series of expeditions, was then conceived; the first phase to be an expedition in March 2011 to the Karnali River in West Nepal to gather data and photographs and lay the ground work for returning in May 2011 - with a marine biologist and a video cameraman - when the river water is at its clearest; as our intention was (and still is) to gather both above and below water photos / video. The below water part would have been the first time that this had been done - and so would be the first images of Gangetic River Dolphins from an underwater perspective - and hence would have garnered plenty of publicity for the dolphins.

After my short stay I went back to my home in Australia, things proceeded accordingly, and in March 2011 I was back in Kathmandu. Then, within a couple of days of my arrival, word reached Kathmandu (or to be exact, the National Trust for Wildlife Conservation in Nepal, with whom we had liaised in December) that
dolphins had been sighted in the Karnali River near Lalmati (on the day I arrived in Nepal to be precise), which is ‘next door’ as it were to where we had planned to stay. We wasted no time then and set out the next day for Thakurdwara, a village south of Lalmati on the Geruwa River, which is the eastern branch of the Karnali in the Terai. Within days of arriving we were rafting down these rivers looking for dolphins!

For those who don’t have the time or inclination to raft down the river, local lodges or guest houses can organise sightseeing or photo excursions to the rivers on the backs of elephants.

The finer details of what transpired during our expedition will be covered later in this report, but needless to say the old adage, “you should have been here yesterday” proved correct, as we saw no dolphins during out ten days in the field. We did however uncover critical pieces of information, the most important probably being that we would definitely be wasting our time / money coming back in May! Unfortunately, although that is when the river water is clearest, it is also the least likely time to see dolphins. We learnt, from locals with experience in the area of our planned expeditions, that the prime dolphin sighting time is throughout the summer monsoon, or ‘wet’ season, - that is May / June through August / September - as after the monsoon ends (i.e. during the ‘dry’ season), many of the rivers the dolphins inhabit almost dry up, save for the ones that are additionally fed directly by Himalayan snow melt (i.e. the Karnali), but even that reduces dramatically in flow. So much so that as the dry season progresses (September / October through April / May) even the dolphins have an increasingly difficult time navigating up it, and hence for the most part stay in the vicinity of the Nepal / India border, or below, where the water remains relatively deep near the Girijapur Barrage (dam), 13kms inside India.

However all was not lost, and it was a far cry from a wasted expedition, as we gathered a lot of information on dolphin sightings, some of it rather controversial, acquired many photos, partially explored several of the rivers that we intended to cover and met many locals who had similar intentions as ourselves, but had actually been working on conserving / promoting the dolphins plight a lot longer, and were intimately familiar with their sightings and habitat. They had even set up the Dolphin Conservation Centre in the Kailali District and had made giant steps in educating the villagers in the area to dolphin conservation. Hence our May 2011 expedition was postponed and is now set for August / September 2012.
**Dolphin Background Information**

There are two subspecies of freshwater dolphin recognized in the genus *Platanista* - although they were once thought to be two separate species - which are found on the Indian subcontinent; the Indus River Dolphin (*Platanista minor*) in Pakistan and the Gangetic River Dolphin (*Platanista gangetica*) in India, Bangladesh and Nepal. However, while they once numbered in their tens of thousands, the last survey conducted in India by the World Wildlife Fund and its partners found less than two thousand remaining along the dolphins’ entire habitat range, and India is considered home to the subcontinents largest remaining population! In Nepal, the country in which the Explorers Club Flag 52 expedition took place - and where the dolphins are considered critically endangered - they are thought almost extinct, with varying remaining numbers being reported; from a commonly accepted low of possibly a dozen or so, to a ‘high’ (and highly controversial figure amongst academics) of up to a 100; the numbers being dependant on whose reporting is to be believed. Only two other species of freshwater dolphin exist, or did exist in other parts of the world; the (now believed to be extinct) Baiji or Yangtze River Dolphin (*Lipotes vexillifer*) in China and the Amazon River Dolphin (*Inia geoffrensis*) in the Amazon River in South America. This expedition and subsequent report concentrates solely on the Gangetic River Dolphin habitat in the Karnali River and its tributaries in western Nepal, where the largest and possibly only remaining population still exists in Nepal.

**Distribution:** The Ganges River Dolphin’s overall habitat is in one of the world’s most densely populated areas. In Nepal it is a legally protected mammal under the National Parks and Wildlife Conservation Act of 1973 - and while once common in...
the lower reaches of the Kosi, Narayani, Karnali and Mahakali rivers from east to west in Nepal’s Terai, it is now found almost exclusively in the Karnali River and its tributaries, i.e. the Mohana River, of Western Nepal. Low gated dams (barrages) across the river systems for irrigation and flood control (which among other effects cause segregation of breeding groups), ongoing terrestrial development, ever increasing pollution, declines in prey fish populations due to ‘natural’ competition and over exploitation for human consumption, along with incidental catches during fishing operations, i.e. entanglement in fishing nets, etc, and illegal killing/poaching has seen to their extinction or virtual extinction in the Kosi, Narayani and Mahakali rivers (and will do so in the Karnali unless something is done urgently to aid their conservation). According to locals in Nepal that the author of this report questioned circa 2011, and who were familiar with the areas in question, none had been observed in the Narayani and Mahakali Rivers for many years, and only sporadically in the Kosi River in recent years, reinforcing the fact that those that remain in the Karnali and its tributaries could actually be critically endangered and must be protected before it is too late.

Top. Nepal, with the expedition area marked at left. Left. Map of expedition area. Yellow line is main east / west highway. Right. Google Earth image showing the Karnali River Gorge above Chisapani (top) and how the Geruwa River (right) branches off east from the Karnali River (not again rejoining until inside India.)
Where the dolphin does still exist it favours deep pools, sharp meanders / bends in rivers, eddy counter-currents located downstream of the convergence of rivers and upstream and downstream of mid-channel islands. While it has a preference for the main channels, during the flood (wet) season it inhabits the tributaries that may be almost dry or unnavigable in the ‘dry’ season. This is especially so in the Mohana River (and its tributaries), which itself is a western tributary of the Karnali River\(^1\) and for part of its length forms the border with India; and it is from the Mohana where we find the controversial reports emanating with regards to the discrepancy in the number of existing dolphins frequenting that area during the monsoon season.

