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# International Day for Biodiversity

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# International Day for Biodiversity

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## *"From Agreement to Action: Build Back Biodiversity"*

Although every Biodiversity Day carries its own special significance, this year's global celebrations bring with it a renewed sense of hope with the adoption of the \*Kunming-Montreal Global Biodiversity Framework at the 15th Conference of Parties to the UN Convention on Biological Diversity (COP 15).

To mark this incredible and historic achievement, the proposal for this year's theme is "From Agreement to Action: Build Back Biodiversity" which builds on the results of COP 15. Now that the world has the Kunming-Montreal Global Biodiversity Framework (agreement), the focus must quickly shift to its implementation (action).

### **Background**

Biological diversity is often understood in terms of the wide variety of plants, animals and microorganisms, but it also includes genetic differences within each species — for example, between varieties of crops and breeds of livestock — and the variety of ecosystems (lakes, forest, deserts, agricultural landscapes) that host multiple kind of interactions among their members (humans, plants, animals).

Biological diversity resources are the pillars upon which we build civilizations. Fish provide 20 per cent of animal protein to about 3 billion people. Over 80 per cent of the human diet is provided by plants. As many as 80 per cent of people living in rural areas in developing countries rely on traditional plant-based medicines for basic healthcare.

But loss of biodiversity threatens all, including our health. It has been proven that biodiversity loss could expand zoonoses - diseases transmitted from animals to humans- while, on the other hand, if we keep biodiversity intact, it offers excellent tools to fight against pandemics like those caused by coronaviruses.

While there is a growing recognition that biological diversity is a global asset of tremendous value to future generations, the number of species is being significantly reduced by certain human activities. Given the importance of public education and awareness about this issue, the UN decided to celebrate the International Day for Biological Diversity annually. © **UNEP**

\*The conclusion of the 15th Conference of Parties to the UN Convention on Biological Diversity saw the adoption of the Kunming-Montreal Global Biodiversity Framework (GBF). Amidst a dangerous decline in nature threatening the survival of 1 million species and impacting the lives of billions of people, the GBF aims to halt and reverse nature loss. The framework consists of global targets to be achieved by 2030 and beyond to safeguard and sustainably use biodiversity.

*We have put out a special edition of our publications to celebrate and raise awareness about International Day for Biodiversity and its significance to our community.*

# Why Does Ethics in Bird Watching Matter?



**Parvaiz Yousuf**

**E**very year, World Migratory Bird Day is observed on May 13, when birders from around the world come together to enjoy birding. It is actually an awareness programme aimed at highlighting the need for migratory bird conservation as well as their habitats. A lot of people in Kashmir take part in this event in the form of bird watching. Birding, or “bird watching,” is the activity of studying and observing birds in their

natural environments. It’s a hobby that it’s estimated millions of people all over the world share and has been for centuries. Binoculars, field guides, and meticulous notes help bird watchers identify and catalogue the many species they encounter. Anyone, regardless of age or expertise, can enjoy the hobby of bird watching in any number of locations, including urban parks, woodlands, wetlands, and coastal areas. This hobby not only helps people unwind and relax but also aids in conservation efforts for birds by yielding useful information about their numbers and where they live.

When it comes to Kashmir, the region has witnessed a huge boom in the number of bird watchers during the post-Covid-19 lockdown. Since the people were off work and confined to their houses, the concept of balcony birding flourished. Many people started birding

and observing birds around their houses. With the topography of Kashmir, where most people live in rural areas or around mountains, it was easier for people to go birding. This served as a means of enjoyment that would take the boredom and stress of lockdown away.

With the rise of birders in Kashmir, a problem came along. Not every birder knows anything about the birdwatching ethics that should be followed.

Bird watching is an activity that many people enjoy, but why does it matter to practice ethics in bird watching? In this study, we'll explore the importance of ethics in bird watching and why it is so important for birders to follow the ethical guidelines set by the community – starting with the question, why birding around the globe is so important and how many bird species are there in Jammu and Kashmir, including Ladakh.

### **Bird Watching Around the World**

Bird watching is a very popular hobby all around the world. From the rugged wilderness of Alaska to the lush rainforests of South America, birdwatching enthusiasts can be found in nearly every corner of the globe. A recent report indicates that there are around 45 million bird watchers around the world, out of which 39 million are balcony birders. The rest 16 million are active birders who mostly go for birding away from their homes. These people travel hundreds of kilometres to have a glimpse of their favourite bird.

Birdwatching is a multi-million dollar industry and a widely practised hobby in the United States. The United Kingdom (and other European countries) are popular destinations for bird watchers who travel to the continent to see birds

like the secretive nightjars and the brilliantly coloured kingfishers. The Camargue region in southern France is known for its extensive wetlands, making it a favourite location for birdwatchers. There are several species of birds that can only be found in Africa and nowhere else.

The Amazon rainforest in South America is a birder's heaven because it is home to hundreds of species that can't be found anywhere else on the planet. Costa Rica's dense forests are home to the strikingly gorgeous quetzal bird, while the Galapagos Islands harbour numerous endemic species, including the blue-footed booby and the flightless cormorant.

The Himalayas are also a fantastic area for birdwatchers. Kashmir, located in the western Himalayas, is home to a number of avian species that can be found nowhere else on Earth, including the spectacled finch and the orange bullfinch.

Almost anywhere in the world, you may find a group of birdwatchers to join. Bird watching is a truly international hobby because it combines elements of exploration of the natural world, scientific study, and quiet reflection.

### **Bird Diversity of Jammu & Kashmir**

Due in part to its unique topography and temperature, the Indian state of Jammu & Kashmir is home to a vast diversity of bird species. The region has a vast diversity of habitats for birds, from the icy Himalayas to the humid Kashmir Valley.

In Jammu and Kashmir, including Ladakh, a total of 677 bird species exist as per a preprint study on Research Square. In terms of the number of birds, the Jammu region is more diverse, with



around a total of 480 bird species found there. Similarly, the Kashmir region has a total of 418 bird species, while the Ladakh region has 414 bird species. Most of these bird species are present in all three regions and overlap in their habitat.

Some of the most iconic bird species found in Jammu, Kashmir & Ladakh include the Himalayan monal, a stunningly beautiful bird with iridescent feathers, and the black-necked crane, a rare and endangered species that breeds in the high-altitude wetlands of the region, the Kashmir flycatcher which only breeds in the mountains of Kashmir valley. Other notable species include the western tragopan, a colourful pheasant found in the forests of the Pir Panjal range.

