BMC Ecology and Evolution

EDITORIAL Open Access

2026 joint *BMC Ecology and Evolution* and *BMC Zoology* image competition: the winning images

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Abstract
In 2026, researchers around the world participated in a joint image competition hosted by *BMC Ecology and Evolution* and *BMC Zoology*. Their photographs highlight the beauty and diversity of nature, showcasing the remarkable efforts of scientists to understand and protect it. This Editorial presents the winning images, selected by the Editor and senior members of the journals' Editorial boards.

Introduction

We are delighted to announce the winners of the joint image competition hosted by *BMC Ecology and Evolution* and *BMC Zoology*. This inclusive competition invited researchers at all stages of their careers and across various disciplines to share the visual stories behind their work. It provided a great opportunity for ecologists, evolutionary biologists, and zoologists to showcase their research to a broad audience.

We invited anyone affiliated with a research institution to submit to one of the following three categories: 'Relationships in nature', 'Protecting our planet', and 'Research in action'. As in previous years [1–12], we received submissions from ecologists, evolutionary biologists, and zoologists from all over the world, including those based in Australia, Brazil, Canada, China, Finland, India, Malaysia, the Netherlands, Spain, Sweden, the UK, and the USA.

We want to thank our Senior Editorial Board Members for selecting the winners, which was no easy task given the many spectacular entries we received. The judges chose the winning images not only for their visual appeal but also for the strength and clarity of the scientific stories they conveyed.

Overall winner: window to the wetlands

Sritam Kumar Sethy, a student at Berhampur University, India, was deemed the overall winner. His photograph was taken in a freshwater wetland habitat in the Balasore district of Odisha, India. It features an orange-tailed marsh dart damselfly (*Ceriagrion cerinorubellum*) peering through a natural opening in a leaf. Kumar Sethy comments that this photo "offers a glimpse into the often-overlooked world of freshwater biodiversity".

According to the United Nations, wetlands cover only 6% of the Earth's surface, yet they support a remarkable variety of life, hosting 40% of all plant and animal species. Unfortunately, these important ecosystems are rapidly disappearing. Over the past 50 years, we have lost 35% of the world's wetlands, primarily due to human activities and climate change [13].

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Kumar Sethy explains: "Damselflies are key predators in wetland ecosystems, helping to regulate insect populations. Adults spend much of their time perched on vegetation, remaining highly alert as they use their large compound eyes to detect prey, predators, and potential mates. The vegetation surrounding wetlands provides essential resting, hunting, and breeding sites, while the aquatic larvae depend on clean freshwater habitats for development. This close association with both terrestrial and aquatic environments make damselflies particularly sensitive to environmental change. Because they rely on healthy water bodies and intact vegetation, damselflies are widely recognised as bioindicators of ecosystem health. Declines in their abundance or diversity can signal habitat degradation, pollution, loss of wetland vegetation, or broader impacts of climate change. Conversely, their presence often indicates functioning ecosystems capable of supporting a rich variety of life. Protecting wetlands, freshwater corridors, and surrounding vegetation is crucial not only for damselflies but also for the countless organisms that depend on these ecosystems" (Fig. 1).

BMC Ecology and Evolution Senior Editorial Board Member David Ferrier commented: "It is hard not to smile at this beautifully composed and vivid image, in which the damselfly seems to display a remarkable sense of character and presence." Jennifer Harman, Editor of *BMC Ecology and Evolution** and *BMC Zoology*, remarked: "I voted for this photo as the overall winner because it is not only visually striking, but also highlights the importance of wetlands, which support a remarkable diversity of species yet are among the world's most threatened and rapidly disappearing habitats."

Fig. 1 Window to the Wetlands. Attribution: Sritam Kumar Sethy

Overall runner-up: a space for frogs

Set against a rainy sky that appears almost star-like, a northern red-legged frog (*Rana aurora*) looks ready for launch, a radio transmitter extending from its body as researchers prepare it for the next stage of its journey. However, the real story is firmly rooted on Earth. Ryan Wagner, a PhD researcher at Washington State University, USA, who captured the photo, explained: "Master's student Alyson Yates and undergraduate Ally Rounds attach a radio transmitter to a northern red-legged frog near Portland, Oregon, USA. They use radio telemetry to learn about frog movement and habitat use in the nearby forest. Yates' research will help biologists understand how to improve habitat connectivity and help road engineers to build a frog underpass beneath nearby Route 30, where thousands of red-legged frogs are killed every spring as they attempt to migrate across the busy highway to their breeding pools."

