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# VIGYAN সঞ্চার

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14 March | International Day of Action for Rivers  
**Endeavoring to Restore the Rivers**

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## NOTE FROM THE EDITOR

# *Oh River, Where art thou?*

**Debashis Pratim Sarma**

This evoking quote implies rivers possess a profound, almost mystical wisdom, and they communicate this insight to humans through subtle and spiritual means. In this philosophical discourse, a correlation is drawn between nature and the way humans comprehend the world. The river has been a muse for countless poems, songs, hymns, and stories, all trying to grasp the intricate communication and powerful bond between humans and the natural world. Now, envision a world where the rivers, once a source of wisdom and serenity, become nothing more than stagnant, contaminated remnants. How much longer until this becomes a reality?

Rivers are often called the Earth's artery system, meandering through terrains and connecting diverse ecosystems. Human civilizations flourished in proximity to rivers, and even today, rivers are vital for the sustenance of life on Earth. From drinking water to facilitating agricultural and industrial activities, rivers play a crucial role for us. In addition, rivers support a vibrant ecosystem of aquatic species, fostering biodiversity and ensuring ecological stability. March 14th marks the annual celebration of the International Day of Action for Rivers, a day dedicated to recognizing and appreciating the importance of rivers. The celebration aims to foster unity among individuals in safeguarding our rivers, guaranteeing universal access to clean water and the right to engage in water-related decision-making and livelihoods. This year's theme, "water for all," underscores the need for equal access to clean water and community participation in discussions regarding water rights. Sustainable Development Goal 6, "Clean Water and Sanitation," also highlights this significance of ensuring safe water. It states that clean water is crucial for improving health, reducing poverty, ensuring food security, promoting peace, protecting human rights, preserving ecosystems, and facilitating education.

At present, we rely heavily on large-scale industries and activities that directly contribute to pollution. No matter the industry, waste is a byproduct that invariably ends up harming the environment. Numerous regulations and proactive measures are being put into place to address and mitigate this issue. However, the ultimate responsibility lies with us to proactively reduce waste and select reusable alternatives, thereby fostering a more sustainable future. And yet here we are, knifing at the planet's artery, oblivious (or not) to the impending consequences! Never forget, we are not destroying the planet; we are only destroying us. Just like it has done in the past, the planet will recover and heal. But we will not be here to witness it. It would be rather paradoxical that "Homo Sapiens" (the Latin term for "wise human") would make such unwise decisions; wouldn't you agree?

**"The river has great wisdom and whispers its secrets to the hearts of men."**





## যান-বাহন, বিদ্যুৎ পরিবাহী তাঁবে আনিছে বিপদঃ সংকটত কাকেজানাৰ সোণালী বাল্দৰ

ঘিংকুমণি পাঠক

পৃথিবীৰ বিপন্ন প্ৰাণীসমূহৰ ভিতৰত অন্যতম  
সোণালী বাল্দৰ (TRACHYPITHECUS  
GEEI)। ১৯৫৫ চনত এডৱাৰ্ড প্ৰিটচাৰ্ডগীয়ে  
এইবিধি বাল্দৰৰ অস্তিত্বৰ সন্ধান বিশ্ববাসীক  
দিয়ে। পশ্চিম অসম আৰু ভূটানৰ সীমিত  
অঞ্চলক বাসস্থান হিচাপে গ্ৰহণ কৰি এই  
আপুৰুগীয়া প্ৰাণীবিধিৰ অস্তিত্ব জীয়াই  
আছে। ইয়াৰে বঙাইগাঁও জিলাৰ কাকেজানা  
সংৰক্ষিত বনাঞ্চলে সোণালী বাল্দৰৰ  
আবাসভূমি হিচাপে পৰিৱেশকৰ্মী আৰু  
সচেতন ৰাইজৰ দৃষ্টি আকৰ্ষণ কৰিছে।  
মূলতঃ কাকেজানা সংৰক্ষিত বনাঞ্চলৰ  
দাঁতিকাৰীয়া গাঁওসমূহৰ ৰাইজে সোণালী

বাল্দৰ সংৰক্ষণৰ প্ৰতি দেখুওৱা সজাগতা  
অনন্য আদৰ্শ হিচাপে পৰিগণিত হৈছে।

প্ৰায় ১৭ বৰ্গ কিলোমিটাৰজোৰা এই  
বনাঞ্চলখনৰ কেউদিশে থকা গাঁৱৰ ৰাইজে  
সোণালী বাল্দৰক বৰ্ক্ষাৰ ক্ষেত্ৰত সচেতনতা  
প্ৰদৰ্শন কৰি আহিছে। কাকেজানাত ১৯৯৮  
চনত ‘COMMUNITY CONSERVATION’  
আৰু ‘NATURE’S FOSTER’ নামৰ  
এনজিআ’ দুটাই আৰম্ভ কৰিছিল GOLDEN  
LANGUR CONSERVATION PROJECT  
(GLCP)।



এই প্রকল্পৰ জৰিয়তে স্থানীয় লোকক সোণালী বালৰৰ সংৰক্ষণত জড়িত কৰা হৈছিল। ৰাইজৰ সহযোগত ২০১৫ চনত কাকৈজানাত সোণালী বালৰৰ সংখ্যা ৫০০লৈ বৃদ্ধি পোৱা বুলি দ্যা হিন্দু কাকতৰ এক বাতৰিত উল্লেখ পোৱা যায়। কিন্তু দ্রুতহাৰত হোৱা নিৰবনীকৰণৰ ফলত সোণালী বালৰসমূহে কাকৈজানা সংৰক্ষিত বনাঞ্চলত খাদ্যৰ অভাৱত ভোগা বুলি স্থানীয় ৰাইজে অভিযোগ উৎখাপন কৰি আহিছে। যাৰ ফলত খাদ্যৰ সন্ধানত বনাঞ্চলৰ পৰা জনাঞ্চললৈ ওলাই অহা বালৰসমূহে প্ৰায়েই দুৰ্ঘটনাত মৃত্যুক আঁকোৱালি ল'বলগীয়া হয়।