In addition to these iconic species, Jammu & Kashmir is also home to a number of migratory birds that visit the region during the winter months. These include species such as the greylag goose, northern shoveler, northern pintail, mallard, Eurasian wigeon, bar-headed goose, and the common teal, all of which can be seen in wetlands and other habitats throughout the state.

### **Why Does Ethics in Bird Watching Matter?**

As with any interest in or interaction with animals, birdwatchers have a need to behave responsibly and with due regard for the natural environment. When birdwatchers follow ethical guidelines, they reduce the risk of unintentionally contributing to the extinction of bird species and the distress of the birds they are watching.

Avoiding disturbing nesting birds is a crucial ethical consideration when

birdwatching. If you get too close to a nest or make a lot of noise, the birds can get scared and fly away, or the chicks might die. Similarly, birdwatchers should stay away from flocks of birds that are roosting or feeding, as doing so can interrupt the birds' normal habits and stress them out.

Another important factor is the moral responsibility of protecting birds and their habitat. This includes not trampling plants, not disturbing nesting sites or feeding areas, and not destroying the habitat in any other way. Furthermore, bird watchers should never attempt to lure birds to an area by disrupting their normal activities, such as by tossing food.

Finally, bird watchers should always put the birds' safety first. This includes staying away from predatory birds or disturbing birds in flight, both of which could be dangerous to the birds. It also involves taking measures to lessen the negative effects that bird watching might have on the ecosystem.

Ethical considerations in birding are important because they help ensure that the hobby will be around for future generations. Birdwatchers may play an important role in conserving the birds they care about and the ecosystems in which they exist if they adhere to ethical rules and best practices.

### **Are Birders in Kashmir Following Ethics?**

With the rise of birders in Jammu & Kashmir, there is a strong need for following ethics. Not every birder is clear about ethical knowledge as far as birding is concerned. To get clear pictures of different bird species, the birders in Jammu and Kashmir or in any part of

the world do not hesitate to disturb the bird. Birders get too close to shy birders, which affects their feeding and breeding. During the breeding season, the birds are highly sensitive, but to get photographs or pictures, birders keep on disturbing the birds.

We should remember that birding is not all about photography. If you take photography out of bird watching, most birders will stop birding. Although binoculars and cameras are a great addition to birding equipment, it does not mean that birding is all about photography. To get the most out of birding and enjoy it, we should really try observing birds with our eyes rather than taking recorded pictures to show to the world. Unfortunately, many birders in Kashmir have misunderstood the real meaning of birding and its purpose.

Similarly, many birders play bird calls on their phones to attract birds. This is, again, strictly unethical, as you are deceiving a bird. Birds use calls to contact each other at times of threat, food, or nesting. However, the use of bird calls disrupts that natural phenomenon, which, again, all the birders do not understand. To earn more money by working as a bird guide, some birders prefer using calls to attract birds out of trees or bushes and disturb them.

### **The Impact of Unethical Bird Watching**

While ethical bird watching can have positive effects on bird populations and their habitats, irresponsible bird watching can have disastrous effects on our feathered friends and the natural world they rely on. Disturbing breeding or feeding birds, leading birds to abandon their young or flee their habitats, and

aiding the spread of invasive species are all major consequences of unethical bird watching.

One of the most common forms of unethical bird watching is disturbing nesting or feeding birds, which can have devastating effects on bird populations. Birds may cease eating or caring for their young if they are disturbed by constant human interference. The local bird population may suffer as a result of nest abandonment or chick death.

Another way in which unethical birdwatching can lead to the displacement of birds from their natural habitats is through the taking of unwanted photos. When birds are trying to raise chicks, any kind of disruption can be devastating. Birds face long-term threats to their survival when they are forced to abandon their natural habitats because they may be unable to locate adequate food, shelter, or nesting grounds elsewhere.

Last but not least, irresponsible birdwatching can aid in the propagation of exotic species. There is a risk of introducing invasive species into natural areas when birdwatchers carry food or other goods into these areas. Because of this, vital ecosystem services may be compromised, and avian diversity may suffer.

Unethical bird viewing can have serious and far-reaching consequences. Bird watchers may help preserve the hobby for future generations by being conscientious of their impact on the environment and the species they enjoy.

### **Role in Conservation**

On this World Migratory Bird Day, we all must vow to come together to conserve birds. By raising public awareness and educating people about the significance

of safeguarding birds and their habitats, ethical bird watching can contribute to bird conservation. Ethical bird watchers can help educate others about the need to protect birds and their habitats by sharing their own experiences and insights with them. This may inspire people to take action to safeguard birds by making them more aware of the dangers they face.

Scientific and conservation efforts can benefit from the information gathered through ethical bird watching. Researchers are finding that citizen science projects, including those in which bird watchers report sightings and other observations, are becoming increasingly popular and useful. Trends in bird populations, changes in bird behaviour, and vulnerable locations can all be better understood using this data.

Ethical bird watching also encourages eco-tourism, which can support local economies while protecting both birds and their habitats. Birdwatchers can help mitigate tourism's negative effects on bird habitats and advance sustainable travel by modelling and supporting ethical behaviour and responsible tourism practices.

### **Call To Action: Promoting Ethical Birding Practices in Kashmir?**

Birdwatchers from all over the world visit Kashmir because of the region's abundance of wildlife. However, if it is not practised in an ethical manner, bird watching in Kashmir can have a harmful effect on the local ecosystem and its bird population. Raising awareness is needed to encourage responsible birdwatching in Kashmir in order to safeguard the region's avian inhabitants and their natural habitats.

Moreover, instead of focusing on celebrating World Migratory Bird Day, birders should observe its significance.

Educating the public on the consequences of irresponsible bird watching is a crucial first step in encouraging ethical birding habits in Kashmir. This can be accomplished through community and school-based awareness and education initiatives. The campaign's goals should include raising awareness of the role birds to play in ecosystems, the harm that unethical bird watching may cause to birds and their habitats, and the rewards that come from taking the time to observe birds in a responsible manner.

The establishment of rules and regulations for bird watching by tourists is another crucial step. Do's and don'ts of bird watching, such as not disturbing the birds, not taking their nests, eggs, or feathers, and respecting local culture, should be outlined in these rules and regulations.