Jennifer Harman remarked: "This photo highlights how advances in technology are helping researchers translate ecological data into real-world conservation action, creating safer environments for species in an increasingly fragmented world" (Fig. 2).

Relationships in nature: best in category

Every winter, the cold, nutrient-rich waters of South Australia's Upper Spencer Gulf become the stage for one of the world's most remarkable wildlife spectacles: the planet's only known mass aggregation of giant Australian cuttlefish (*Ascarosepion apama*). Tens of thousands of animals gather to court, compete, and spawn.

Photographed by Victor Huertas, Adjunct Research Fellow at James Cook University, Australia, this image captures a moment of intense competition. At its centre, a dominant male blocks the approach of a rival attempting to reach a nearby female. In cuttlefish, such confrontations are fought not with sound but with colour and contrast, as individuals rapidly change the patterns on their skin to signal, intimidate, and defend.

Huertas explains: "Tens of thousands of cuttlefish converge here to compete, court, and spawn, turning the seafloor into a theatre of colour and conflict. Captured in the wild heart of this globally unique aggregation, this image freezes an ancient contest, one repeated for millennia in these waters alone, and increasingly vulnerable to a changing ocean. It's a reminder that some of the planet's most astonishing wildlife events are still unfolding, right here, right now. Yet even aggregations of this scale are

Fig. 2 Space for frogs. Attribution: Ryan Wagner

Fig. 3 Giant cuttlefish in breeding battle. Attribution: Victor Huertas

not invincible; reports this season point to unusually low numbers gathering in the area, a sobering sign of how fragile even large-scale natural phenomena can be."

David Ferrier commented: "This striking image captures both the intimacy and intensity of a complex and highly competitive mating display. The rare aggregation of this species adds an extra sense of privilege, as though we are witnessing a fleeting and extraordinary moment in nature" (Fig. 3).

Relationships in nature: runner-up

A brown goshawk (*Tachyspiza fasciata*), a forest raptor that preys on birds, mammals, reptiles, and large insects, finds itself outnumbered. Despite being a skilled predator, the raptor is harassed by a group of noisy friarbirds (*Philemon corniculatus*), highly social honeyeaters known for their aggressive territorial behaviour. The friarbirds surround the goshawk with close passes and swooping attacks in an effort to drive it away.

Captured by Alwin Hardenbol, a Postdoctoral Researcher at the Natural Resources Institute Finland, the image was selected as the runner-up in the 'Relationships in nature' category. It depicts mobbing, a common anti-predator strategy in birds in which smaller species collectively harass a potential threat.

> *A brown goshawk is being mobbed by noisy friarbirds in Mulligans Flat Woodland Sanctuary, Australia", explains Hardenbol. "Mobbing is a common anti-predator behaviour in birds, in which typically smaller species harass a potential predator through repeated calls, close approaches, and swooping flights. This behaviour can alert other birds to danger, discourage hunting attempts, and sometimes drive the predator from the area.*

BMC Ecology and Evolution Senior Editorial Board Member Christy Hipsley commented: "Three birds hang in the air like charcoal smudges on white paper. Once our brain processes that this is a black and white photograph and not a drawing, the next striking feature is the action of this moment. Birds regularly gang up on predators using cooperative behaviours, called mobbing. Mobbing also draws attention to predators so that younger birds learn to identify potential threats. Documenting behaviours in this way therefore plays an important role in species introductions, so that individuals can be trained to spot and respond to predators before they are released into the wild" (Fig. 4).

Research in action: best in category

Three undergraduate students sort through the contents of a beach seine net, carefully counting fish and invertebrates collected from the shallow coastal waters of New Brunswick, Canada. Captured by Liam Brennan of the University of New Brunswick, Canada, this image was selected as the winner of the 'Research in action' category for its beautiful depiction of the next generation of ecologists at work.