মূলতঃ বনাঞ্চলখনৰ কাষেৰে যোৱা ১৭ নং ৰাষ্ট্ৰীয় ঘাইপথ পাৰ হ'বলৈ গৈ সঘনে গাড়ীৰ খুল্দাত এই দুষ্প্ৰাপ্য সোণালী বালৰৰ মৃত্যু হয়। স্থানীয় ৰাইজে সংশ্লিষ্ট কৰ্তৃপক্ষক এই পথছোৱাত যান-বাহনৰ গতি নিয়ন্ত্ৰণ কৰিবলৈ কঠোৰ ব্যৱস্থা গ্ৰহণ কৰিবলৈ দাবী জনাই আহিছে। বিশেষকৈ চাৰিলেন্দুক রাষ্ট্ৰীয় ঘাইপথ সম্প্ৰসাৰণৰ নামত পথৰ কাৰৰ বহু গচ-গছনি কাটিবলগীয়া হোৱাত সোণালী বালৰসমূহ সহজে মৃত্যুমুখত পৰা বুলি বিভিন্নজনে মতপোৰণ কৰে।

পথ দুৰ্ঘটনাৰ উপৰি বিদ্যুৎস্পৃষ্ট হৈও বহুকেইটা সোণালী বালৰৰ মৃত্যু হৈছে। বিদ্যুৎ পৰিবাহী তাঁৰৰ সংস্পৰ্শত আহি সোণালী বালৰৰ মৃত্যু হোৱাটো চিন্তাৰ কাৰণ হিচাপে বিবেচিত হৈছে। বিগত ফেব্ৰুৱাৰী মাহত গাড়ীৰ খুল্দাত মৃত্যু হোৱা এটা সোণালী বালৰক কণমানি পোৱালিটিয়ে জগাবলৈ চেষ্টা কৰা হৃদয়বিদাৰক দৃশ্যই সচেতন লোকসকলৰ মন-মগজু জোকাৰি গৈছিল। এই কৰণ দৃশ্যই দেশৰ লগতে বিদেশৰ সংবাদ মাধ্যমতো খলকনিৰ সৃষ্টি কৰিছিল। কিন্তু তাৰ পাছতো কেইবাটাও সোণালী বালৰে মৃত্যুক আঁকোৱালি ল'বলগীয়া হৈছে। যোৱা ২৫ ডিচেম্বৰৰ দিনাও ১৭ নং ৰাষ্ট্ৰীয় ঘাইপথত চাৰিচকীয়া বাহনৰ খুল্দাত কাকৈজানা সংৰক্ষিত বনাঞ্চলৰ পৰা ওলাই অহা এটা গৰ্ভৱতী সোণালী বালৰ মৃত্যু হয়। এনেদেৰে গাড়ীৰ খুল্দা, বিদ্যুৎস্পৃষ্ট হৈ মৃত্যু হৈ থাকিলে এদিন হয়তো কাকৈজানা সংৰক্ষিত বনাঞ্চলতো অস্তিত্বৰ সংকটত ভুগিব দুষ্প্ৰাপ্য সোণালী বালৰো।

# *Seeing the* WORLD *through a* DIFFERENT *lens.*



**Amos Bortiew**

Yuri Gagarin, the famed cosmonaut, famously stated that he noticed how lovely the Earth is while orbiting it in his spaceship. He underlined the importance of preserving the Earth and its beauty because it is the only body capable of maintaining life. Someone once remarked that the best way to determine the worth of a home is to leave it. Although many of us may not be able to literally fly off from the planet to see and experience what Yuri feels, there is a method for us to obtain a similar view of the earth, and that is through the eyes of a satellite.

There are several satellites orbiting the Earth, each created with a unique technology to serve a distinct purpose. Some are communications satellites, such as SpaceX's Starlink satellites, while others are navigation satellites, such as Navigation with Indian Constellation (NavIC), and still others are earth observation/remote sensing satellites, such as Landsat 8 or Sentinel 2. But for the purposes of this article, let us focus solely on remote sensing satellites and discover what makes them so unique.

Remote sensing satellites serve as the eyes in the sky, capturing mesmerizing images of our planet from vantage points that humans

can't reach. These technological marvels orbit the Earth, equipped with advanced sensors that detect and record data across the electromagnetic spectrum. From infrared to visible light and beyond, these satellites unveil the Earth's beauty in ways that transcend the limitations of our naked eye. One of the most captivating ways these satellites enhance our appreciation for Earth's beauty is through the creation of stunning imagery. They capture the intricate patterns of landscapes, the vibrant colors of forests, deserts, and oceans, and the ever-changing tapestry of weather systems. Whether it's the swirls of a hurricane seen from above or the delicate veins of a river network stretching across a continent, these images offer a unique perspective, showcasing the planet's natural artistry.

Remote sensing satellites have an unparalleled ability to reveal the Earth's beauty by highlighting its diverse features. They capture the symphony of hues in autumn foliage, the iridescent blues of coral reefs, and the breathtaking majesty of mountain ranges. By detecting different wavelengths of light, these satellites unveil details that remain hidden to the human eyes exposing the richness and complexity of our

planet's ecosystems. Moreover, these satellites provide a dynamic view of Earth's ever-changing landscapes. They document transformations over time, illustrating the impact of human activity, climate change, and natural events. Witnessing the evolution of a city skyline, the receding ice caps, or the regrowth of a forest after a fire through satellite imagery evokes a profound appreciation for both the resilience and fragility of our planet.