Promoting responsible birdwatching in Kashmir requires the active participation of local populations. Workshops, seminars, and other educational events can help achieve this goal. The local community can be mobilised to take part in bird watching and act as advocates for responsible birding.

Last but not least, birding tour providers and guides may play an important role in encouraging responsible birdwatching in Kashmir. They can inform others of the rules and norms for bird watching and urge responsible behaviour. This is very important for the overall conservation of birds and their habitats.



# Risks of unchecked mining to trout fish in Jammu and Kashmir



**Mukhtar Dar**

In the past decade, different fish varieties including Trout and Mahaseer were plentiful in the pristine glacier and spring-fed rivers/streams. However, due to rapid population growth and in order to satisfy the requirement of rapid construction in the valley, the demand for raw material extraction from rivers/streams increased which led to massive

fish kills. Despite prior warnings from experts, the authorities continue to remain unmoved and the extraction from the valley's trout rivers, streams, and other water bodies, which are home to abundant aquatic life, has been left unchecked, thus posing a serious threat to fish species of J&K.

*This study highlights the risks of unchecked mining to trout fish in Jammu and Kashmir and how policies can be improved. It argues that the government needs to adopt a more ecological approach to mining to make it less damaging to the important aquatic habitat.*

## **Kashmir's Fishing Industry**

Jammu and Kashmir produces 20,000 tonnes of fish each year while 93,000



people depend on fisheries for their livelihood in the Union Territory. According to the reports, the fisheries department has established 534 trout units in the private sector. In addition, 17,398 families earn their livelihood by catching fish. It is important to go into the fascinating story of the introduction of Trout to Kashmir; in 1899, the Duke of Bedford graciously brought 10,000 trout ova to Kashmir from the United Kingdom. Unfortunately, the batch died in transit because there was no air transportation. The second cargo of trout eggs, which included 1800 fry, came from Scotland on December 19th, 1900, in outstanding shape. Some of these were released in Dachigam and Michel. The remaining ones were raised until they were fingerlings before releasing them in other streams across the Valley. While the indigenous snow trout continued to prosper, the imported rainbow and brown trout successfully acclimated to the J&K. Since then these varieties of trout became a source of employment, attraction to tourists, and adornment of Kashmiri streams.

### **Reckless extraction with no exception for trout streams**

Massive urbanization and population growth over the past ten years have put pressure on the river Jhelum and its tributaries, many of which are being mined for building materials including sand, gravel, and boulders while dismissing valid environmental concerns. As a result of careless extraction, the flora, and fauna that live in them have suffered greatly which is causing the devastation of aquatic habitats, destroying fish breeding sites, and removing fish from their natural habitats.

Among 13 species of the Schizothorax, also known as Kashorgard or Alegard

locally, according to researcher Iqbal Dar, just five species are currently found in Kashmir waters, with eight species having gone extinct such as Botia and Birdi while three more are on the brink of extinction as a result of anthropogenic activities and the destruction of their breeding or feeding grounds. Trout farming has been practiced in over 142 rivers, streams, and lakes in Jammu and Kashmir apart from private units. But the government has no qualms about leasing them out for mineral mining. Not adhering to the guidelines of the Jammu and Kashmir Fisheries act, 2018 which remain intact even after the abrogation of Article 370.

In the Tral area of Pulwama district, Naristan is a 49-kilometer-long, meandering snow-fed trout stream. A 2.69-hectare block of the stream, an essential component of the local trout habitat, was allowed for gravel and boulder mining by the authorities in April 2020. The Kashmir Valley's other streams are also in danger. Naristan is just one of the many streams, such as Lidder, Bringhi, and Arin, that face the serious issue of unchecked mining.

According to the Jammu and Kashmir Fisheries Act, before granting approval for mineral extraction, the Department of Geology and Mining must consult the Department of Fisheries. However, according to the fisheries department, this important procedure is not practiced. In this regard, the Department of Fisheries expressed their concerns with the Principal Secretary of the J&K Government through a letter.

The letter reads, "The illegal, unscientific and rampant extraction of bed material like sand, Bajri, boulders, etc. from these natural water bodies have also led to annihilation, extinction,

and extermination of fish biota from these habitats due to ecological imbalance without consideration of Environmental Action Plan. Moreover, the trenches/pools so created by mechanical extraction act as mortality ditches in which the fish particularly the juveniles get trapped and thus cause substantial damage to the existence of fish species.”

However almost two years have passed, but no substantial initiative has been taken to stop the unscientific extraction and the situation has turned from bad to worse. Take the example of Nallah Sukhnag which lies in the Beerwah area of Budgam and has been identified by the Government as a trout stream. However, from Arizal to Ohangam hundreds of tractors and other heavy machines could be sighted extracting stones and sand from it causing deep trenches. Consequently, the abode of thousands of fish has been annihilated under the very noses of the administration.

An official of the Department of Fisheries told the author that despite being declared a trout stream Geological and Mining Department is giving permission to extract minerals from it and consequently devastating its fish breed. Similarly, in the trout streams of Bandipora including Erin, Gurez, and Madhumati, Tippers loaded with sand and boulders are making rounds in these streams posing a severe threat to the habitation of these streams. Consequently, the fish capture per unit effort has also declined over time in the majority of the Valley's water bodies.

Post Article 370 abrogation, no particular protection for trout streams was provided by the new regulations for the extraction of minor minerals that superseded the tougher approach

under the old law. For the first time, the regulations have allowed outsiders to bid on mining contracts in Kashmir. In fact, outside businesses and individuals have captured the majority of mining contracts for minerals in the streams and rivers. Pertinently, the local miners would mine manually at most of the sites and its impact on the ecology of streams was less. However, after outsiders secured the mining contracts the extraction process became faster and unsustainable.

Contractors and potentially even government organizations are breaking several of the blatantly stated standards for environmental protection by using heavy machinery in the ecologically fragile trout streams. The topography of streams is changing drastically due to the use of heavy machinery. Heaps of stones can be found lying near some streams and pits have formed due to digging in other spots. These streams cannot be recovered for trout breeding if the extraction continued in the same pattern for a long.

