



Status of Dolphins in Nepalese Rivers

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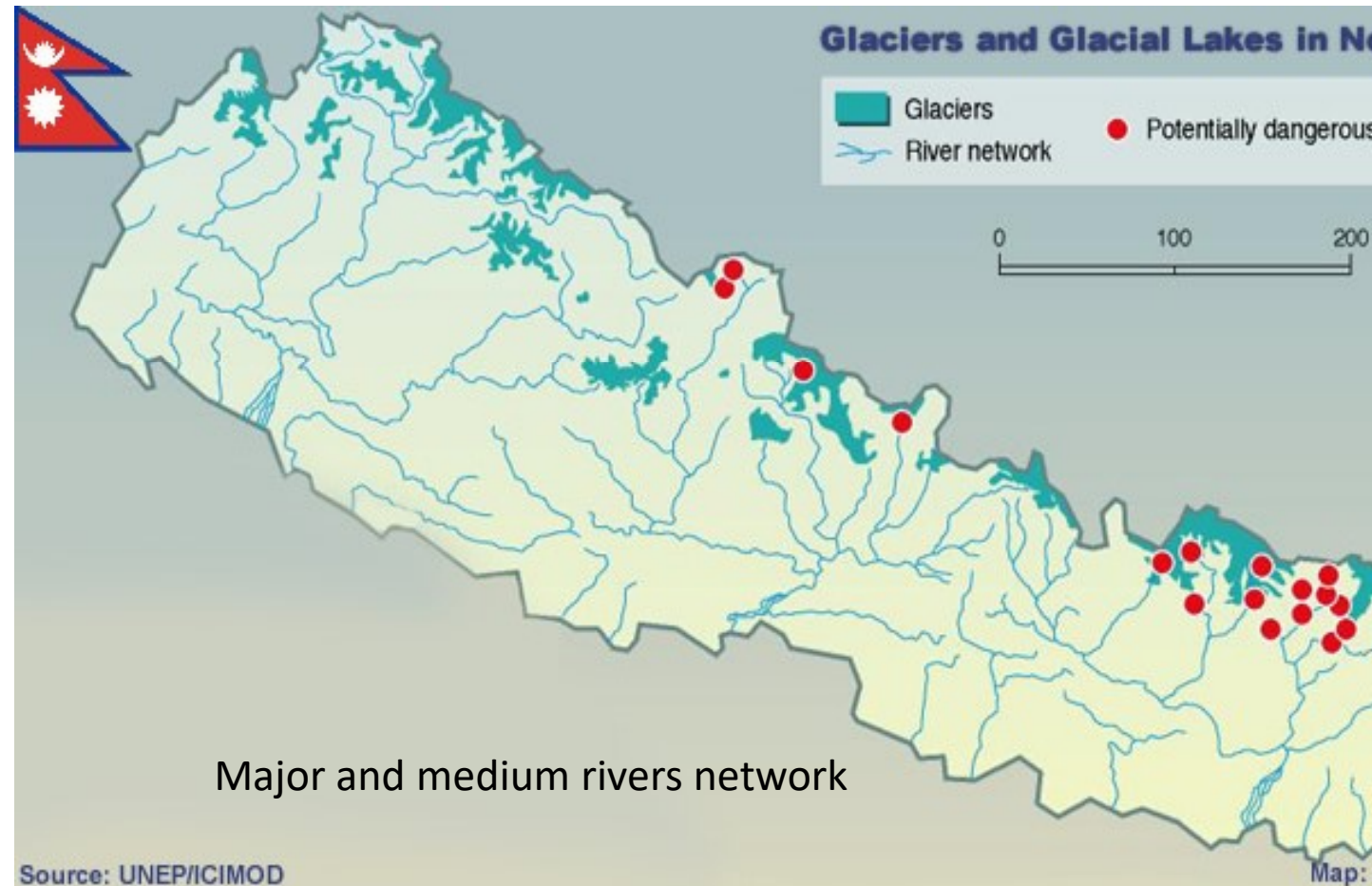
River Networks of Nepal

More than 6000 rivers
covering 25000 km in
total length.

Broadly classified into
three categories: major,
medium and minor

The major rivers originate
from snow and glacial
regions in Himalayas

Flow regimes are mostly
governed by the melting
of snows and glaciers.