**Description:** Characteristics of the Gangetic (or Ganges) River Dolphin is a long thin snout with ‘lengthy’ teeth on both the upper and lower jaw, a stocky body with an almost non-existent dorsal fin, and large flippers / side fins in the fore-body. Being a mammal, the Ganges River Dolphin lacks gills so cannot breathe underwater and hence must surface regularly to breathe through a slit or ‘blow hole’ on the top of its head, which acts as a nostril as it were.

The above photos were taken at various locations along the Mohana and/or its tributaries.

\[^1\] The names Karnali, Kauriala and Ghaghara are, or can be, used by various sources as a name for / to describe the entire length of the river, from the Tibetan plateau to the Nepali border - and beyond. The author of this report has chosen then to use the word Karnali for the western branch of the river as it passes through the Terai downstream from the Karnali River Gorge, as that is what is stated / used on detailed hydrographic survey maps of Nepal, other maps of Nepal (see lower left insert previous page) and is also what the Nepali’s in the Bardia / Kailali area refer to it as.
In Nepal, because of the sound it makes when breathing through this ‘nostril’, the animal is popularly referred to as ‘Susu’. This species is considered almost blind - hence is often also referred to as the ‘blind dolphin’ - but is still an adept navigator and hunter of prey using an echo location technique. It also has the odd behaviour of swimming on one side so that its flipper trails through the soft muddy bottom, a behaviour that is thought to also help it find food. Males are smaller than females, reaching about 2.2m in length while females grow to attain a maximum size of about 2.7m. Their gestation period lasts from 9 to 10 months, and only one calf is usually born. While the calves and juveniles are relatively dark in colour, as the animal ages its colour lightens until as an adult it is a greyish brown.

They are strictly carnivorous and their teeth and long snouts are designed to catch and hold fish which they then swallow whole. Their diet includes a variety of fish and invertebrates, namely shrimp/prawns, clams, catfish, carp, freshwater sharks and Mahseers. The dolphins normally feed on surface dwelling fish although they use their flippers and long snout to disturb and catch mud dwelling fishes, etc, in the silty bottom of rivers. However, many of these same fish are also the diet of crocodiles, turtles and wetland birds; so besides ever increasing disruption of the dolphins food supply through human encroachment it also has to compete with other natural predators for the same food supply.

2011 Expedition Overview
We set out from Kathmandu early one afternoon and headed west toward Pokhara, planning to drive for four hours or so and stay near Mugling for the night, so we could set off from there early the next morning and arrive at our destination at Thakurdwara.
in the Bardia District before nightfall the following day. After a good nights sleep we set off at sunup and travelled south to Bharatpur, then west again along the Mahendra Rajmarg (or East / West Highway as it is more commonly known now), through Lumbini, the birthplace of Lord Buddha, and finally after a very long hot day only just arrived at our lodge at dusk as night fell.

The photo on left shows where the Seti River joins the Trisuli River on the way south from Mugling to Bharatpur. On right the arrow points from where the photo was taken, #1 is the Seti River coming in from the north, #2 is the Trisuli River coming from the east. Further downstream the Trisuli joins with the Kali Gandaki River - another trans-Himalayan river like the Karnali – which becomes known as the Narayani River as it flows through the Terai. The Narayani itself was also once a dolphin habitat, although it is believed dolphins are now extinct in that river as it is reported that they have not been sighted there in the last decade.

Our destination and home base for the next week was the village of Thakurdwara, which sits on the edge of the Bardia National Park, which itself is situated in the far western Terai region of Nepal, east of the Karnali River. As a matter of fact, the eastern arm of the Karnali, the Geruwa River, is the western boundary of the Park. The Park was established in 1988 and covers an area of 968 square kilometres and is the largest and most undisturbed park in the Terai lowlands of Nepal; with most of the park covered by Sal trees, grasslands, savannah and riverine forests. One-horned rhino, tiger, wild elephant, black buck, swamp deer, Gharial crocodile, Mugger crocodile, Gangetic River dolphin, snakes, lizards and fishes are the attractions of this Park, along with more than 200 species of resident and migratory birds. Our ‘quarry’ of course was the Gangetic River Dolphin, but we would welcome sightings of those ‘other species’!

The owner of the lodge we stayed at - i.e. Bardia Jungle Cottage - is Premi Khadka, a long time naturalist and conservationist. He joined the Forestry Department in 1967 as a young man and worked for them for 8 years. He then joined the National Park Forest Reserve and along with the first warden helped demarcate the Bardia National Park. When the National Park was officially established in 1988 he continued working for the Park until 1996 before retiring from government employ. Effectively he has lived the best part of his life in the area and is hence very knowledgeable with regards animal behaviour and the changes taking place, etc, in the area. He stated that the most noticeable natural change (besides human development that is) was the dramatic drop in the level of the Karnali / Geruwa River during the latter half of the dry season (say January through May +/-). Given that that is when the river is fed solely from the highlands of Tibet and the Himalayan glacial snow melt (as opposed to rain), then this occurrence bodes ill for the river itself and emphasises the changes that must be taking place higher up the river, and on the glaciers themselves.
The Karnali River originates near Lake Mansarover (1) on the Tibetan plateau and flows down through the Himalayan mountain range (white covered areas top left), on through the Karnali River Gorge (2) in the Sivalik hills and across the plains (Terai) of Nepal before crossing the Indian border - a distance of 240 kms as the crow flies - and eventually joins the mighty Ganges River. Bottom right is Premi Khadka, outside his lodge in Thakurdwara, ‘dot’ 3 left. Yellow lines are; upper - Nepal / Tibet border, lower - Nepal / India border.

We used Premi’s lodge as a base then for our time in Bardia, venturing out from there for days exploring the river by raft (i.e. an inflatable ‘Zodiac’ style raft), elephant, by car and on foot. What and who we saw, met, photographed and accomplished will be described in the following pages of this report. Overall things went almost as planned, after all this is Nepal, so one has to have a certain amount of tolerance for ‘snafus’ shall we say. For example, we had been promised the support of the National Trust for Nature Conservations Bardia office by their HQ in Kathmandu and this was duly given at first. Then, and probably the biggest setback to our expedition, came when some conservation organisation thulo manche (i.e. ‘big man’ in Nepali) involved in the Trusts’ tiger conservation program showed up and usurped - for the next week -
the raft and jeep we had been using that belonged to the Trust. Not much we could do about that really as he was higher on the totem pole than we, it was just one of those occasional crossed wires one must expect at times, so we had to scramble to rent another raft, and transport for it to the launching point, which as it turned out took a day of our precious time to organise. And one other small hiccup, laughable if it hadn’t wasted even more precious time, was when we had planned to set off for the afternoon from Thakurdwara with a Park guide and walk through the Park and along the Geruwa River. As it turned out, the man that sold the permits as it were to enter the Park with a guide had gone home for lunch, and although there were over a dozen other people in the office, and the passes / book to sign, etc, were sitting right there, no one else could or would accept payment for the pass or hand over a pass (and without the pass the guide could get into big trouble if he took us). It was a case of if anyone usurped the pass officials place / standing / status in being the one handling the passes and collecting the fee there would be hell to pay. And no amount of cajoling, in both Nepali and English, could sway them otherwise. As it turned out, that fellow never came back from ‘lunch’ that day! Nepal, ya gotta love it!