Beyond their aesthetic appeal, remote sensing satellites play a vital role in scientific exploration, environmental conservation, and societal development. The data they collect supports crucial research in fields like agriculture, forestry, urban planning, and disaster management. By monitoring changes in land use, vegetation health, and atmospheric conditions, these satellites provide invaluable insights that inform decision-making and policy formulation. The beauty captured by remote sensing satellites isn't merely for visual pleasure; it's a powerful tool for raising awareness about environmental issues. These images serve as visual narratives, illustrating the consequences of environmental degradation, deforestation, pollution, and climate change. They inspire action by showcasing the Earth's vulnerability and the urgent need for conservation and sustainability efforts.

In essence, remote sensing satellites are like artists painting a breathtaking portrait of our planet. They transform raw data into captivating images that inspire wonder, curiosity, and a deeper connection to the Earth. By revealing the Earth's beauty in its myriad forms, these satellites remind us of the preciousness of our planet and the collective responsibility to preserve its splendor for future generations.



# Antimicrobial Resistance

## *The Problem and the Precautions*

Ankita Rangdhali Ojah

Embracing the idea of "The sky is the limit" as a personal mantra holds the potential for significant impact. Nonetheless, it is in your best interest to comply with the controls and limits imposed by a physician for certain medications. Considering this standpoint, Antimicrobial Resistance (AMR) presents itself as a distressing medical crisis that has rapidly spread, primarily due to people's negligence. India alone possesses one of the world's highest rates of antimicrobial resistance (AMR).

According to the latest data from the "State of the World's Antibiotics Report 2021," India has one of the highest antimicrobial resistance rates in the world. Additionally, it also allocates 3.54% of its GDP to health expenditure, with a significant 62.67% attributed to out-of-pocket expenses within the total health expenditure (72.8 USD). Given the high rates of antimicrobial resistance (AMR) and significant out-of-pocket expenses among the population in India, it is expected that their impact on the projected global GDP reduction of USD 100–210 trillion by 2050 could be significant.

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### What is AMR?

Antimicrobial resistance (AMR) occurs when bacteria, viruses, fungi, and parasites no longer respond to antimicrobial medicines. Due to drug resistance, antibiotics and other antimicrobial medications lose their effectiveness, making infections challenging or impossible to treat. This has increased the risk of disease transmission, severe illness, disability, and even death. Numerous scientific studies have demonstrated that due to antimicrobial resistance (AMR), certain common pathogens, such as *E. coli*, have stopped responding to contemporary medications. AMR has made infections such as cholecystitis, urinary tract infection (UTI), traveler's diarrhea, pneumonia, and neonatal meningitis harder to treat. It has also increased the risks associated with medical procedures and treatments like surgery, Caesarean sections, and cancer chemotherapy.



Within oncology, evidence suggests that antimicrobial resistance (AMR) is adversely affecting the effective delivery of cancer treatments and increasing adverse outcomes. Research indicates that bacterial infections are a common complication in cancer patients due to both disease-related and treatment-related immunosuppression. Like humans, animals that develop antimicrobial resistance (AMR) will experience infections they wouldn't have otherwise, more treatment failures, and more severe infections.

### **What can be done at an individual level?**

**The focus of this article is on individual actions, as healthcare institutions strive to achieve their goals in antimicrobial resistance (AMR) regulation. These include:**

- Clean Your Hands**

They say prevention is better than cure; hence, keeping our hands clean is one of the best ways to prevent infections, avoid getting sick, and stop spreading germs.

- Get Vaccinated**

Vaccines are an important step in preventing infections, including resistant ones.

- Be Aware of Changes in Your Health**

Discussing with healthcare providers how to recognize signs and symptoms of infections, or what to do if one suspects an infection, is crucial. This would ensure the timely administration of antibiotics.

- Practice Healthy Habits Around Animals**

Ensuring to clean our hands after touching, feeding, or caring for animals, and maintaining the health of our animals and pets. Experts recommend scheduling regular visits and consultations with veterinarians to discuss resistance and resistance. It is important to use antifungals only when needed to prevent risks to our animals/pets.

- Prepare Food Safely**

Follow these four simple guidelines to prevent foodborne infections. Ensuring the cleanliness of our hands, cooking utensils, and kitchen spaces. Keeping raw meat separate from other foods. Ensuring that our food is cooked at the correct temperatures to guarantee safety. To maintain freshness, refrigerate leftovers and other foods as soon as possible.





# Snowpiercer

A JOURNEY THROUGH THE FROZEN  
WASTELAND OF SOCIAL INJUSTICE

Deekshya Das

Sci-fi movies, short for science fiction, transport audiences to worlds beyond our wildest imaginations, exploring the limitless possibilities of the universe and the human mind. As a genre, science fiction encompasses a wide range of themes, from futuristic technology and space exploration to dystopian societies and alternate realities. Often blending elements of speculative science with fantastical storytelling, sci-fi movies provoke thought, inspire wonder, and challenge our perceptions of reality. Whether set in the distant future, a parallel universe, or an alternate timeline, sci-fi films offer audiences a captivating escape into the unknown, inviting them to ponder the mysteries of existence and the boundless potential of human innovation.

Released in the year 2013, "Snowpiercer" is a sci-fi thriller movie that received positive reviews from both audiences and critics alike. With an overall IMDb rating of 7.1/10, the movie acclaims for its inventive storytelling, compelling performances, and thought-provoking themes. Directed by Bong Joon-ho and featuring an ensemble cast including Chris Evans, Tilda Swinton, and Song Kang-ho, "Snowpiercer" is a dystopian sci-fi masterpiece that takes viewers on a gripping and thought-provoking journey through a frozen, post-apocalyptic world.