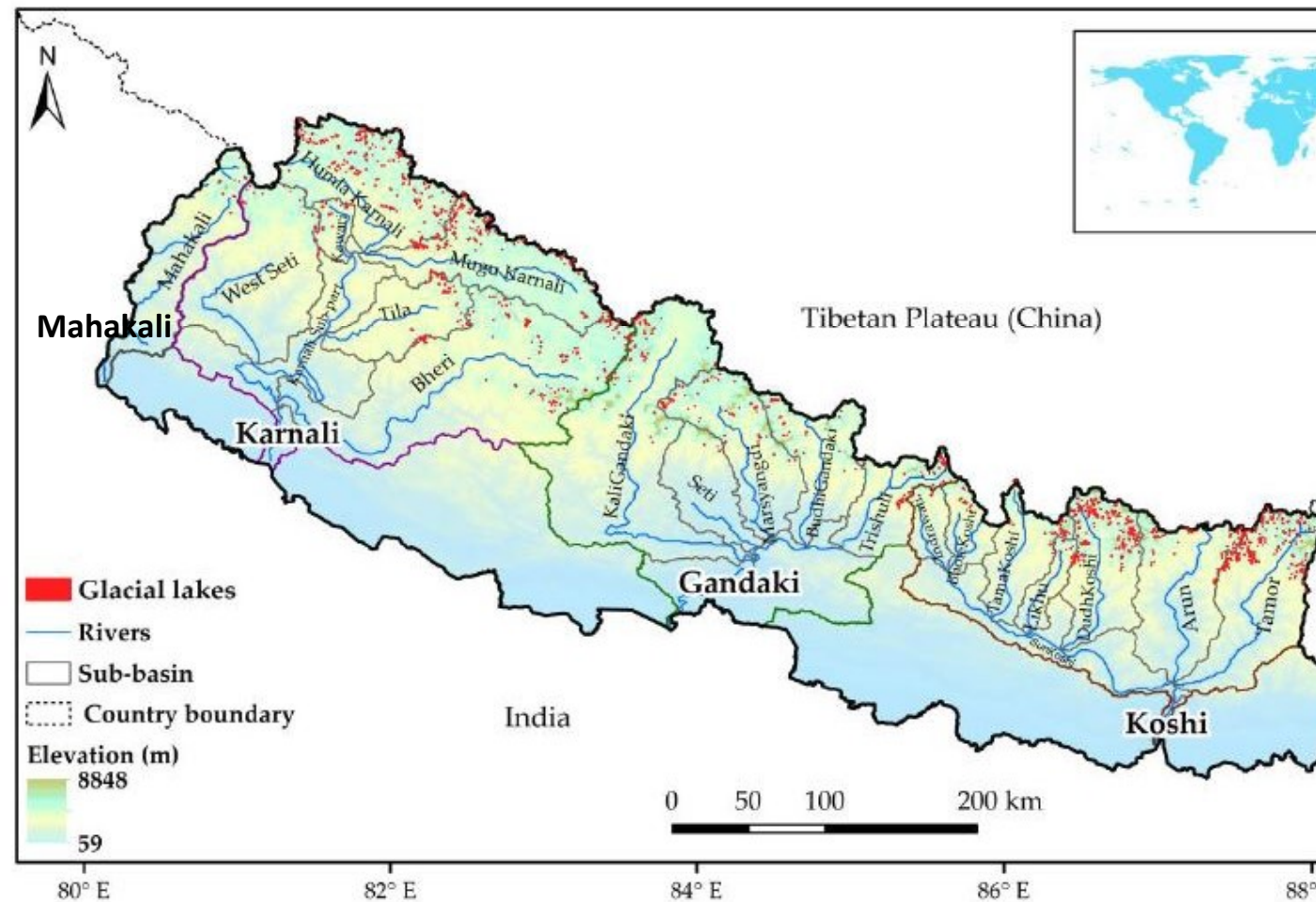
Major Rivers and River Basins

The main river systems are: Mahakali, Karnali, Gandaki (Narayani) and Koshi

The total area drained by the major rivers alone is more than 80% of the total drainage area of the country.

Each major river, besides the Mahakali, has seven large tributaries draining large catchments.