As stated previously, we had driven out from Kathmandu, and as all good things eventually come to an end, it came time for me to leave. My Nepali expedition mates decide to stay on for a spot of Masheer fishing, a highly prized fighting fish found in the rivers and streams of the area, so I was driven to the airport at Nepalganj from where I flew back to Kathmandu and then on home to Australia. So, with a picture worth a thousand words - or so they say - the following pages lean heavily on that maxim to cover in more detail then what was just briefly overviewed here.

The ubiquitous internet has long tentacles! A mud walled, thatched roofed ‘internet café’ in Thakurdwara village, Bardia. The number of internet café’s and international phone centres throughout Nepal, and especially Kathmandu, is staggering, given that in the early 1970’s there was just one international phone centre in the whole of Kathmandu where you had to often wait hours for an international ‘connection’.

Flow Characteristics of the Karnali / Geruwa River

In the dry season, i.e. October through April/May, as the water flow decrease, the Karnali River separates into two distinct branches after it exits the Karnali River.
GANGETIC RIVER DOLPHIN PROJECT, NEPAL; EXPLORERS CLUB FLAG #52

Gorge at Chisapani, and does not rejoin again until about 9 kilometres downstream from the Nepal / India border, that is about 9kms upstream from the Girijapur Barrage; a separated 'straight-line' distance of approximately 36kms in 2011. The western-most branch remains named the Karnali² while the eastern-most branch becomes known as the Geruwa³, which itself is the western border of Bardia National Park and hence the area most frequented by tourists / tourist associated locals visiting or working in the Park; which in turn leads to it being the scene for ‘most’ of the recent dolphin sightings / reports for the Karnali / Geruwa River.

To travel back in time and ‘see’ the change in the river, note the difference in corresponding areas from 2001 / 2011 as shown above. The red arrow on left points to where the (then smaller) Karnali exited the upstream main river channel in 2001, with the - then much larger - Geruwa branch exiting just to the right of the red arrowhead. The red arrow on right points to that same location in 2011, while the black arrow points to where the now much larger Karnali continues as the main river body, with the now (much smaller) Geruwa exiting just to the right of the black arrowhead. From this point on they remain separated until after crossing the Nepal / India border - at which point (i.e. the border) they are approximately 15kms apart.

² As stated earlier the author of this report chooses to use the word Karnali for the western branch of the river as it passes through the Terai downstream from the Karnali River Gorge, as that is what is used on various maps of Nepal and is also what Nepali's in the Bardia / Kailali area refer to it as.
³ This can be somewhat confusing as many locals often refer to both branches as just “the Karnali”.

BARDIA AND KAILALI DISTRICTS, WEST NEPAL TERAI, MARCH 4TH – 20TH, 2011
As a matter of fact the aerial photos above right, below right and bottom were taken in March 2011 while the author was actually on location there in the field. In 2001 though, and for many years prior, the main or largest flow was down the Geruwa – or eastern - branch. However, sometime between 2001 and 2011 (circa 2006 I was told) the river changed its flow characteristics substantially and now the main flow continues on down the Karnali, or western branch.

The above images actually show that dramatic change in flow characteristics of the Karnali River downstream from the Karnali River Gorge that occurred circa 2006. The image on the left was taken in 2006 and clearly shows the main flow going down the eastern or Geruwa branch, while the image on the right was taken in March 2011 and shows the significantly reduced flow down the Geruwa or eastern branch.

The letters A, A1, B on above two maps correspond with one another, and with the areas shown by the same letters in the photos on the following page, i.e. as to the ‘position’ they depict. A is where the Geruwa River previously exited the Karnali River. Just above A1 is where the Geruwa now exits the Karnali. B is now the main branch / flow of the Karnali through the Terai (A1 and B do not rejoin until inside India just above the Girijapur Barrage). X is the deep water location where dolphins are sometimes sighted, shown in the photos on the following page, while C and E are reference points in those photos. (The ‘red dot’ is the exact location where photo 15, page 29, was taken.) During the monsoon season the whole area that is ‘white’ is underwater; however as the waters recede the river takes on the above characteristics. (Unfortunately, when rafting, we had no choice but to exit on the Geruwa and not continue down the Karnali as we would have wished, as after ‘loosing’ the use of the Parks’ jeep we became limited as to where we could be picked up in the evenings.)
A is where the Geruwa once exited - circa 2006 - as the larger of the two watercourses, B is where the Karnali now (2011) flows on as the larger watercourse, with the Geruwa exiting as a much smaller river about one kilometre further downstream. Photos taken March 2011.

Natural causes, along with river rock collection, deforestation, mining and diversion of water for irrigation has caused extreme river bank erosion resulting in changes in river-bed structure and high fluctuations in the direction of the river flow below the Chisapani Bridge. Also, river traffic is increasing substantially in both India and Nepal and this will contribute additionally to the dolphin’s habitat restrictions and changes in feeding behaviour.

Major erosion on the eastern bank of the Karnali River near Lalmati, just upstream from where the Geruwa River branches off to the east. B corresponds to B in previous photo. C is where the top photo was taken from. D is the Karnali River Gorge. E (lower centre) is our raft. Dolphins are sometimes sighted here (and had been on March 5th) while C is colloquially known as ‘dolphin point’. This is the area referred to as ‘Lalmati’ in the table, page 27.