Set in a future where a failed climate-change experiment has plunged the Earth into a new ice age, the remnants of humanity survive aboard a massive, perpetually-moving train known as the Snowpiercer. Divided into a strict class system, the train's passengers are segregated by wealth and privilege, with the elite residing in luxurious front compartments while the oppressed lower classes are confined to cramped, squalid conditions at the

rear. At its core, "Snowpiercer" is a scathing critique of social inequality and class struggle. The film's narrative unfolds as Curtis (Chris Evans), a determined lower-class passenger, leads a rebellion against the oppressive regime that governs the train. As Curtis and his fellow rebels journey from the tail section to the front of the train, encountering various obstacles and adversaries along the way, the film masterfully explores themes of power, revolution, sacrifice, and the human condition.

Throughout their harrowing journey, Curtis and his comrades uncover dark truths about the nature of their existence aboard the Snowpiercer and the sinister forces that govern their lives. As tensions escalate and alliances are tested, the rebels must confront difficult choices and sacrifices in their quest for freedom and justice.

Ultimately, the rebellion reaches a climactic confrontation in the engine room of the train, where Curtis comes face to face with the enigmatic creator and mastermind behind the Snowpiercer's eternal journey. In a shocking revelation, the true purpose and design of the train are exposed, leading to a final, cataclysmic showdown that will determine the fate of humanity aboard the Snowpiercer.

In "Snowpiercer," social inequality and class struggle are central themes, depicted through the stark division between the affluent elite at the front of the train and the impoverished lower classes at the rear. The narrative follows a rebellion led by Curtis, emphasizing power dynamics and the desire for liberation among the oppressed. Additionally, the film explores themes of environmental degradation and survival within a frozen, post-apocalyptic world. Character development plays a crucial role in conveying these themes. Curtis evolves from a reluctant leader burdened by his past into a determined figure willing to make sacrifices for the greater good. Minister Mason, representing the ruling elite, undergoes complex development, revealing vulnerabilities beneath her initial portrayal of authority. Namgoong Minsu, an engineer and addict, explores themes of redemption and personal agency, while his daughter Yona embodies innocence, resilience, and hope.

Overall, character arcs in "Snowpiercer" contribute to the exploration of its central themes, as each character grapples with their own motivations and flaws amidst the struggle for survival and freedom aboard the train. One of the film's standout elements is its striking visual aesthetic. Bong Joon-ho's direction, combined with the cinematography of Hong Kyung-pyo, creates a stark and immersive world within the confines of the train. From the gritty, claustrophobic atmosphere of the tail section to the opulent decadence of the front compartments, each setting is meticulously crafted to convey the stark contrast between the haves and the have-nots.

The visual effects and cinematography effectively convey the stark divide between the train's compartments and the desolate landscape outside. The film's use of lighting, camera angles, and set design creates an immersive atmosphere, enhancing the viewer's sense of confinement within the train. Practical effects and CGI seamlessly blend to portray the post-apocalyptic world realistically, reinforcing the themes of social inequality and class struggle.

The soundtrack and score, composed by Marco Beltrami, play a vital role in setting the film's tone. With a mix of orchestral and electronic elements, the music heightens tension and emotion, immersing viewers in the dystopian world of the Snowpiercer. Additionally, the sound design captures the train's ambiance, further enriching the cinematic experience with the rumbling of the engine and passengers' cries.

Maintaining a brisk pace, "Snowpiercer" balances action and reflection, keeping viewers engaged. The editing seamlessly transitions between narrative threads, building tension as the rebellion progresses toward its climax. Overall, the pacing and editing contribute to the film's gripping storytelling, ensuring viewers remain captivated by the unfolding drama aboard the train.

Furthermore, "Snowpiercer" features exceptional performances from its cast, with Chris Evans delivering a powerful portrayal of a reluctant yet determined leader. Tilda Swinton shines in her role as Mason, the eccentric and cruel spokesperson for the train's ruling class, delivering a memorable performance that perfectly balances humour and menace.

The film's action sequences are both thrilling and visceral, showcasing Bong Joon-ho's talent for crafting tension-filled set pieces. Whether it's a brutal hand-to-hand combat scene or a high-stakes showdown between the rebels and the train's security forces, "Snowpiercer" keeps viewers on the edge of their seats from start to finish.





# PROSPECT

Priyashi Pal

Imagine a destroyed moon covered in dusk, a father-daughter team on a frantic look for wealth, and bioluminescent creatures sneaking into the shadows. This isn't a scene from a high-budget Hollywood blockbuster, but rather the captivating world of *Prospect* (2018). Whereas it may not have earned standard consideration, *Prospect* has gotten to be a cult classic inside the sci-fi community, lauded for its interesting mix of character-driven accounts, dazzling air, and thought-provoking topics.

*Prospect* takes after Cee (Sophie Thatcher), a youthful lady constrained to go with her solidified father, Ezra (Pedro Pascal), on a mining undertaking to a remote moon. Their objective? To gather important "gems"—glimmering bioluminescent rocks exceedingly sought after within the world. Be that as it may, the journey is full of peril. The outsider moon may be an unforgiving scene, overflowing with concealed dangers and match-prospecting bunches. Before long, she finds herself caught between devotion to her father and a longing for life beyond the limits of this claustrophobic presence.

## A Symphony of Coarseness and Ponder: Components That Will Snare You

*Prospect* outperforms expectations in terms of world-building, and this is where things get interesting. Despite its modest budget, the film creates a believable and immersive outsider environment. The moon's surface could be a demolished canvas painted in quiet browns and grays, perpetually covered in a spooky sundown. However, the producers do not rely solely on computer-generated imagery. They use simple effects and intelligent lighting to create a sense of unease and claustrophobia. Bioluminescent vegetation casts an otherworldly gleam, while the constant trickling of concealed fluids adds to the unsettling atmosphere. It is a world that feels both foreign and strangely familiar, implying that hidden threats are far beyond reach.