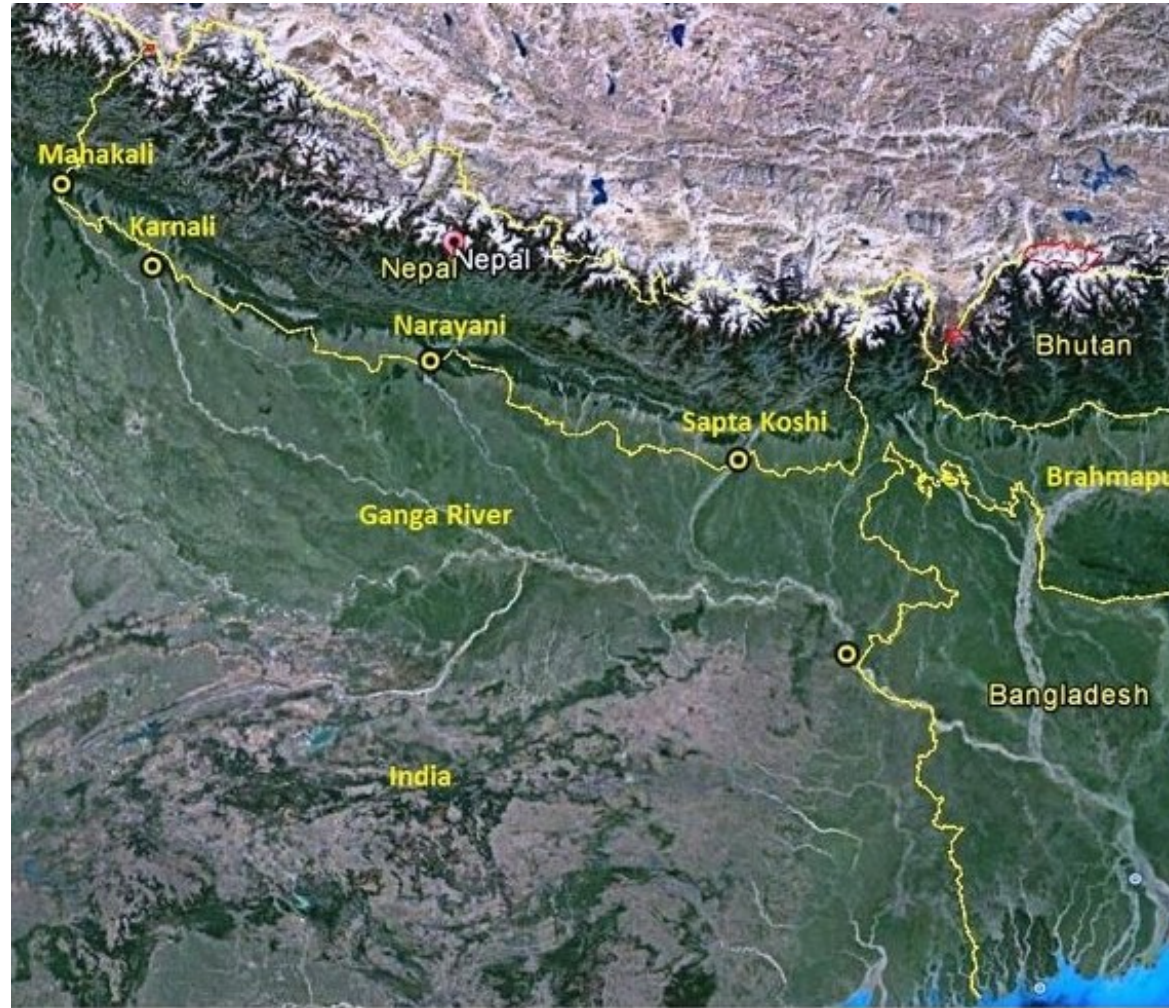
Most of these rivers and streams drain from north to south with some exceptions from west to east.



Connectivity with Ganga River of India

The four major river systems of Nepal are torrential in the north and almost stagnant in the south

All these rivers ultimately drain and connected to the River Ganges of India.



Dolphin Habitat

Dolphins are seen and available only in the lower stretch of river flowing in plain area with deeper water and low flow velocity

Nepalese dolphin is Gangetic dolphin, *Platinista gangetica gangetica* and it is commonly called “Sous” -;f]+;_ in Nepal

Very small population of Gangetic dolphin is present in these rivers – estimates less than 100.

Dolphin is recorded from all major systems, but no record in recent years from Mahakali

They migrate lower basin to upstream as the monsoon starts and water level increases to the tributaries

Dolphin in Gandaki (Narayani) River

Narayani River flow from Central Nepal to Bihar India.

Dolphins in Narayani river has been reported occasionally and latest by 2018.

Previously only adults dolphins were reported single of in two.

During 2018 dolphin calf was reported from Tribeni area with is near to India border. Observation was made during gharial monitoring.

This river has reported fewest dolphin population among the three river systems.

Never reported more than 3 when monitored.



Ganges River dolphin in Narayani River; ©Roh Thapa, Tribeni.

Dolphin in Koshi River

This river is in the eastern Nepal and flows down to Bihar of India.

There are about 10 km stretch which flows in southern plain of Nepal from Rajabans to Koshi barrage.