The deep body of water on the Karnali River near Lalmati, where dolphins had been sighted on March 5, 2011. The river through here is between 100 and 200 metres wide and relatively clear. This is where we had hoped to do in-water filming of the dolphins.
Threats to the Gangetic River Dolphin in Nepal

Although dolphins are threatened in the whole of their overall habitat, they are particularly threatened in Nepal where populations are often isolated behind barrages and are more vulnerable to human activities because of the reduced habitat area. Dolphins were once abundant in Nepal throughout the Kosi, Narayani, Karnali and Mahakali River systems, but due to construction of low gated dams across rivers for irrigation and flood control, over exploitation of prey species, illegal killing of dolphins and wide range of other human disturbances, the populations are more or less now restricted to the Karnali and, although now rarely seen there, the Kosi River system. (WWF Nepal, May 2006)

Bharat Raj Subba, a zoology professor at Post-graduate Campus, Biratnagar (Nepal), inspects a Gangetic Dolphin killed in 2008 by local fishermen in the Kosi River, East Nepal. The dolphin was just over 2m long and weighed 83kg. Police had seized the dolphin as it was being sold for meat. (Image courtesy ktm2day.com)

The major threats to dolphins in the Karnali River and its tributaries are humans; with intensive fishing, harmful fishing techniques, domestic washing, bathing, livestock wallowing, river stone/rock removal, increasing use of chemical fertiliser run-off, intensive irrigation and river channelization and the increasing use of motorized transport. All are contributing to ecosystem habitat degradation and dolphin population segregation. (Timilsina 1999)
Human activity is placing extreme pressure on the dolphin habitat in West Nepal. **Top.** River fish for sale at the Chisapani market. **Middle Right.** Fishermen prepare their net before setting off downriver. **Middle Left.** Fishermen pulling in their net which stretches out to the white float (arrow). **Bottom Right.** Fishermen (inside the Karnali Gorge itself) prepare to disperse their net. Note the float and fine size of net. **Bottom Left.** Further down the Geruwa River branch, inside the Park, village women fishing using long nets and basket traps.

**Left.** Arrow A points to several Hindu cremation fires on the banks of the Karnali adjacent to Chisapani. B points to tractors with trailers removing the river stone. Scores of trailer-loads are removed each day. **Right.** Arrow A points to villagers having their ‘bath/wash’ in the river. B points to a woman villager washing clothes in the river. C points to a fish trap.
Other major activities that have influenced dolphin populations in the Karnali River basin are the construction of the Girijapur Barrage (in India, just below the Nepalese border), a motorized ferry crossing at Kothiyaghat (about one half a kilometre upstream from the border) and the Chisapani Bridge. The lack of conservation awareness among the people (on a whole, although certain groups / individuals are doing their best to increase awareness; more on the later) in the vicinity of the river, and not much emphasis placed on the dolphin ‘dilemma’ by the Government and National Park authorities only adds to the problem. (WWF-Nepal, 2006)

Top Left A Barrage (or dam) on the Babai River, which is in the east of Bardia National Park. Note the ‘steps’ in the protrusions, which are to help fish migrate upstream in the wet season. (This also gives an idea of the dramatic change in river level between the dry season - when this photo was taken - and the wet season.) This also shows that the ‘steps’ would be useless for an animal the size of a dolphin. **Top Right** The Girijapur Barrage, approximately 13km downstream from the Nepalese Border in India is the major obstacle for dolphins attempting to migrate upstream, although at the height of the wet season they can actually navigate it. **Bottom Right** Arrow A points in the same direction that the top right photo was taken. B is the deep water dam above the Barrage, which itself is approximately 735m wide. C is a major irrigation feeder canal (while a smaller one runs off to the right). **Bottom Left** B Points to the Girijapur Barrage dam. C to the massive irrigation canals leading off from it. D is the Nepal/India border. E is Kothiyaghat (Also see large map of area next page.)

On the following page is a map covering the entire area, from the Karnali River Gorge just above the Chisapani Bridge all the way to just below the Girijapur Barrage, a distance of approximately 50km as the crow flies (i.e. a straight line).
GANGETIC RIVER DOLPHIN PROJECT, NEPAL; EXPLORERS CLUB FLAG #52

BARDIA AND KAILALI DISTRICTS, WEST NEPAL TERAI, MARCH 4TH – 20TH, 2011
Threatened or Thriving in West Nepal - A Controversy

For the last twenty odd years all scientific studies done in Nepal, by both local and international academics, have shown a marked decline in the Gangetic River Dolphin population, and according to the World Wildlife Fund, there could be less than a dozen such dolphins now remaining in Nepal. The only viable population is believed to be in the Karnali and its tributaries upstream of the Girijapur Barrage, but even this population may become extinct in the absence of stringent conservation action on both sides of the Nepal/India border (Smith, 1996). The most recent status and ecology study in the Karnali and Mohana Rivers using ‘scientific’ methods was conducted by a researcher from Tribhuvan University (Kathmandu), with the aid of the local populace, from July to September 2009 (i.e. during the monsoon season, and the time dolphins are most frequently sighted). A direct count method using point count and transect survey were conducted for assessing the population. This study concluded that the total number of dolphins present was 16; 13 in the Mohana River and 3 in the Geruwa River of the Karnali River System (Thapa, 2009).

However, an independent private group in West Nepal, operating the Dolphin Conversation Centre (or DCC) which is headquartered in the Kailali District just to the west of the Karnali River (i.e. just adjacent to the Bardia District) dispute these figures and maintain there are many times that number! Their dolphin research and awareness efforts in the past have been almost solely concentrated on the somewhat more remote and much less easy accessed Mohana River and its tributaries, and it is here they assert that a much large population exists. (The Mohana River meanders along the Nepal / India border, serving as the border at times, while at other times dipping into one or the other countries. See Google Earth map below.) More recently, i.e. late 2011/2012 they have also begun to monitor the Karnali River and have actually seen and photographed (2) dolphins in the Karnali River Gorge (in January 2012), a first sighting there for many years.
The yellow line is the Nepal / India border. Note how the Mohana crosses back and forth between the two countries as it meanders along the border. Also note the dramatic difference that just six weeks makes in the volume of water in the two rivers. That is, the above image consists of two Google Earth satellite images to the left and right of the 'line' that stretches between the upper and lower green 'starbursts'. The image on the right was taken March 14th, 2011 – when our expedition was there in the field - while the image at left was taken on May 11th 2011, just two months later, right before the monsoon started.
Four individual dolphins are visible in this photo (number five has just submerged and only the remaining surface ‘swirl’ can be seen), taken at the confluence of the Kanda and Pathraiya Rivers, which in turn are tributaries of the Mohana River.

