

Importance of Patne river and its impact on human and animal health

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Abstract- The natural environment is the thin layer of life and life support called the biosphere that contains the earth, air, soil, water and living organisms. The connection between protecting the natural environment and safeguarding human health has been recognized for some time. The effect of various environmental exposure such as toxic chemical air pollution and biological agents on the human body is commonly perceived as the central problem in environmental health. Patne river situated in the vindhya mountain range here is found dry deciduous forest and dry and short grass habitat with extensive open woodland along the major seasonal streams. Valley forest and dense forest have an impact on human health. Many species of birds can be found here apart from the tiger it is home to other animals like the leopard, nilgai chinkara, chousinga, chital, rusty spotted cat, porcupine and sambhar. Gharials and muggers can be found in river patne. Environment health is a key part of any comprehensive public health system. Field work according to advanced policies and programs reduce chemical and other environmental exposure to air water and soil and food to protect people and provide communities with healthier environments.

Key word: Forest, Water, Tiger, Villages, Mountain range, Patne river, Human health.

INTRODUCTION

Patne river situated in the vindhya mountain range in Madhya Pradesh. Its climate is warm and temperate and dry deciduous forest occurs. Tribal and forest communities and animals coexist with the tiger in this natural reserve (Bhardwaj, T(2021)). Their employment completely depends on the forest. Agriculture is the major source of income in the villagers. During the season time that peaks as summer peaks they also collect *mahua* and *chironji* and other plant material such as tendu and its leaves from the forest. It is very hot for the duration of the summer season and as it is also a drought level area, ground water level in the region is very low and water scarcity found in some region. This makes it very hard for the farmers to practice something outside rain season of agriculture (Forrest J L *et al* 2015). They migrate to the bigger cities with family in search of work. The women in the house are responsible for the firewood collection for cooking food. These women collect dry log from the forest to use in their house and to sell in the market. A woman's life here will mean going to the forest one day for collection and to the market in Amanganj, Pawai, Dwari and nearby the next day to sell it. They walk to the market, carrying the heavy lot of wood on their head. For each log they get 100 to 200 Rupees. Dwari and Amanganj are around 25 km so they walk 50 km every alternate day. They sell also in panna region. The women often carry vessel full of water and travel 5 km. Drinking water source is either a well or small natural springs, or river in the Pawai and also in Amanganj not always necessarily in one's own village Jellinek S (2017). There is no electricity in the villages and remote areas. It is actually dark during the night and the presently source of light is solar energy panels which makes it actually tough during the rainy season when sunlight is not accessible for days. While the community living in the areas are used to everything and they have modified to life in the forest (Gopal R *et al* 2010). There is one primary and middle level school in almost each village, but no electricity and roads. The forest not just comes as a blessing but it also brings a lot of its own set of problems to deal with. The wild animals damage the crops all the time and predators like leopards and tigers capture and kill their cattle. Villagers do not come out of the house or traverse through the forest after sunset because the danger of wild animals is at all times there. The forest department warned them to leave their homes and habitat and leave the forest. The initial displaced families that agreed readily got money as well as land; but the ones left back now are the ones who did not agree. If they pick to go now, the compensation is only in money, 10,00,000 INR per adult and no land, but the people are not ready to do so (Jha K K, Jha R, Campbell M O N (2021)).

WATER RESOURCES AND HUMAN HEALTH

Water is an important source necessary for all aspects of human and ecosystem survival and health. In recent times the farmer uses many types of drugs and uses the different chemicals and fertilizers in the crops. These chemicals come to the water body of Ken River and are polluted. The amount of water available per capita will decrease simply with the increasing human population (**Rodrigues A S, Brooks T M (2007)** clean water of river is a necessity for human health animal and fish health (**World Health Organization, 2019**). Aquatic biodiversity plays a fundamental role in the provision and regulation of water quantity and quality. More of the world's freshwater is provided subsequent from mountains through river networks, and aquatic plants and forests play an important role in flow adjustment (**Zhang et al., 2017**). Biodiversity is central to the health of these aquatic ecosystems, as it supports ecosystem functions that provide, regulate and purify freshwater (**Dudley and Stolton, 2003**). The ability of aquatic plants to remove heavy metals from water differs between species to species (**Schück and Greger, 2020**). A intermediary indicator of good water quality and ecosystem health is the diversity and composition of aquatic organisms, as they are sensitive to nutrient pollutants in the water, such as nitrate (**Cardinale, 2011**), pesticides (**Liess and Beketov, 2011**) and pharmaceuticals (**Binelli et al., 2015**).

WATER DEMAND:

Changing lifestyle of human water consumption increases dramatically during summer period so more water coolers are required for human health in the urban population. Villager's use a simple hand fan in the summer region. Much more water scarcity is found in the summer region. Many areas / villages are very water deficient regions such as Pawai, Amanganj and Buxwaha region ground water level is very low. So humans take water from a mile or kilometre or water tanker for water consumption (**Sarkar, M S et al 2016**).

The interlinking of Ken and Betwa River has been proposed by the govt of india considering that it would minimize water problems in the entire bundelkhand area. No doubt this project may bring some relief to the local people and their health but it is expected that a large chunk of critical tiger habitat of Panna tiger reserve (**Krishnamurthy R et al 2016**). Water is central to any developmental process for human health. Quality and quantity of water should be kept in mind on all water related issues: availability and quality of freshwater is a matter of concern all over the Panna region.

Water Resources: Panna is a most backward region. Water available in Panna is mainly three chief sources: surface water, ground water (well, springs) as well as the wetland sites Ken and Patne River is the main river for source of water. Ken River originates near the village of Ahirgawn on the north west slopes of barner range in Katni and travels a distance of 427 km before merging with the Yamuna at Chilla village district Banda. Some of the pond well fall regions are also the source of water (**Karanth K U et al 2004**).