The film's quality stems from its characters, whose energy keeps you engaged. Pedro Pascal delivers a nuanced performance as Ezra, a man honed through years of combat. He captures the edginess and brutality that are common among those who live on society's outskirts. However, there are hints of humanity beneath the harsh exterior, prompting you to reflect on his past and the reasons for his tenacious pursuit of wealth. Sophie Thatcher is brilliant as Cee, a young woman full of potential. You can not help but root for her as she navigates the complexities of her father-daughter relationship while fulfilling her desire for independence. The tension between them is palpable, resulting in a recurring sense of inner conflict throughout the story.

## More Than Fair Space Cattle Rustlers: A Deeper Mystery Unfurls

The film is more profound than a fair sci-fi experience story, advertising a slow-burn secret that unfolds piece by piece. As Cee and Ezra venture more deeply into the moon's caverns, they experience enigmatic images and bioluminescent creatures that both mesmerize and startle. The roots of these animals and the importance of the images have become an overarching puzzle that keeps you speculating all through the film. Prospect isn't a film for those looking for fast-paced activity. It's a moderate burn, depending on climatic pressure and character improvement to draw the viewer in. The producers take their time building up the world and the character's inspirations, which might feel moderate for a few viewers. However, for those who appreciate an astute and immersive experience, the payoff is critical.

The anticipation builds as Cee and Ezra experience not only the threats of the environment but also rival miners with their plans. You'll discover yourself on the edge of your situation as they explore tricky caverns, maintain a strategic distance from concealed dangers, and make troublesome choices that might have enduring results.

Prospect rises above the usual space-western tropes. While the themes of asset extraction and survival in the wilderness are reminiscent of "Treasure of the Sierra Madre" and "Firefly," the film does not rely solely on activity plans and shootouts. Instead focuses on these characters' passionate journeys as they explore the harsh materials of their world

## Positive Aspects of the film:

- Suspenseful Travel: A more profound investigation reveals enigmatic symbols and bioluminescent animals, raising the stakes and keeping you snared.
- Revealing a Secret: Investigating a destroyed moon covered in sundown. Bioluminescent flora and dribbling fluids create an unsettling air, keeping you on edge.
- Complex Characters: Pedro Pascal's solidified father and Sophie Thatcher's yearning girl draw you in with their love-strained energy. You may address his thought processes while establishing her boldness.
- Moderate Burn, Lasting Impact: This can be character-driven by barometrical pressure. Understanding watchers will be rewarded with a thought-provoking conclusion and an enduring impression of this unforgiving world.
- Beyond Space Cowboys: Disregard the shootouts! Prospect digs into themes of eagerness, family, and asset morals, including layers of interest.

## A Sci-Fi Gem for the Perceiving Watcher: Final views

Prospect may be a covered-up pearl within the sci-fi genre. It demonstrates that a low-budget film can provide a wealthy cinematic encounter with solid exhibitions, thought-provoking subjects, and a captivating world waiting to be investigated. Whereas it might not be for everybody, its climatic visuals, slow-burning puzzle, and well-developed characters make it a must-watch for fans of shrewdly and thought-provoking science fiction.

## ২০২৩ চনত জলবায়ু পরিবর্তনৰ সূচকে অভিলেখ সৃষ্টি কৰিছিল: বিশ্ব বতৰ বিজ্ঞান সংস্থা

বিশ্ব বতৰ বিজ্ঞান সংস্থাৰ (WMO) এক নতুন প্ৰতিবেদনত দেখা গৈছে যে সেউজ গৃহ গেছৰ মাত্ৰা, পৃষ্ঠৰ উষ্ণতা, সাগৰৰ তাপ আৰু অম্লতা বৃদ্ধি, সাগৰৰ জলপৃষ্ঠ বৃদ্ধি, এন্টার্কটিকাৰ সাগৰীয় বৰফৰ আৱৰণ আৰু হিমবাহ পিছুৱাই যোৱাৰ অভিলেখ পুনৰৱাৰ ভংগ হৈছিল। ডল্লিউ এম অ'ৰ প্ৰতিবেদনে নিশ্চিত কৰিছে যে ২০২৩ চনটোৱেই আছিল অভিলেখ অনুসৰি আটাইতকৈ উষ্ণ বছৰ, য'ত বিশ্বৰ গড় পৃষ্ঠৰ ওচৰৰ উষ্ণতা প্ৰাক-ওদ্যোগিক ভিত্তিৰেখাতকৈ  $1.85$  ডিগ্ৰী চেলছিয়াছ ( $\pm 0.12$  ডিগ্ৰী চেলছিয়াছৰ অনিষ্যয়তাৰ ব্যৱধানৰ সৈতে) আছিল। এইটোৱেই আছিল যোৱা দশকৰ ভিতৰত আটাইতকৈ উষ্ণ বছত। এয়া ২৩ মার্চত বিশ্ব বতৰ বিজ্ঞান দিৱসত ছেট অৱ দ্য প্ল'বেল ক্লাইমেট শীৰ্ষক প্ৰতিবেদনত প্ৰকাশ পাইছিল।