Nevertheless, academics have either, at best, been slow to accept the DCC’s figures, or at worst, outright reject them, as they maintain that the DCC’s figures lack proper scientific survey methodology. That is, given the lack a strict documenting regime by the DCC, they assert that the DCC sightings could for instance be the same dolphin or dolphins being repeatedly counted as additional individuals. Of course the DCC dispute this and given they are in or near the field year round (after all they live in the area, and have done so all their lives, not just ‘visited’ for several weeks / months on a ‘scientific study’) their claims at least should be investigated. They have also taken the initiative to instigate a dolphin awareness program throughout their region, and have encouraged villagers to report all dolphin sightings and locations. They also have many photos of dolphins in their area, and the above photo in particular shows that it is not just single dolphins they are seeing or reporting.

A dolphin photographed in the Karnali River Gorge upstream from the Chisapani Bridge on January 13, 2012. The upper right photo, taken by the author in March 2011 - with the bridge in the background - is coincidentally taken from the exact same location where the dolphin is seen in the main photo. The arrow in lower left photo points to the same spot, but looking back upstream from the Chisapani Bridge.
The Dolphin Conversation Centre in Kailali District, West Nepal, was founded by Mr Bhoj Raj Shrestha (below) and his son Bijay. As a younger man Bhoj hunted game, and then worked as a guide for international hunters who came to Nepal when commercial hunting was still legal and relatively widespread (the hunting of tigers was the last big game to be banned, in 1973). However his attitudes slowly changed over the years until he became an ardent conservationist, so much so that not only did he cease his involvement in killing animals, he even began collecting slingshots from all the children and young men in the surrounding villages (who had been using them to kill birds, harass animals and even to shoot at the dolphins when they breached). For his efforts collecting every slingshot he could find throughout the surrounding districts he earned the sobriquet of ‘Guleli Baje’ (Slingshot Father).

Mr Bhoj Shrestha (aka Slingshot Father) with some of the thousands of slingshots (reportedly more than 3000) he has ‘collected’ over the years. To entice villagers to give up their slingshots he initially would pay a small ‘bounty’ on every one handed in, but eventually they were just handed in gratis as his efforts at conservation became more popular.

The following figures for the 2010 and 2011 prime dolphin sighting season in the Mohana River (itself a tributary of the Karnali) and its tributaries were kindly supplied by Mr Bhoj Raj Shrestha, founder of the Dolphin Conservation Centre. However, as stated previously, some academics dispute the DCC’s figures because of the claim that they were not collected in a scientifically accredited manner. Whether this would change the numbers is certainly open to debate; however the DCC have offered an open invitation to sceptical researchers to come to the area at the correct time of year, stay there for an adequate amount of time, employ their ‘scientifically accredited methods’ and it will be proven to them that dolphins exist in the numbers quoted, or greater.
<table>
<thead>
<tr>
<th>Date 2010</th>
<th>River Name</th>
<th>Location Sighted - Nearest Village</th>
<th>Number Sighted</th>
<th>Total</th>
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<tbody>
<tr>
<td>25 June</td>
<td>Pathraiya</td>
<td>Dhungana Tole</td>
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<td>Bardhawa Ghat</td>
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<td>Mohana</td>
<td>Naya Basti</td>
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<td>4 July</td>
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<td>Kusum Ghat</td>
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<td>16 July</td>
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<td>Naya Basti</td>
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<td>21 July</td>
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<tr>
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<td>14 Sept.</td>
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<td>Naya Basti</td>
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<td>16</td>
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<tr>
<td>18 Sept.</td>
<td>Mohana</td>
<td>Kusum Ghat</td>
<td>10</td>
<td>15</td>
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An assembled photo ‘sequence’ showing the Gangetic River Dolphins’ breaching behaviour. (Note; there are several individuals shown in this sequence, caught at different times during their breach and assembled together here in sequence just to illustrate the behaviour.) According to the Dolphin Conservation Centre these were all taken in the Mohana and / or its tributaries in recent years.
What must be taken into account with regards the above tables’ figures from the DCC is that each figure represents sightings at just one location on one day. It is highly likely then that there would be more dolphins at other ‘hotspots’ (see below) along the Mohana and its tributaries on the very same day that simply went unrecorded.

So-called dolphin ‘hotspots’ along the Mohana and its tributaries where sightings are most common are marked with red dots on the above. Note how the main sightings areas are at the confluence of rivers. This of course does not mean dolphins are not sighted elsewhere, as the above table attests to, but at the time this ‘map’ was drawn up some years ago, these were the main hotspots. Also not the proximity to the Karnali and Geruwa Rivers. (Map courtesy of the Dolphin Conservation Centre.)

On the left is the Kanara River just prior to the height of the dry season. The width of the river here is well over 100m. On the right is the Kanda River, at a point about 300m from the Dolphin Conservation Centre. (Both photos were taken on the same day in March 2011.) On right we have just parked our car at the road head - from where I am taking the photo - and Umang Thapa and Bijay Shrestha can be seen rolling up their pants legs before wading across the stream. At the height of the wet season a dramatic change takes place, when both rivers rise well up the river banks. Both these rivers also flow into the Mohana River as can be seen on the above ‘map’.

BARDIA AND KAILALI DISTRICTS, WEST NEPAL TERAI, MARCH 4TH – 20TH, 2011
Other fish that inhabit the same rivers in Nepal as the dolphin. **Left.** Bijay Shrestha from the Dolphin Conservation Centre with an enormous Giant Devil Catfish (Bagarius yarrelli) or Goonch - sometimes referred to as a freshwater, or river, shark. **Right.** Uttam Thapa with a Masheer or ‘Indian Salmon’, a prized fighting fish sort by anglers throughout Nepal.