### **Recommendations:**

The Department of Fisheries has already listed the trout streams of the valley on its website. Every year, the department drops thousands of fingerlings worth lakhs of rupees in these streams. However, due to the mining in these streams, the efforts of the department are not yielding the expected results as the breeding and feeding places of fish are being destroyed. It is paramount that the Geological and Mining Department should not lease these trout streams for mining without consulting the concerned Department of Fisheries. There are many dry patches of rivers that can be used for mining so that the trout streams could be spared.

The concerned authorities need to act now, and decisively to prevent the present fish species in Kashmiri streams from rapidly declining. Illegal mining should be prohibited, and areas that are frequently inhabited by breeds like the vulnerable *Schizothorax* must be identified as extremely sensitive to mining/human activities. These zones should also be monitored for the maintenance of water quality parameters so that fish species have enough time to expand. To give fish species a chance of recovery, fishing should be restricted to 3–4 days per week. The same recommendation should be conveyed to the other concerned authorities for implementation.

Mass awareness with the involvement of the local people can go a long way for the restoration and preservation of aquatic habitats. Priority should be given to raising awareness of the impact of fish decline on humans as it has remained the cheap source of proteins for the middle and poorer classes.

There are more reasons that are impacting the trout streams e.g. the sewage draining from the houses goes directly into these streams, contaminating the water and habitation in it. Similarly, the use of biocides (pesticides, insecticides, herbicides, fungicides, etc.) and other

chemicals in horticulture and agriculture are finding their way into water resources thus polluting them and as a result, impacting the aquatic biota, particularly fish. The government has already framed policies for liquid waste management and guidelines for using pesticides. The policies need to be implemented effectively and guidelines should be followed strictly around the trout streams across Jammu and Kashmir.

### **Conclusion**

The fishing industry of Jammu and Kashmir is already facing grave challenges of climate change and pollution and leasing the trout-fishing rivers/streams for mineral extraction is like hammering the final nail in the coffin. The renowned Kashmiri fish will soon disappear from the valley if the unlawful excavation, which has an adverse effect on the ability of fish to reproduce, of sand and rocks from the trout-filled streams/rivers continues. The government needs to improve the policies with regard to sustainable fishing and adopt a more ecological approach to mining to make it less damaging to the important aquatic habitat.



# Will Hygam wetland be lost to encroachment or is rescue around the corner?



**Adeela Hameed**

Last year's theme for World Wetlands Day, celebrated on February 2nd of every year, was 'Wetlands Action for People and Nature', highlighting the importance of actions that will ensure wetlands are conserved and sustainably used. This year, it is 'Wetlands Restoration'. An ardent appeal to invest in financial, human, and political capital to save surviving wetlands from

disappearing and being degraded.

Wetlands in Kashmir have suffered long-term damage because of human encroachments. The valley has almost lost Anchar, Hokersar, Gilsar, and Khushal Sar. The Dal Lake and Wular Lake are in the process of being converted to agricultural land. At this critical time, Hygam wetland has been fortunately declared a Ramsar site, a site of international importance, and now it is the responsibility of everyone involved to rescue one of the only remaining wetlands in Kashmir.

## **Hygam wetland – A Ramsar site**

Ramsar is an inter-governmental treaty formulated in 1971. The Ramsar Site framework helps in the better conservation of wetlands on an international scale.

Spread over 801.82 hectares, the Hygam wetland was declared a Ramsar site, in August 2022, along with the Shalabugh wetland. Hygam is an important part of Jhelum floodplains, and one of the associated wetlands of Wular. Bala Nallah flowing from Baba Reshi is the main source of silt and nutrients for Hygam. It is one of the abodes for lakhs of migratory birds, like shovelers, white geese, red-crested pochards, white-eyed pochards, and common teal coots that arrive in the valley for winters from their breeding grounds in North China, Siberia, Philippines, and North Europe. It also supports mammals, fish, and amphibians. The locals used to fish as well as harvest lotus roots and water chestnuts yet now, it is devoid of such resources.

Over 2372 kanal (120 hectares) of



wetland were lost in J&K between 2006-07 and 2017-18. This is according to a report compiled by the Ministry of Statistics and Programme Implementation (MOSPI). The total number of wetlands decreased from 404 in 2006-07 to 403 in 2017-18, i.e. a decrease of one wetland in a decade. The total area of wetlands reduced from 1,64,230 hectares in 2006-07 to 1,64,110 hectares in 2017-18. Some of the main factors responsible are excessive habitat destruction, pollution, and human interference.

### **Encroachments have marred the landscape of this once-pristine wetland**

The Hygam Wetland Reserve is spread over an area of around 800 hectares but in villages like Hygam, Gohul, Lolpora, Tengpora, Haritar, and Goshbug encroachments have been seen.

Failure to take sustained measures for the conservation of Hygam is taking a toll on its fragile ecosystem. It has led to a decrease in the migratory bird population to the wetland. In the absence of proper regulations, dead logs, and fallen trees have stopped the movement of water from catchment areas surrounding the wetland. In addition, the wetland area has been extensively encroached upon by nearby residents. A few apple orchards, cattle sheds, and bathrooms have also been established in the Hygam wetland area around its north-western shore. Impeding the water supply by creating embankments to prevent flooding near their houses, locals have now resorted to cultivating paddy in the wetland area. Most of the wetland has dried up with little to no water polluted with floating solid waste debris, plastic bottles, and tetra packs.

### **Actions for sustaining life in, and of, the wetland have to be taken now**

Hygam is a very important wetland, considered at par with Hokersar. It needs to be conserved to maintain environmental balance and biodiversity in the area. Citing Kashmir's geo-morphic setup, experts have declared that in view of its flat topography, Kashmir is highly vulnerable to flooding. But most wetlands, that acted as reservoirs of flood waters, have lost their carrying capacity due to haphazard urbanization and encroachments.

In September 2022, the High Court sought a report on the status and present position of wetlands included in the Ramsar Site in J&K. It had also directed the Union Ministry of Environment to submit the Action Taken Report (ATR) on the issue.

### **Central Auqaf Committee Tarzoo**

The Central Auqaf Committee Tarzoo is the first-of-its-kind religious organization in Kashmir concerned about environmental conservation and sustainable development. The committee, during the last 3 years, has organized almost a dozen workshops and conferences on wetland conservation. They had also filed a petition in the J&K High Court on unscientific garbage disposal near the Ninglee wetland area. The High Court had rendered a landmark judgment and the then Chief Justice, Geeta Mittal, had personally visited the site for the survey. The illegal work was later on stopped.