# বিজ্ঞান বাতা

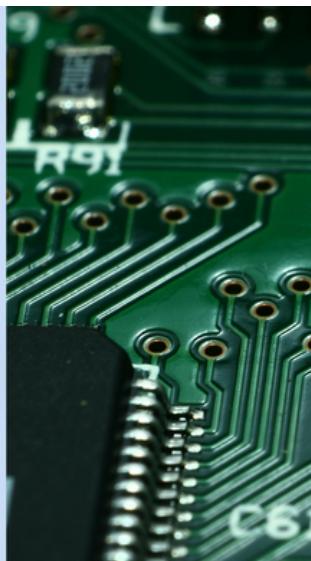
প্ৰস্তুতকৰ্তা  
জেগতিষ্মান গোমামী

## এক্স ক্লাছ সৌৰজলীৰ পৃথিৰীত আগমন



কৃত্ৰিম উপগ্ৰহসমূহে এক বৃহৎ সৌৰজ্বলন ধৰা পেলাইছে। ২৮ মার্চত বিজ্ঞানীসকলে ৰাষ্ট্ৰীয় মহাসাগৰীয় আৰু ৰায়ুমণ্ডল প্ৰশাসনৰ (NOAA) উপগ্ৰহ ব্যৱহাৰ কৰি সূৰ্যৰ পৰা বিস্ফোৰণ হোৱা এই জুইকুৰাটো দেখা পায়। ২৮ মার্চত পৃথিৰীত এই এক্স ক্লাছৰ সৌৰজ্বলীয়ে খুল্দা মাৰে যিটো গ্ৰহটোৰ বায়ুমণ্ডলৰ এটা অংশ আয়নীকৰণ কৰিব পৰাকৈ শক্তিশালী আছিল। এই জুইকুৰাক এক্স ১.১ ফ্লেয়াৰ হিচাপে শ্ৰেণীভুক্ত কৰা হৈছে। উল্লেখযোগ্য যে এক্স-ক্লাছ ফ্লেয়াৰ হৈছে সূৰ্যই উৎপন্ন কৰিব পৰা আটাইতকৈ শক্তিশালী ধৰণৰ বিস্ফোৰণ। এই বিস্ফোৰণ ইমানেই শক্তিশালী আছিল যে ই প্ৰশান্ত মহাসাগৰৰ ওপৰত গভীৰ চুটি তৰংগৰ 'বেডিঅ' ৱেকআউট কৰিছিল।

## অসমত স্থাপন ভাৰতৰ প্ৰথমটো থলুৱা ছেমিকগান্ডৰ নিৰ্মাণ আৰু পৰীক্ষাৰ উদ্যোগ



২০২৪ চনৰ মাৰ্চ মাহত টাটা গ্রুপে অসমৰ মৰিগাঁও জিলাৰ জাগীৰোড়ত ছেমিকগান্ডৰ নিৰ্মাণ উদ্যোগ প্ৰতিষ্ঠা কৰিবলৈ ২৭,০০০ কোটি টকা বিনিয়োগ কৰিব বুলি ঘোষণা কৰে। এই উদ্যোগটোৰ নাম ৰখা হ'ব টাটা ছেমিকগান্ডৰ এছেম্বলি এণ্ড টেক্স প্ৰাইভেট লিমিটেড (TSAT) আৰু ই অনুমান কৰা হৈছে যে ই অসম তথা উত্তৰ-পূবক বিশ্ব মানচিত্ৰত স্থান দিব। এইটো ভাৰতৰ প্ৰথমটো থলুৱা ছেমিকগান্ডৰ নিৰ্মাণ আৰু পৰীক্ষাৰ উদ্যোগ হ'ব আৰু কৃতিম বুদ্ধিমত্তা (এ.আই)ৰ উদ্যোগটোত অতি বৃহৎ প্ৰভাৱ পেলাব। এ.আই প্ৰয়োগ প্ৰক্ৰিয়াই বৃহৎ পৰিমাণৰ তথ্য সংৰক্ষণ কৰে, যিয়ে ছেমিকগান্ডৰ ডিজাইন আৰু উৎপাদনত প্ৰভাৱ পেলাব।



## ভাৰতীয় মহাকাশ গৱেষণা সংস্থাৰ অভিলাষী কাৰ্যসূচী 'মিছন গগনযান'

২৭ ফেব্ৰুৱাৰীত ভাৰতৰ প্ৰধানমন্ত্ৰী নৰেন্দ্ৰ মোদী ডাঙৰীয়াই ভাৰতীয় মহাকাশ গৱেষণা সংস্থা(ISRO)ৰ অভিলাষী গগনযান নামৰ প্ৰথম মানৱ মহাকাশ উৰণ অভিযানৰ মহাকাশচাৰীৰ চূড়ান্ত প্ৰার্থীৰ তালিকা প্ৰকাশ কৰে। এই গগনযান প্ৰকল্পৰ লক্ষ্য হৈছে মহাকাশচাৰীৰ এটা দল মহাকাশলৈ প্ৰেৰণ কৰা যিয়ে পৃথিবীৰ পৰা ৪০০ কিলোমিটাৰ ওপৰত তিনিদিনীয়া অভিযানৰ বাবে প্ৰদক্ষিণ কৰি ভাৰত মহাসাগৰত সুৰক্ষিতভাৱে অৱতৰণ কৰিব। ইছৰ'ৰ মতে, গগনযান অভিযানৰ বাবে প্ৰয়োজনীয় মূল উপাদানসমূহৰ ভিতৰত মহাকাশচাৰীসকলৰ বাবে নিৰাপদ উৎক্ষেপণ বকেট প্ৰস্তুত কৰা, মহাকাশত তেওঁলোকক নিৰাপদে ৰাখিবলৈ জীৱন সহায়ক ব্যৱস্থা বিকশিত কৰা, জৰুৰীকালীন অৱস্থাত তাৰ পৰা ওলোৱাৰ উপায় আৰু তেওঁলোকৰ প্ৰশিক্ষণৰ পৰিকল্পনা লগতে চিকিৎসা সেৱাৰ ব্যৱস্থা কৰা ইত্যাদি।



# Endeavoring to Restore the Rivers

Ankita R. Ojah & Debadis Pratim Sarma

Indian civilization, like many others, owes its existence and prosperity to the rivers that flow through its lands. Rivers not only supply freshwater, food, and other essential resources to humans, but they also serve as a natural filtration system for wastewater and offer a cost-effective mode of transportation. India, known as the land of rivers, boasts eight significant waterways, including the Indus, Brahmaputra, Ganga, Godavari, Narmada, Krishna, Mahanadi, and Kaveri. Here, the rivers hold a deep significance, going beyond their role as mere waterways, and are revered as both the source of life and a symbol of motherhood.