Another source of ‘data’ for dolphin sightings in the area, or more specifically, on the Karnali / Geruwa River, are guides from the Tiger Tops Karnali Jungle Lodge in the Bardia District who, during the dry season (i.e. the tourist season), are often on the banks of, or adjacent to, various sections of the river, guiding Lodge guests on wildlife (tiger, rhino, etc) sightseeing and photographic tours. The following figures for sightings in the Karnali / Geruwa River during 2010 and 2011 were supplied then by Mr Rajan Chaudhary - a guide at the Lodge - in response to a request by the author of this report for any information they had of sightings. While not as extensive as the DCC’s data, the table still gives an idea of where and how many dolphins have been sighted at various times ‘recently’. The name ‘Lalmati’ in the following table refers to the body of water marked with an ‘X’ on the map page 10, and seen in the photos on page 14. ‘Bagh Machan’ (Bagh means tiger in Nepali) is an elevated viewing platform established on the banks of the Geruwa River for Lodge / Park guests to safely view tigers and other wildlife from. ‘Hattisar’ refers to the section of river adjacent to the Government Elephant Stables / Manau Island (Hatti means elephant in Nepali) just south of Thakurdwara, about 20 kilometres downstream from Lalmati. And Kothiyaghat is a village about one kilometre north of the Indian border where a pontoon bridge crosses the Geruwa River in the dry season and (in its place) a motorised ferry in the monsoon season. Hopefully, more awareness of, and a greater interest in the dolphins will see the Lodge keep more extensive records in the future.
<table>
<thead>
<tr>
<th>Date 2010</th>
<th>River Name</th>
<th>Location Sighted - Nearest Village</th>
<th>Number Sighted</th>
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<tbody>
<tr>
<td>11 September</td>
<td>Geruwa</td>
<td>Hattisar</td>
<td>2</td>
</tr>
<tr>
<td>23 September</td>
<td>Geruwa</td>
<td>Hattisar</td>
<td>2</td>
</tr>
<tr>
<td>6 October</td>
<td>Geruwa</td>
<td>Hattisar / Manau Island</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date 2011</th>
<th>River Name</th>
<th>Location Sighted - Nearest Village</th>
<th>Number Sighted</th>
</tr>
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<tr>
<td>18 January</td>
<td>Karnali</td>
<td>Lalmati</td>
<td>3</td>
</tr>
<tr>
<td>5 March</td>
<td>Karnali</td>
<td>Lalmati</td>
<td>3</td>
</tr>
<tr>
<td>16 June</td>
<td>Geruwa</td>
<td>Hattisar</td>
<td>2</td>
</tr>
<tr>
<td>14 September</td>
<td>Geruwa</td>
<td>Bagh Machan</td>
<td>2</td>
</tr>
<tr>
<td>16 November</td>
<td>Karnali</td>
<td>Lalmati</td>
<td>2</td>
</tr>
<tr>
<td>18 November</td>
<td>Geruwa</td>
<td>Kothiyaghat</td>
<td>1</td>
</tr>
</tbody>
</table>

*Tiger Tops Karnali Jungle Lodge in Bardia District is ideally suited at the edge of the forest to take guest on short elephant safaris (half day or one day) looking for wildlife such as tiger, rhino, etc. They can also arrange river tours if required. The entrance way to the main lodge building is at left, while the bangalows are shown at right. (Photos courtesy Tiger Tops)*

#1(lower) is the location of Bardia Jungle Cottages where we stayed, #2 (upper right) is Tiger Tops Karnali Jungle Lodge. They are about 3km apart. The river on left is the Geruwa.
Black dots indicate sighting locations for 2010 / 2011 as per the above table. Red dots denote sighting locations during a 2006 survey by a researcher from Tribhuvan University (Kathmandu) and this map was originally prepared by that researcher with data circa that time; the author of this report added the black dots for 2010 / 2011 sightings. (Note then how in 2006 the Geruwa - or eastern - branch is indicated as having by far the largest flow of the two 'rivers', however this has changed dramatically in later years and the main flow is now down the Karnali, or western branch.

So no dolphin sighting, however brief, would go unrecorded as we travelled down the Karnali / Geruwa rivers, I mounted a tiny GoPro HD video camera in a waterproof housing on the bow and left it constantly running. Alas, it was to no avail. Here we are in the Karnali Gorge.
Searching for Dolphin on the Karnali / Geruwa River

The numbers on the map at left correspond with the numbered photos on the following pages from one of the days we rafted down the Karnali / Geruwa looking for dolphins. Unfortunately we saw none on our raft trips and were told by many local people at Chisapani, and fisherman in the Gorge itself, that they had not been seen in the Gorge for many years. (However, as seen on page 22, one was photographed there in January 2012!) That is, the numbers denote where the respective photo was taken at. For instance, #1 is at the Chisapani Bridge, #2 through #8 are taken on the centuries old trial through the Karnali River Gorge. Once a major trade route for salt coming down from Tibet, and grain going up - as the Karnali transects the Himalayas - it is still used today to transport goods between the road head at Chisapani and the ‘inner Terai’ (i.e. the relatively flat land north of the Sivalik foothills that forms the Gorge, and south of the true Himalaya that rise further north). Images #9 through #12 are taken coming down the Gorge in our raft, while images #13 and #14 are taken on the Karnali before we branched onto the Geruwa. Image #15 is taken at the exact spot where the Geruwa branches off to the east, while #16 through #27 are taken along the Geruwa through the Terai. #27 was the last photo taken that day, as the sun had set and night soon fell. Prior to our rafting trip we had liaised with the local army commander regards our plans, and were requested to be back before nightfall, as anti-poaching patrols were active at night and he didn’t want a mistaken identity ‘accident’ to take place. Little did we realise that running into a rhino midstream would be our main concern that evening!
1 Looking west across the bridge at Chisapani.  
2 Our porters carrying the raft and our other equipment north through Chisapani village.

3 Partway up the trail through the Gorge, looking north.
4 Further up the trail looking south down the Gorge. A porter at right.

5 Left. The raft is almost bigger than this porter! Right. Our other porter strides on.
6 Rest stop halfway up to our launch point. Our two guides / boatmen are at right.

7 Towards the northern end of the Gorge, looking south. According to some reports the water through the Gorge is very deep.
8 At the northern end the Gorge widens abruptly before coming to flatter land again. We launched just south of this point.

BARDIA AND KAILALI DISTRICTS, WEST NEPAL TERAI, MARCH 4TH – 20TH, 2011
Ashore to ‘fly’ the Explorers Club Flag in the upper Karnali River Gorge.

About halfway down the Gorge marvelling at the terrain and scanning for a dolphin.

Halfway down the Gorge, GoPro in hand, intently scanning ahead for the slightest ripple that might signify a dolphin breach.

Almost at the end of the Gorge with the Chisapani Bridge in sight. Two dolphins were sighted right here in January 2012.

Just south of Chisapani Bridge the river widens abruptly and becomes shallower. The Gorge in far left background.

About 4kms south of the Bridge the river deepens considerably for about 1km. Dolphins are sometimes sighted here.

We have just turned east into the Geruwa, while the Karnali continues on to the left.

Wide, stony, alluvial flats and a shallow stony bottom denote this section of the river

(Photo 15 corresponds with the exact position of the ‘red dot’ in image bottom page 14.)
Massive stone anti-erosion walls line parts of the western bank of the Geruwa.