### **Recommendations**

The State Wetlands Authority constituted under the Wetland Conservation and

Management Rules 2017, shoulders the important responsibility to save and conserve Hygam.

The Wildlife Department should prepare an Integrated Management Plan (IMP) under the National Plan for Conservation of Aquatic Ecosystems (NCPA) and submit it to the MoEFCC. Funds provided under NCPA can be used for the restoration and rejuvenation of Hygam.

A team to look into encroachments and to start fresh demarcation in the area should be constituted. Illegal apple orchards should be taken care of, and persons involved in encroachments should be held responsible.

Restoration of water flow into Hygam is an important issue as illegally constructed houses have come up in its vicinity, starving huge tracts of the wetland from its lifeline.

Deep dredging, using JCBs, should be avoided as it prevents birds from getting nutrition. Manual de-weeding should be done instead.

Information Education Communication Programmes should be held in Hygam and its surrounding villages with help from NGOs, academicians, and technical personnel so that religious leaders and students are sensitized about wetland protection.

The government should shed light on why the migratory bird population has declined to a great extent.

### **The rescue of Hygam wetland**

Hygam has been given a new lease on life; by the construction of peripheral bunds, installation of boundary pillars and panels, plugging of breaches, and creation of boat-ways. A report said the

Wildlife Warden, Wetlands Division, Kashmir stated that the department formulated a comprehensive Integrated Management Action Plan (2022-27) for Wetland Conservation Reserves, including Hygam. This plan had been strictly formulated according to the guidelines issued by the Ministry of Environment, Forest and Climate Change.

The survey and digital delineation of Hygam Wetland Conservation Reserve were completed together with the Revenue Department and Forest Demarcation Division. Bunds, like Cross Bund and Gohal Tengpora Bund, which resulted in the fragmentation of the wetland, were demolished in 2020-21, thereby, retrieving 2400 kanal of land from encroachers.

Over 145 panels were installed around the periphery of the wetland in 2021. The department stated that restoration work like the creation of boat ways, pools, and plugging of breaches is being carried out regularly, even now.

Water quality monitoring results revealed that water quality conforms to Category B of primary water quality criteria which, as per CPCB guidelines, is within the prescribed permissible norms.

The department also maintained that the division regularly conducts anti-plastic drives, in and around Hygam, by involving NGOs, local schools, and other stakeholders.

On migratory birds and biodiversity, the department refuted reports of deteriorating conditions and the decline of bird species in Hygam. They opined that the Asia Water Bird Census revealed that bird species that were previously recorded within the wetland have been reported there presently as well.

# Plastic: A threat to environmental sustainability and human well-being



**Zahoor Ahmad Dar**

**T**echnically sophisticated, cheap, and lightweight, plastic is one of the world's most-used materials. Roland Barthes, a French intellectual in his 1957 book *Mythologies* quotes about plastics: "So, more than a substance, plastic is the very idea of its infinite."

He also made the prophecy, "The hierarchy of substances is abolished, and a single one replaces them all – the whole world can be plasticized and even life itself since, we are told, they are

beginning to make plastic aortas."

The world has changed dramatically in the past century. The amount of plastic use has grown exponentially. The current problem with plastic is not how it is used, which is fairly safe, but rather how products made from it are managed at the end of their useful lives.

## **Plastic consumption in Kashmir**

Due to their low cost, versatility, durability, and high strength-to-weight ratio, plastics have become an integral and cardinal part of the global economy. Every year, between 500 billion and 1 trillion plastic bags are used around the world. Every minute, almost a million plastic bags are used! In India, over the last 30 years, the amount of plastic used has steadily increased, reaching over 300 million metric tonnes in 2017. The Plastics Processing Industry has significantly



grown at a Compound Annual Growth Rate (CAGR) of 10 % in volume terms from 8.3 MMTPA in FY-10 to 13.4 Million Metric Tonne Per Annum (MMTPA) in FY-15. As per Central Pollution Control Board, India's plastic consumption has risen from 61,000 tons in 1996 to 85,000 tons in 2007 to 1, 78, 00,000 tons in 2017. According to Plastic Association Membership in India (AIPMA), Plast India, and TATA strategic analysis, India's plastic consumption is a tenth of the US.

Reports suggest that human plastic consumption is expected to triple by 2025. This clearly indicates that only recycling can offer a viable and domestic option to meet the country's growing material demand.

Plastic bags have made significant inroads into rural Kashmir, like the rest of India. The growing population directly adds to the strain on local resources, putting additional strain on the environment. Changes in consumption patterns are also having a significant impact on the environment. One of the major reasons for the Union Territory's widespread use of plastic bags is its thriving retail sector (supermarkets, grocery stores, and weekly haats). The UT is dealing with not only agricultural and industrial waste but also household hazardous and non-hazardous waste, as a result of rising population and consumerism. Jammu and Kashmir's poor waste management system has exacerbated the problem of plastic waste disposal.

Failure of State action in the reduction of

plastic waste

The use of plastic bags is prohibited by law in Jammu and Kashmir. The erstwhile state passed the Non-Biodegradable Material (Management, Handling, and Disposal) Act in 2007, which was used several times to impose a partial ban on plastic carry bags by prohibiting the use of bags thinner than 50 microns. Jammu and Kashmir banned the manufacture, stocking, distribution, sale, and use of polythene bags, regardless of thickness, in January 2018. Finally, the then state government banned single-use plastic items such as disposable plates, cups, bowls, tumblers, spoons, forks, and knives in March 2019.

According to the monthly progress report for January 2021, treatments/ measures taken to reduce or control plastic waste include:

- a) The Anti-Polythene Squad seizes illicit polythene and bans SUP on a regular basis;
- b) The seized polythene is used to overlay roadways;
- c) Using seized polythene alongside traditional fuels in cement kilns.

Despite the legislation, the amount of plastic waste generated is too great to be treated in comparison to the recycling infrastructure available in most cities. Plastic waste generation in J&K (2018-19) is depicted in Table 1.