Koshi always changes its course

Dolphin has been observed both upstream and downstream of Koshi barrage



Dolphin number observed in Koshi River

Year	North of barrage (Dam)	Total Count	Reference
1993	12	18	Shrestha (1993)
1994	3	3	Smith et al. (1994)
2007	0	15	Chaudhary (2007)
2009	6	11	Subba and Limbu (2009)
2010	5	11	Khatri et al. (2010)
2018	?	9	Shah et al. (2018)

Dolphin in Karnali River

This is the longest river of Nepal and flows down to Uttar Pradesh with 46 km of stretch in plain area.

Possess highest population among three rivers having Dolphin

It has two main tributaries - Mohana and Geruwa river where Dolphin migrates during monsoon flood.



Dolphin in Karnali River

Year	Total count	River stretch range (km)	Reference
1982	12	46	Shrestha (1982)
1983	20	46	Shrestha (1983)
1986	23	46	Shrestha (1986)
1990	6	18	Smith (1990)
1993	2	20	Smith (1993)
1994	6	36	Shrestha (1994)
1995	8	36	Shrestha (1995)
1998	6	20	Smith (1998)
1999	4	17	Timilsina (1998)
2003	4	17	Joshi (2003)
2005	4	20	WWF (2006)
2015	8	25	Paudel et al. (2015)
2018	43	Mohana tributaries	Shah et al. (2018)

Conservation strategy

Dolphin is listed as “Endangered” in IUCN red list category

“Critically Endangered” in National Red Data Book

Legally protected endangered freshwater cetacean mammal by National Park and Wildlife Conservation Act, 1973.

Aquatic Life Protection Act 1960 – First Amendment 1997

Awareness and enforcement of Act by local government is the concern ?

Threat of capture and kill

Although protected and illegal to catch and kill, occasionally fishermen are found to catch and kill.

Fishermen might have attracted to make money with this big catch and selling for meat.

This is the case of Koshi River.



Dr Bharat Raj Subba, a zoology professor at Post-graduate Campus, Biratnagar, inspects a Gangetic dolphin killed by local fishermen, at District Police Office Morang on Monday. Police seized the dolphin as it was being sold for meat. The dolphin is 6 feet 9 inches long and weighs 83 kg. It was caught in the Koshi river and later killed by local fishermen. The Gangetic dolphin is listed as a critically endangered species by IUCN. According to WWF, less than a dozen such dolphins remain in Nepal.

POST PHOTO: BHIM GHIR

Issues on Conservation

Inadequate conservation investment:

Nepal need to focus more effort on critically endangered species with small populations like river dolphins and not solely invest in mega species like elephant, rhino, and tiger

Lacking of international collaboration efforts between Nepal and India Government:

The river dolphin is a migratory species, but no efforts have been jointly organized between these two countries for the conservation of this migratory species.

Limited funding opportunity for intensive research:

Although data are limited on behaviors (surfacing and habitat use) and abundance, funding to understand such quantitative information is limited.

Large development structure:

In addition to barrages constructed across the river, governments have built, proposed and planned several irrigation intakes and hydropower projects in all of the river systems.

Interaction between artisanal fishing and river dolphin:

- Immense pressure is experienced from artisanal fishing communities in Nepalese river systems that are used for their daily livelihoods.

Covid-19 and Dolphin

Increased sightings of dolphin was seen in tributaries of Karnali including Mohana and other smaller rivers.

Increased pre-monsoon rain caused increased level of water in these smaller rivers, due to which the dolphins might have returned earlier than usual (Mandal, 2020).

They were recorded as early as 1st week of June in Mohana and other smaller tributaries in Kailali district.

Group of dolphins at the confluence of the Mohana and Karnali Rivers are seen recently.

These area looks breeding ground, and they migrate from Karnali main river and from India.



Unnati Chaudhary in Kailali [July 13, 2020](#)

Video_ Dolphin in Kailali, Nepal
Credit: Dhirendra Chand (time 15 seconds)



Conclusion

Dolphin population is not increasing rather decreasing

Might need to think of separate governmental organization for its research and conservation besides private professional working groups

Though Nepal has small population, it might be important niche for breeding ground and to sustain and increase population for future

Collaboration work on Dolphin conservation between India and Nepal need to initiate and keep continuously

Acknowledgement

Thanks to organizing committee for inviting me to attend and share the Dolphin status of Nepal

Special thanks to Dr Dilip Kumar who contacted me long before about this Webinar and requested attend and present paper, I guess he is the one who communicated with organizer to invite me.

Thank you all for listening me. I have not worked on Dolphin conservation, just collected published information to present it. I have worked on aquaculture and fisheries.

Thank you again