Source: Wikimedia  
Rivers and Lakes of India

The rivers in India can be categorized into four groups, namely, Himalayan rivers, Deccan rivers, Coastal rivers, and inland drainage basin rivers. The Himalayan River system includes the Indus and the Ganga-Brahmaputra-Meghna system. The rivers flow constantly throughout the year, sustained by the melting snow and glaciers. On the flip side, the volume of water in the Deccan rivers varies due to their dependence on rainfall. Many of these rivers are non-perennial. The rivers Godavari, Krishna, Cauvery, Mahanadi, Narmada, and Tapti are examples of this type. Coastal Rivers refer specifically to the rivers located in the coastal regions of India. These are short, episodic, and non-perennial in character. Some examples of this type of river include Subarnarekha, Vamsadhara, Nagavali, Thamirabarani, Netravati, and Sharavathi. Finally, rivers in the inland drainage system do not flow into an ocean or sea but instead drain into the land. Such rivers include Luni, Ghaggar, Rupnarain, Medha, and Ghaggar.

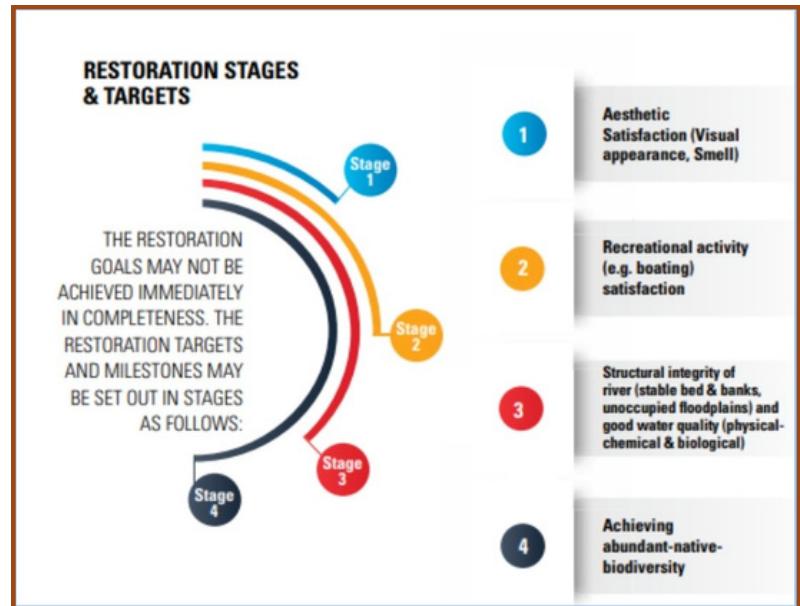
The river systems play a vital role in the functioning of the ecosystem, each with its distinct and important contributions. Regrettably, at present, the state of most rivers is either polluted or experiencing a gradual decline in water levels. The primary sources of river pollution in India include industrial wastewater, improper solid waste disposal, untreated domestic sewage, as well as the washing of clothes, vehicles and animals. The earliest recorded instance of water pollution was in 1976, when arsenic was found to contaminate groundwater in Chandigarh. Since then, there has been a constant degradation in the condition of our rivers. The consequences include polluted groundwater, contaminated food, destruction of aquatic ecosystems, transmission of diseases, and a higher risk of flooding caused by the buildup of solid waste. In 2022, the Central Pollution Control Board has identified

311 polluted river stretches across 279 rivers in 30 States/ UTs in the country. This identification was made based on the indicator of organic pollution, specifically Biochemical Oxygen Demand (BOD), at a threshold of 3mg/L. The year 2023 brought to light a series of events that captured public interest, with the Brahmaputra River making headlines due to its alarming depletion of water levels. It is important to mention that the Brahmaputra River holds the distinction of being the largest water-carrying river in India. The media reported an incident where a ferry became stranded in the sand, and the subsequent suspension of ferry services intensified the severity of the situation.

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In simple terms, river restoration refers to the management of rivers in order to restore biodiversity by reinstating natural processes. International Union for Conservation of Nature (IUCN) defines it as the “re-establishment of natural physical processes (e.g. variation of flow and sediment movement), features (e.g. sediment sizes and river shape) and physical habitats of a river system (including submerged, bank and floodplain areas).” There are numerous ways for people to contribute to river restoration efforts. These include activities like invasive species management and basic restoration techniques, as well as chemical, biological, and habitat monitoring. These monitoring efforts are invaluable in identifying and understanding issues, as well as documenting the outcomes of existing restoration projects. However, it is important to note that the techniques of restoration may differ depending on the specific river and its system.

The natural river ecosystem restoration methods include planting appropriate plants on top of the riverbanks and bank slopes. Therefore, the roots, stems, and leaves of these plants can serve as a protective barrier for riparian zones. In alternative situations, a method is employed to restore the meandering characteristics of a river by improving its zigzag pattern. When it comes to rivers that are primarily polluted due to human activities, the restoration techniques employed encompass physical methods like sewage interception, dredging, water diversion, and mechanical removal of algae. Moreover, the utilization of chemical approaches, coupled with biological mechanisms like the reestablishment of aquatic vegetation and the adoption of the bio membrane technique, is also implemented.