FOREST AND HUMAN HEALTH

Forest Panna

Patne river is situated near in panna region and Panna region has two territorial and one wildlife divisions due to its large forest area (more than 50% of district's geographic area). Wildlife division is part of Panna Tiger Reserve which has extended in Damoh and Chhatarpur and Banda districts also. There are two territorial divisions- North and South Panna Forest Divisions with mutual area of around 2600 Sq Kms (**Dixit R D (2001)**).

North Panna Forest division:

North Panna Forest region has an area around 800 sq. Kms with two subdivisions- Panna and Vishramganj. The division has five ranges- Panna, Vishramganj, DevendraNagar, Ajaygarh and Dharampur. A large part of this division shares closeness with the Panna tiger reserve, so sensitive with respect to Wildlife. The major part of the district's population inhabit this area so biotic pressure is also high (**Hooker J D (1877)**). The division also shares a border with Satna District of Madhya Pradesh and Banda District of Uttar Pradesh. The attractive teak and Bamboo forests of Ajaygarh, Dharampur and Devendra Nagar are quite scenic. The Kauwaseha Valley has at all times been a tourist attraction.

South Panna Forest division:

South Panna Forest range has an area of around 1800 Sq. KMs touch the borders with Satna, Damoh, Katni and Chhatarpur districts of Madhya Pradesh. The south range comprises 2 subdivisions- Kalda and Pawai, and six ranges – Saleha, Kalda, Pawai, Mohandra, Shahnagar and Raipura. The production division is also under South Panna division with a separate Ranger for this. The untouched forest of Kalda with its 110 years old 'Shyamgiri' Forest Rest House mesmerises everyone (**Singh N P et al (2003)**). Different types of flora and fauna are present in the north and south divisions of Panna district. Some are described below (**Table-1**)

S.No.	Plant Scientific Name	Family
1	<i>Bachanania lanzen</i>	Anacardiaceae
2	<i>Acacia leucophloea</i>	Fabaceae
3	<i>Psidium guajava</i>	Myrtaceae
4	<i>Adina cardifolia</i>	Rubiaceae
5	<i>Anogeissus Latifolia</i>	Combretaceae
6	<i>Anthrocephphlis kadamba</i>	Rubiaceae
7	<i>Ailanthus excels</i>	Simaroubaceae
8	<i>Artocarpus heterophyllus</i>	Moraceae
9	<i>Terminalia belerica</i>	Combretaceae
10	<i>Bridelia retusa</i>	Phyllanthaceae

S.No	Aquatic animal Scientific Name	Family
1	<i>Katla Katla</i>	<i>Cyprinidae</i>
2	<i>Mrigala</i>	<i>Cyprinidae</i>
3	<i>Mahseer</i>	<i>Cyprinidae</i>
4	<i>Silver Carp</i>	<i>Cyprinidae</i>
5	<i>Grass Carp</i>	<i>Cyprinidae</i>
6	<i>Testudines</i>	<i>Chelydridae</i>

S.No	Animal Scientific Name	Family
1	<i>Cervuselaphus</i>	<i>Cervidae</i>
2	<i>Macca fascicularis</i>	<i>Callitrichidae</i>
3	<i>Bus taurus</i>	<i>Bovidae</i>
4	<i>Capra aegagrus hircus</i>	<i>Bovidae</i>
5	<i>Bubalus Bubalis</i>	<i>Bovidae</i>
6	<i>Melursus ursinus</i>	<i>Ursidae</i>
7	<i>Panthera pardus</i>	<i>Felidae</i>
8	<i>Hyaena Hyaena</i>	<i>Hyacnidae</i>
9	<i>Canis aureus</i>	<i>Canidae</i>
10	<i>Vulpes benglensis</i>	<i>Canidae</i>
12	<i>Cuonalpinus</i>	<i>Canidae</i>
13	<i>Sus scrofa</i>	<i>Sudae</i>
14	<i>Panthera lio</i>	<i>Felidae</i>
15	<i>Oryctolagus cuniculus</i>	<i>Leporidae</i>

ENVIRONMENT AND HUMAN HEALTH:

Human health is closely linked to the condition of the environment. Good quality natural environments give basic needs, in terms of clean air and water, fertile land for food production, and energy and material inputs for production. Green body also serves to regulate climate and prevent flooding. The environment and its health represents an important pathway for human exposure to polluted air, noise and hazardous chemicals. Panna is a less polluted city of Madhya Pradesh. People walk every day in near the forest for good health (**Verma D M (2001)**)

Air pollution is the single largest environmental health risk. Panna is a less developed city with only 04 industries which are authorized by the pollution control board and no contaminated sites. Waste is recycled. The major source of air pollution in Panna is transport and vehicles. Noise exposure from transport sources and industry can lead to annoyance, sleep disturbance and related increases in the risk of hypertension and cardiovascular disease. Panna have

less noise exposure and dense forests absorb heavy noise every day. The major source of noise pollution in Panna is vehicular traffic. MP pollution control board randomly monitors noise at various locations (Wikramanayake E *et al* (2004).

CONCLUSION:

Human health entirely depends on the environment. Good quality of air water and a noise free environment is important for human health. Panna is the city of diamonds and tiger and entirely depends on road transport rich in flora and fauna. It is a subtropical climate like most of north India. It has a hot dry summer followed by monsoon rains and a cool and relatively dry winter minimum temperature during winter is 4-6 degree Celsius while maximum temperature during summer is 38-42 degree. Air quality is good in noise and water pollution is less, rich forest areas (248060 hectare) are found. Ken River is the sole water body situated in Panna district. The MP Pollution Control Board regularly observed environmental health.

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