**Table 1: Plastic waste generation in the state (2018-19)**

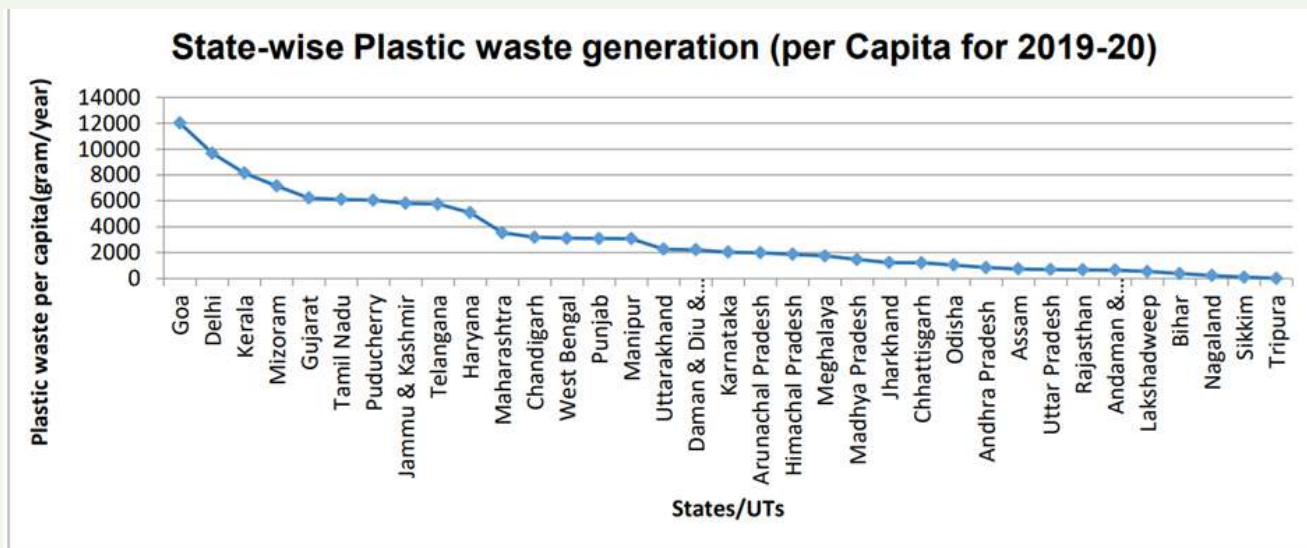
|         | Recyclable | Non-recyclable | Total MT/year |
|---------|------------|----------------|---------------|
| Jammu   | 1964.7     | 4584.54        | 6549.33       |
| Kashmir | 11581.45   | 4964           | 16545.45      |
| Total   | 13546.24   | 9548.54        | 23094.78      |



Source: Action plan on Plastic Waste Management (Jammu and Kashmir) accessed through <http://diragriju.nic.in/Plastic%20Waste%20Management%20reduced.pdf>

According to Annual Report 2019-20 on Implementation of Plastic Waste Management Rules, Jammu and Kashmir ranks eighth among all the states and union territories in India in terms of plastic waste per capita generation. The estimated plastic waste generation in UT has substantially increased from 34367.37 T/annum (2018-19) to 74826.33 T/annum. According to the Jammu and Kashmir monthly progress report for January 2021, the monthly average of plastic waste generation in J&K is 6200 MT (app). Figure 1 depicts the per capita waste generation by the state for the fiscal year 2019-20.

**Figure 1: State/UT-wise plastic waste generation (per capita for 2019-20)**



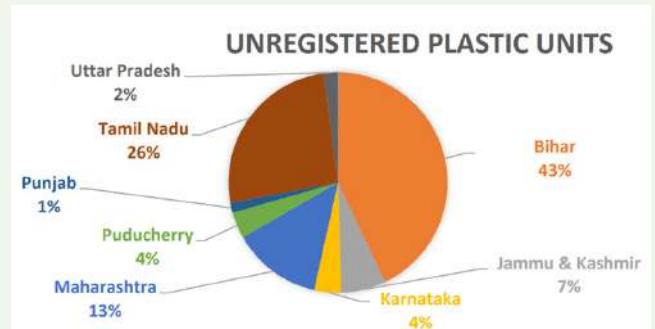
**Fig.3: Per capita State/UT wise Plastic waste generation**

Source: Annual report 2019-20 accessed through [https://cpcb.nic.in/uploads/plasticwaste/Annual\\_Report\\_2019-20\\_PWM.pdf](https://cpcb.nic.in/uploads/plasticwaste/Annual_Report_2019-20_PWM.pdf)

There were 72 unregistered units in the state as per the annual report

2018-19. Assam, Bihar, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Puducherry, Punjab, Tamil Nadu, and Uttar Pradesh have 1080 unregistered plastic manufacturing/recycling units. Figure 2 shows the state/UT-wise unregistered units.

**Figure 2: State/UT-wise unregistered units**



Source: Annual Report 2018-19 accessed through [https://cpcb.nic.in/uploads/plasticwaste/Annual\\_Report\\_2018-19\\_PWM.pdf](https://cpcb.nic.in/uploads/plasticwaste/Annual_Report_2018-19_PWM.pdf)

It is quite unfortunate to see that recycling rates in India are far below the international standards, with 27 percent for packaging paper, 60 percent for plastics, and 20-25 percent for metals. The average recycling rate in Scandinavian countries

has reached 90%. As per the estimates by Central Pollution Control Board (for 2017-18) 26,000 tons per day of plastic waste is generated in India. Out of which only 15,600-ton plastic waste is recycled which means 9,400 tons per day of waste is uncollected, littered, and unprocessed.

### A way forward:

Environmentally sensitive areas, such as Kashmir, require immediate solutions to the plastic waste problem. Finding alternatives to plastic products has become more important than ever before in the fight against climate change. Plastic is a high-carbon petroleum product whose production and transportation require numerous energy inputs, resulting in massive greenhouse gas emissions.

According to research, landfilling is the most efficient method of disposal if done correctly. Waste should be collected three times per week and disposed of in a scientific manner. Also, a detailed feasibility study on alternatives should be conducted, with the best types designated for mass production and distribution.