Again, a shallow stony bottom; and wide stoney flats still prevail on the eastern bank.

Without these immense stone walls, villages on the plain between the Geruwa and Karnali rivers would simply be washed away during the monsoon season.

Leaving the Sivalik foothills through which the Gorge passes far behind, we head east at times, now with the river flanked by high stony banks.

More massive stone anti-erosion walls. Although bound together by wire mesh these are severely damaged from the power of the river in flood. This ‘wall’ would be at least 4m high.

The Geruwa passes through numerous sets of relatively benign ‘rapids’ on its way to the Indian border, reminding one that the land is not quite as ‘flat’ as it looks. Our boatman was still all smiles, even after having fallen out of the raft as we forded the rapid on right!
As we got further downstream and closer to the Indian border the ‘rapids’ got shallower and even more benign. So much so that at times we had to get out and push our raft through.

Large stretches of wide still water, about 2-3m deep, and which had almost no flow, were regularly encountered, which meant long bouts of paddling for our already tired boatmen. It had been a long day.

Just before sunset we passed into areas with ever higher river banks and trees once again started to be seen very close to the rivers edge. Soon after dark we were actually into areas of dense forest that came all the way to the rivers edge.

At times we wondered if the river would ever end, as with no flow and only paddle power to drive us on we often thought we were going nowhere. And night was fast approaching, and we had no permission from the army to be on the river at night.

The last photo taken before darkness fell, and we still had over two hours to go before reaching our pick-up point. Having not anticipated being out on the river at night - given the army controls for poachers and has the authority to shoot first and ask questions later - we had only one small flashlight that soon died. After eventually negotiating the many twist and turns and shallows as the river neared our pick-up point south of Thakurdwara - without incident - we came upon a large rounded ‘rock’ in the middle of the river. However, as were neared within meters of it, the rock suddenly boled for the opposite bank! It had actually been a large rhinoceros standing midstream and no doubt received as big as shock as we did at the sudden turn of events. An exciting end to a very enjoyable if not exciting day - as we had seen no dolphins. The old adage “you should have been here yesterday”, or last week to be precise, proved apt.
Wildlife Seen Along the Karnali and Geruwa Rivers and Their Environs

The 'big ticket' or high profile conservation animal many 'conservations' want to be seen associated with. Unfortunately, the Gangetic River Dolphin in Nepal, not being as 'attractive' as it were, is beneath the radar of many conservancy minded individuals and organisations. Expedition member Umang Thapa captured these tiger images on the Geruwa River.

Another high profile conservation animal many 'conservations' want to be seen associated with. These images were taken on the banks of, or just adjacent to, the Geruwa River. Meeting one of these huge beasts in mid stream at night ('up close and personal' as we did) certainly gets the heart racing!

Both the Mugger (Crocodylus palustris or 'crocodile of the marsh') and Gharial (Gavialis gangeticus) crocodile inhabit the same waterways as the Gangetic River Dolphin. On left is the 'Mugger' while upper right is the Gharial, which is listed as a critically endangered species by the IUCN. Note on bottom right how the two species co-exist together in the same proximity. Two Gharial on left and a Mugger on right.
A troop of Langur monkeys on the eroded banks of the Karnali River, just downstream from Chisapani. A Langur monkey watches from his treetop perch.


A herd of Buffalo cross the Geruwa River just south of Hattisar, near Thakurdwara.
Here guests from Tiger Tops Jungle Lodge patrol along the edge of the Geruwa River mounted on an elephant in search of wildlife. Almost all of the wildlife as seen on the previous two pages can be encountered in this manner.

Specific Observations / Recommendations

Given the discrepancy in dolphin numbers believed to exist in Nepal, especially in West Nepal, and the importance of protecting and conserving the dolphins’ remaining but ever decreasing habitat, particularly if there are larger numbers than is generally thought to exist, it is imperative that the Government of Nepal, with the aid of the likes of the WWF, etc, instigate frequent habitat monitoring via their National Trust for Nature Conservation (previously known as the King Mahendra National Trust) offices and other bodies, especial local bodies such as the Dolphin Conservation Centre in the Kailali District, so as to get up to the minute information on the status and distribution of the remaining dolphins.

The decision to declare the Ganges River Dolphin India's national aquatic animal was taken on October 5, 2009 during the first meeting of the newly-constituted National Ganga River Basin Authority. I believe Nepal would be wise to follow suit and do the same and then make a concerted effort to protect and conserve this highly intelligent animal. Nevertheless, protection and conservation without the involvement of the local people in the areas where the dolphins’ frequent will however likely not succeed, so conservation programs with alternate income generating activities must be considered. This could be an incentive for the local people towards dolphin conservation as well as for community based tourism development. As, without an immediate and concerted conservation effort, the Ganges River Dolphin will almost certainly become extinct nationally in Nepal in the future, as did the Baiji dolphin in China just several years ago. An ecosystem-based conservation action plan / strategy is no doubt imperative now to save the Ganges River Dolphin in Nepal.

The tragic extinction of the Yangtze River Dolphin or Baiji in China in 2007 became a major news story and sent shockwaves around the world. It made for a romantic story, for the Baiji was a unique and beautiful creature that features in many Chinese legends and folk tales. The Goddess of the Yangtze, as it was known, was also the lone representative of an entire and ancient branch of the Tree of Life. But perhaps the greater tragedy is that its status as one of the world's most threatened mammals had been widely recognized, yet despite wide publicity virtually no international funds
became available! (From a review of the book Witness to Extinction by Samuel Turvey.) The underlined then is very relevant with regards the dolphin’s current status in Nepal and general lack of awareness to its plight throughout the rest of the world.

It came as no surprise to me then, that like myself in 2010, nearly every foreigner I have spoken to had no idea dolphins even existed anywhere in Nepal. As a matter of fact one supposedly knowledgeable and conservationist minded individual, with an extensive background in West Nepal, and the head of a conservation organisation no less, denied outright in 2012 - and poured scorn on this author for even suggesting - that dolphins had ever been seen in the Mohana River. When someone of his standing could put forth such woefully uninformed statements I fully realised the mountain that must be surmounted to get the dolphins in Nepal the exposure they need so that conservation organisations get more directly involved and up to date, as although the Gangetic River Dolphin may not be as ‘high profile’ or visible as the tiger or the rhino, they do deserve protecting and conserving as well. If not they will soon be gone and we will all be the poorer for their passing.