The Thames River in the United Kingdom underwent one of the earliest major restoration initiatives and has since been recognized as a global success story. Before the industrial revolution, the Thames River supported a diverse and flourishing ecosystem, abundant with a variety of wildlife species. As a result of the discharge from factories and inadequate waste management, the water quality deteriorated to the point of being unsuitable for habitation. In 1957, the river was officially declared biologically dead by the Natural History Museum. Improved waste management practices, stringent regulation of industrial effluents, and the conscious efforts of community advocates to restore native sea grasses and wildlife, the river has experienced the resurgence of indigenous species, including porpoises. In the latter part of 2021, the Zoological Society of London announced that the Thames River, once devoid of life, has regained its ecological activity. This demonstrates that by taking deliberate and proactive steps, humans can mitigate and potentially reverse the detrimental effects on river ecosystems. The Thames restoration project has become a model for river restoration initiatives worldwide. Similar to the Thames River of yesteryears, the Hindon River in Meerut, India, has suffered from severe pollution, as revealed by a recent study conducted in 2021. By studying the restoration techniques used for the Thames, the research aimed to determine if these techniques could be feasible for the Hindon. The results indicated that, with the implementation of suitable infrastructure measures, the restoration techniques applied to the Thames can indeed be applied to the Hindon as well. This establishes a promising precedent for communities impacted by contaminated natural resources.

Restoring a river to its previous glory is a monumental task that requires immense effort. But the solution to this problem cannot be attained solely through governmental measures; we must also take responsibility for our actions and actively engage in the restoration process. To make a real difference in our environment, it is crucial for the community to be engaged, public education to be provided, and governments to offer essential infrastructure support. It would be wise for us to remember that our ancestors didn't leave us the Earth as an inheritance, rather entrusted it to us for safekeeping, with the responsibility to pass it on to our children.

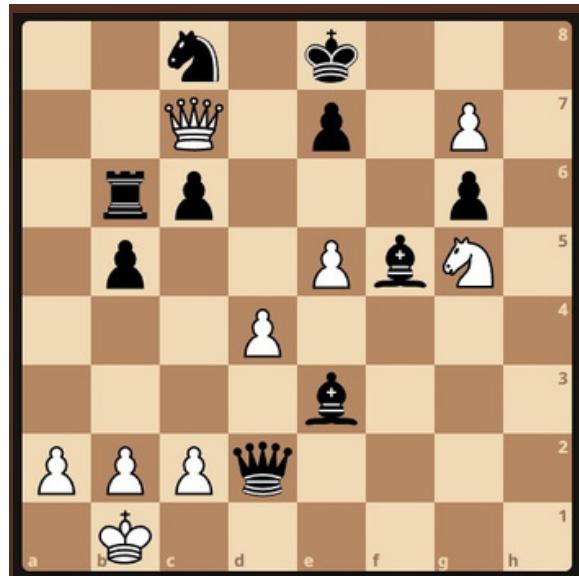
Kali River in Bulandshahr

Source: Wikimedia





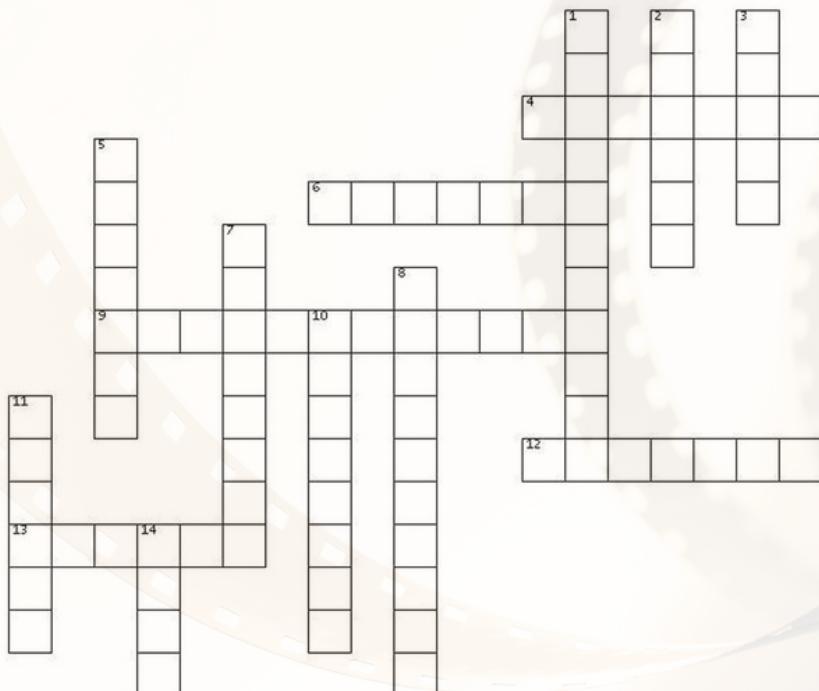
AI Generated



It is White's turn, and a mistake could lead to Black winning. What is the right move?

## *Light, Camera, Crossword!*

Guess the sci-fi films of the respective directors in the puzzle



### ACROSS

4. Andrei Tarkovsky
6. Paul Verhoeven
9. Christopher Nolan
12. Denis Villeneuve
13. Shane Carruth

### DOWN

1. Bong Joon Ho
2. James Cameron
3. Ridley Scott
5. Alfonso Cuaron
7. John McTiernan
8. Fritz Lang
10. Danny Boyle
11. Rian Johnson
14. Duncan Jones

Prepared by Debasish Pratim Sarma

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