Plastic bags continue to enter the Union Territory from states where there is no ban. Stricter monitoring of inter-state movement will be extremely effective in reducing usage. The region's tourism industry depends on the stunning

landscape of lakes and mountain resorts, which is now under constant threat from poor waste management practices. Plastic waste is a major hazard to marine ecosystems. Every year, eight million tonnes of plastic debris reach the ocean. The total amount of plastic in the ocean is 150 million tonnes. In 2014, there was 1kg of plastic in the ocean for every 5 kg of fish, and it is estimated that by 2050, there will be more plastic than fish. Untreated wastewater, according to a scholar, has ruined the Dal lake more than anything else. According to numerous studies, 1,200 houseboats alone discharge over 9,000 metric tonnes of garbage into the lake each year. The lake receives 18.2 tonnes of phosphorus and 25 tonnes of inorganic nitrogen fertilizers from 15 major drains. Every year, roughly 80,000 tonnes of silt are deposited in the lake, in addition to nitrates and phosphates. Due to increased turbidity, the color of the lake's water has changed from bluish-green to hazel, reducing the lake's visual attractiveness and resulting in fewer tourist visits. The water is unsafe to drink, and aquatic life is endangered due to dissolved oxygen depletion.

**Table 2: Amount of macroplastic recorded at the peripheries of the Dal Lake (in terms of percentage by weight)**

**Table 3 The percent by weight of macroplastic recorded at the peripheries of the Dal lake**

| S. No. | Plastic type (year 2019)   | Percentage by weight |
|--------|--|----------------------|
| 1      | Plastic bottles  | 40%                  |
| 2      | Plastic bags (coloured)  | 24%                  |
| 3      | Plastic wrappers   | 6%                   |
| 4      | Miscellaneous (all plastic material mix which cannot be segregated)                    | 4%                   |
| 5      | Foam plastics (plates, cups, glasses, etc)   | 8%                   |
| 6      | Transparent plastic bags   | 4%                   |
| 7      | Broken plastic buckets, plastic flooring, plastic strings, other plastic utensils, etc | 4%                   |
| 8      | Plastic unknown (debris)   | 10%                  |

Source: Action plan on Plastic Waste Management (Jammu and Kashmir) accessed through <http://diragriju.nic.in/Plastic%20Waste%20Management%20reduced.pdf>

Plastic bags and containers have steadily replaced the traditional 'Kranjul' wicker baskets used by Kashmiri women to transport vegetables. Plastic's spread over the years has thrown a gauntlet to Kashmir's once-thriving wicker handicrafts industry. Plastics can be phased out by promoting local traditional products, which can help restore the Kashmir landscape while also providing additional livelihood options in the state. At a time when the fate of environmental sustainability is at crossroads, the government needs to incentivize the people who make cloth bags and wicker baskets. In Jammu and Kashmir –

where thousands of weavers, potters, and women skilled in sewing cloth bags exist in every district – accessibility to alternatives is not that difficult.

### **Conclusion**

The environmental externality of solid waste related to plastic bag consumption is a classic tragedy of commons. Individual consumers gain from the use of plastic bags because they are convenient, but society as a whole bears the collective cost of their disposal. The environmental degradation experienced across Kashmir today underlines the need for a paradigm shift from the depletive 'produce-consume-dispose' led linear economy to a circular economy led by 'reduce-recover-reuse-recycle-redesign-remanufacture'.

# Rare and elusive duck species visit Kashmir after 116 years. But why?



**Parvaiz Yousuf**

**K**ashmir is known for its beauty as well as the diversity of wild birds and animals across the globe. One of the beautiful and known places is Wular lake (a Ramsar site) which is one of the largest freshwater lakes in Asia & located at Haramuk Mountain's base. Its length is over 24 km, and its width is 10 km, for a total area of 200 sq km. It is located close to Baramula Road, between Sopore and Bandipora, and the river Jhelum is the

primary supply of water for Wular Lake. Moreover, a tiny island known as the "Zaina Lank" may be found in the middle of this lake. During his reign, King Zainul-Abi-Din built this artificial island. It has been hypothesized that the present-day Wular Lake is all that's left over from the much larger ancient Satisar Lake. This lake and its surrounding area are popular gathering places for local, national and international tourists.

However, what surprised the local people and bird-watching community this time was the presence of a new duck species. On 22 January 2023, rare duck species were spotted at the iconic Wular lake, which were later identified as Long-tailed ducks (globally vulnerable) and were five in number. These duck species were spotted in Kashmir after 84 years, and the last time they were sighted in Hokersar was in 1939 by F Ludlow. The ducks were first reported and captured



on camera by a Wular Conservation and Management Authority (WUCMA) employee Mr Showkat Ahmad, and later the news spread among local birders and ornithologists like fire.

Only after 3 days, another rare duck species called smew was spotted and captured on camera. This time, a single female smew was first spotted by Bilal Nasir Zargar (Director, Wildlife Conservation Fund, YPK), Umer Nazir, Sheikh Harris, Irfan UI Shamas, and Showkat Ahmad, followed by Ansar Ahmad. To the ornithologists' surprise, these duck species have been spotted in Kashmir after a huge period of 116 years. This means the last record of this species in Kashmir was in 1907. Before discussing why such rare bird species have started visiting Kashmir valley again after so much time, let's discuss the biology of these duck species. Apart from this, other rare bird species, such as common shelduck, ruddy shelduck, white-tailed eagle, imperial eagle, tufted duck, Northern lapwing, etc., can be seen in Wular Lake.

### **Long-Tailed Duck**

Long-tailed ducks (*Clangula hyemalis*) occur all the way around the Arctic and Antarctic. Its breeding grounds in North America span the Canadian tundra and the Arctic coastline from Alaska to Greenland. On surrounding offshore islands and coastal tundras, long-tailed ducks frequently nest in large colonies. On the whole, long-tailed females produce 7 eggs per clutch.

Moreover, the Long-tailed ducks are slim, colourful sea ducks with long tails. They fly quickly and low, often forming and reforming tight clusters. The long-tailed duck goes through an intricate

change of plumage. In the winter, a male long-tailed duck's head, neck, and upper breast are white, while the cheek is patched with grey, and the lower cheek is largely black. Its head is black outside of the breeding season but develops a white or grey patch across its cheek and eye. The female's head and body are brown and have a white eye patch and a white patch under the tail. The long centre tail feathers of the males are always black and present in all long-tailed duck plumages. They have a yodelling call that can be heard throughout both coastal and tundra habitats.

Furthermore, the long-tailed duck is a good diver whose preferred food consists of marine invertebrates like crabs & molluscs. Breeding populations of long-tailed ducks can be found across much of the Arctic Coastlands and northern Canadian Tundra. In the northern United States, they prefer to spend the winter near major bodies of water like the Great Lakes and the Atlantic and Pacific coasts. Due to their widespread Arctic breeding habitat and very inaccessible location, it is challenging to conduct a reliable population estimate of this species. Over the past two decades, their population size has generally shrunk.