Are we then going to let the Gangetic River Dolphin in Nepal suffer the same fate as the Baiji? We must learn from the demise of the Baiji, for there are numerous other threatened species that will suffer the same fate because of the same human mistakes associated with [the Baiji], but whose loss we may not realise until it is too late. Shame on us if we allow this happen to the Gangetic Dolphin in Nepal!

**Basic Area Information.**

For those wishing to visit the Bardia National Park, the Park / Thakurdwara is approximately 600kms west of Nepal’s capital Kathmandu and approximately 500kms east of Delhi, the capital of India. It can be reached by daily flights (of approximately 45 minutes) from Kathmandu to Nepalgunj, or by a 15 to 18 hour (depending on the weather and the traffic) road trip from Kathmandu. The wet season ranges from May/June to August/September (plus / minus depending on the arrival / departure of the monsoon) while the dry season ranges from October to April. The prime dolphin sighting ‘season’ according to the Dolphin Conservation Centre is July / August / September.

Accommodation ranges from the relatively up-market to lodges of varying degrees of comfort, etc. For the area in question the Tiger Tops Karnali Jungle Lodge would be considered the ‘5 star’ establishment so to speak, while the lodge we stayed in would be considered about ‘2 star’.

**Thanks is Due**

The author would like to take this opportunity to thank the officers of the National Trust for Nature Conservation in Nepal, both in Kathmandu and Bardia District, for the help and support they gave our expedition. And also a big thanks to the Dolphin Conservation Centre in Kailali District, and the staff at Tiger Tops Karnali Jungle Lodge in Bardia District; West Nepal. And of course to our indefatigable raft-men.

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4 What was so surprising about his statement was that with just a little on-line internet searching, papers by the World Wildlife Fund and other researchers from Tribhuvan University (Kathmandu), etc, can be found with a simple search entry, some actually stating the number of dolphins they had counted in the Mohana River. And while their numbers may be considerably lower than the DCC’s figures (as seen in the table on page 24) they certainly do show they exist in the Mohana and have for many years.
An Elephant in the Closet-The West Seti Dam Project

Although not mentioned previously in this report, there was also the threat to the dolphin habitat by the proposed West Seti Dam Project. However, it seems that after many years of campaigning by numerous organisations from Nepal and abroad the plans for the construction of the West Seti Dam in West Nepal have been shelved. In 2010 the campaign had already enticed the Asian Development Bank to pull out from the project for its failure to comply with its own policy on information disclosure, public participation, environment, and the rights of indigenous people living in the affected area. The decision by the government of Nepal not to grant permission for construction to the Australian construction company Snowy Mountains Engineering Corporation is yet another success. Fortunately, in 2011 the government of Nepal cancelled the project altogether.

Regrettably however, it is reported that the China state owned builder of China’s Three Gorges Dam (CTGC or China’s Three Gorges Corporation) has also expressed its interest in developing the 750-megawatt West Seti Hydropower Project. It believes that the project represents a major opportunity for CTGC to diversify into a market with significant growth potential but warns that regulatory issues and public sentiment towards the project could delay its implementation.

The West Seti River (note; not the same Seti River that is mentioned in the photo caption on page 10) flows through one of the least developed regions of Nepal and is a tributary of the Karnali River. The dam would have destroyed a huge amount of land and biodiversity, and prevented migratory fish species from reaching upstream spawning grounds. Apart from that, large groups of indigenous people, depending on the river and the surrounding area for their livelihoods, would have been displaced. These people would have benefitted little, as 90% of the electricity was to be routed to India through a 230-kilometer transmission line. (From ‘Both Ends’ website.)

Relevant Books and Websites of Interest

**RIVER DOLPHIN BOOKS**


**DOLPHIN WEBSITES**

The IUCN (International Union for the Conservation of Nature) Red List of Threatened Species website.
http://www.iucnredlist.org/apps/redlist/details/41756/0

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WWF (World Wildlife Fund) website for the Ganges River Dolphin.
http://wwf.panda.org/what_we_do/endangered_species/cetaceans/about/river_dolphins/ganges_river_dolphin/

A 2006 report in PDF form by the WWF regarding the status, distribution and conservation threats to the Ganges River Dolphin in Nepal
http://assets.panda.org/downloads/dolphin20report24may06.pdf

EDGE (Evolutionary Distinct and Globally Endangered) website re Ganges River Dolphins.
http://www.edgeofexistence.org/mammals/species_info.php?id=65

WDCS (Whale and Dolphin Conservation Society) International website on river dolphins.

CMS (Convention on Migratory Species) website for the Ganges River Dolphin.
http://www.cms.int/reports/small_cetaceans/data/P_gangetica/p_gangetica.htm

An article in PDF form by the Central University of Bihar, BIT Campus, Patna, on the Ganges River Dolphin.
http://bhenvis.nic.in/pdf/Article_on_Ganges_Dolphin.pdf

Nepal Nature. Nepal has Dolphins!
http://www.raonline.ch/pages/np/visin/npnature0106b.html

The GEF Small Grants Programme for the Dolphin Conservation Centre, Kailali District. West Nepal.
http://sgp.undp.org/web/projects/8988/participatory_dolphin_conservation_for_sustainable_development_project.html

Dolphin Conservation Centre founder with Indian officials during a transboundary meeting with regards the Ganges River Dolphin.

Article on Kailali area dolphin extinction in the Himalayan Times newspaper, Kathmandu, Nepal.

WEST SETI DAM WEBSITES

West Seti Dam
http://en.wikipedia.org/wiki/West_Seti_Dam

International Rivers. West Seti Dam Project
http://www.internationalrivers.org/node/2361

Both Ends. West Seti Dam Project
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Wise Earth. West Seti Dam Project
http://www.wiserearth.org/resource/view/0912549a9483684b8117ae23bc2b2821

Environmental Assessment Report 2007. West Seti Dam Project

Nepal River Conservation Trust. The Karnali River
http://www.nepalrivers.org.np/Article/the-karnali-river-article.php

The author - fresh from Expedition ‘Operation Dukedom’, an Explorers Club Flag Expedition surveying the wreck of the Japanese WWII heavy cruiser HIJMS Haguro in the Malacca Strait (see 2010 Flag Reports, EC Flag 52*) - in front of the great Buddhist stupa at Bhodanath, Kathmandu, Nepal, December 2010.

*http://www.explorers.org/index.php/expeditions/into_the_field/flag_reports/category/year_2010

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