Long-tailed ducks migrate all the way to British Columbia on their way west from Alaska and Russia. The ones raised in the east eventually make their way to the Great Lakes, the Chesapeake Bay, and the southern coast of Greenland. They migrate as far north as the oceans are free of ice during the winter. The western population spends the winter at sea near the Alaska Peninsula and the Aleutian Islands, with only infrequent sightings off the coasts of British Columbia, Washington, and Oregon.

### **Smew**

Smews (*Mergellus albellus*) are medium-sized ducks that are part of the Anatidae family. The smew is a species found in both Eurasia and Europe. They rarely visit the different parts of the Indian subcontinent.

Male smews tend to be larger than females, but both sexes are roughly the same size. The adult male smew is 35–45 centimetres long and weighs 550–950 grams. It's estimated that females weigh between 500 and 650 grams. Similarly, between 55 and 70 centimetres is the size of its wingspan. With a black-and-white pattern in flight, this smew species is easily recognizable. Moreover, females have a chestnut-coloured forehead and hairline, and hooks and serrations are present at the bill's extremity.

As far as the habitat is concerned, freshwater lakes, reservoirs, flooded woodlands, ice-free rivers, protected bays, estuaries, lagoons, and tidal creeks are all common habitats for smew. Smew species dive into the water to get their prey which includes aquatic vegetation, insects, crabs, molluscs, worms, frogs, and fish. These birds mate during April each year and live with a single partner during a season. Moreover, they use tree cavities as nesting sites, and the female smew lays 6-9 eggs of a creamy tint.

Moreover, Northern Europe and Asia are home to breeding populations of smew. They spend the colder months in the protected coastal areas and inland lakes of the East Asian countries of East China, Korea, and Japan; the Baltic and Black Seas; Great Britain; the Caspian Sea; and the Japanese islands.

Smews are among the most migratory birds, with arrivals at breeding grounds beginning in April. During the first week of September, they begin to move to the breeding areas en route to

their wintering sites.

According to conservative estimates, there are about 130,000 of these birds in the world. There are a lot of territories for these species, and they aren't very susceptible. The greatest dangers to these migratory birds are human activity (such as hunting) and the degradation of their habitat. These smew species have been classified and appraised by the International Union for the Conservation of Nature (IUCN), which has given them a "Least Concern" status.

### **What Attracts Them to Wular Lake Now?**

Wular lake has changed considerably during the last few years. Facing the serious problems of willow infestation and silt, some serious approach was needed. This is why the removal of willows and the excavation of silt is being continuously carried out in the Wular lake. It is believed that out of a total of 27 square kilometres, only 4.5 square kilometres have been restored.

Furthermore, the UT government approved a Rs 200-crore Wular Action Plan for the lake's preservation and management in 2018. Around 1 lakh willows have been removed from the lake so far, earning the government Rs 24 crore in cash throughout the restoration process. This removal of trees and dredging has increased the capacity of the lake. Moreover, Anti-Poaching Units (APUs) have been kept in place to ensure no poaching. These units have seized large punt guns from time to time and saved a lot of birds. Thus, these factors may be critical to why these duck species visited Wular lake after so many years.

However, we cannot rule out the possibility of these ducks visiting our wetlands in the past years, but they may not have been spotted earlier. The 2020 “Balcony birding concept” has significantly increased the number of birders observing such bird species. Upon getting restricted to their local areas in 2020 due to covid 19, a large number of birders started birding around their places. This also contributes to increased sightings of other rare bird species. However, the work done by WUCMA, such as carrying out the first-ever water bird census of Wular lake last year, raising awareness, involving local people in conservation efforts, and inviting birders from different parts of the valley for expeditions, has certainly offered good results.

### **The Ongoing Problem**

Although WUCMA is trying its best to conserve the area and its species, the area so big to manage even for a larger force, and tens of villages are either directly or indirectly dependent on Wular Lake for their livelihood. The Wular Lake generates a good source of income for the UT government as well as people through fisheries, the sale of fodder, water chestnuts, and other economically

important products. So, no one can actually stop them from visiting the lake, which is also a problem from the conservation point of view. Although a majority of people support conservation efforts, some still do not understand the importance of conservation. This threatens the existence of all migratory bird species (including long-tailed ducks and smew) in Wular Lake. From time to time, the birds get stuck in fishing nets and die. So, proper cooperation from local people is immensely needed for the protection of Wular Lake.

### **Conclusion**

Wular Lake is a big natural resource that supports a huge number of people residing around it. So, it is vital for all of us to come together and participate in its conservation. Bear in mind that the efforts of government organizations are not sufficient until we, as local residents, join hands with them for implementing a number of conservation measures. These organizations should always support other local non-governmental organizations and develop better cooperation. So, it is the responsibility of all of us to nurture the Wular Lake as the Lake nurtures us.





# ART IN LIFE FOUNDATION

An initiative towards sustainability and equality

Art in Life Foundation (AILF), is a registered organization having a major thrust on Environment, Education, Economy, Health, Women's Empowerment and Rights, Art, and Community Development Work.

The organization also aims to recognize the importance of contemplative engagement with young people and critical thinking for young people.

In pursuance of this goal, a group of media professionals and development specialists, with rich experience in reputed national and international organizations, joined hands and registered the Art in Life Foundation (AILF).

AILF aims to build a countrywide network of professionals and intends to collaborate with organizations, students, artists, academicians, theorists, thinkers, musicians, artists, and also social engineers to achieve its goal of finding solutions through creativity.



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[artinlifefoundation.org](http://artinlifefoundation.org)



[ailfofficial2023@gmail.com](mailto:ailfofficial2023@gmail.com)



[ailfofficial](#)



[ailfofficial](#)



[ailfofficial](#)



[ailfofficial](#)



+91 7889449487 +91 7006515945



Tulsi Bagh, Srinagar - J&K

**CONTRIBUTORS: PARVAIZ YOUSUF, ADEELA HAMEED, MUKHTAR DAR, AND ZAHOOR AHMAD DAR | SUPERVISION: JAVAID TRALI | EDITOR: AKEEL RASHID | DESIGN: TANVEER LONE**

Website: [www.jkpi.org](http://www.jkpi.org) | Sector 5, Bemina, Srinagar, Jammu and Kashmir, India, 190018