The students were participating in the university's Marine Semester programme, where undergraduates design and conduct their own field-based research projects, gaining practical experience in data collection, species identification, and ecological monitoring.

"Time in the field is important in offering students a hands-on understanding of both the challenges and rewards of field-based ecological research", said Brennan, who photographed the scene while working as a graduate teaching assistant.

Brennan continued: "The project depicted in this photo wanted to better understand how fish community structure changed seasonally relative to environmental parameters. Every week, this group of students took out a five-metre fishing net, dragged it through the water, then pulled it up to shore to see what fish they caught. There were several sculpin species (*Myoxocephalus*), winter flounder (*Pseudopleuronectes americanus*), and several other fish species that were regularly caught in the nets."

BMC Zoology Senior Editorial Board Member Edward Narayan commented: "As this image shows, presenting undergraduate students with research project opportunities will transform classroom science into action to support crucial ecological and environmental monitoring research" (Fig. 5).

Fig. 4 Go away. Attribution: Alwin Hardenbol

Fig. 5 Intertidal education. Attribution: Liam Brennan

Research in action: runner-up

Field technicians from Florida International University, USA, sample small fishes and macroinvertebrates from within a throw trap in Everglades National Park, Florida. Like many wetlands around the world, the Everglades are threatened by human activity, including phosphorus in agricultural and stormwater runoff, which has significantly degraded the water quality, threatening the remarkable wildlife that resides there. The state and federal governments have recognized the importance of this delicate subtropical wetland and responded by funding the largest and most expensive ecosystem restoration project in the world.

Brandon Güell explained: "Using a standardized 1 m^2 enclosure and seine net, researchers quantify the abundance and diversity of aquatic organisms across marsh habitats. These data form part of a long-term monitoring program assessing ecosystem responses to Everglades restoration and changes in hydrology, with small fishes and invertebrates serving as key indicators of wetland health and food web structure in this globally significant ecosystem" (Fig. 6).

Protecting our planet: best in category

Allen Tian, a postdoctoral researcher affiliated with Queen's University in Canada and Hangzhou Normal University and Zhejiang University in China, captured an impressive stereographic 'little planet' projection of the Long Sault Parkway, a 10.1 km route linking eleven islands in Lake St. Lawrence. The judges selected the photograph as the winner of the 'Protecting our planet' category for its creative perspective and compelling portrayal of the relationship between people and nature.

Tian commented: "These islands were formed from submerged hilltops following the construction of the Moses-Saunders Power Dam in the 1950s. This photo serves as a visual record of the significant impact of human activity on the environment. The creation of this waterway caused severe fragmentation of historically interconnected aquatic ecosystems and displaced thousands of residents. Today, the parkway serves as a bridge between the disruptions of the past and present conservation efforts. Protected from further development, the area now serves as an important bird sanctuary, demonstrating the potential for sustainable land management and ecological recovery."

This image was captured during his field season while conducting an environmental DNA (eDNA) biodiversity survey of the St. Lawrence River. By combining high-resolution drone surveying to monitor riparian vegetation and shoreline integrity with non-invasive eDNA sampling, Tian noted, "we can continuously assess the health of aquatic communities without disturbing the ecosystem further." This work aligns directly with the UN Sustainable Development Goals 6.6 and 15. It exemplifies how researchers are leveraging emerging non-invasive technologies, from aerial imaging to molecular ecology, to understand, protect, and sustainably manage ecosystems (Fig. 7).

Fig. 6 Everglades monitoring. Attribution: Brandon Güell

Fig. 7 A bridge between past and present. Attribution: Allen Tian

Protecting our planet: runner-up

A tiny olive ridley sea turtle (*Lepidochelys olivacea*) hatchling looks up to a human hand upon release. Photographed by Abhijeet Bayani, a biologist at MES Abasaheb Garware College, India, the image celebrates conservation action driven by local communities.

Along India's west coast, olive ridley turtles often nest solitarily rather than in mass nesting events. When protected from disturbance and predation, these scattered nests can achieve remarkably high hatching success. Community-led conservation efforts have therefore become an important lifeline, with local people safeguarding nests and helping ensure that hatchlings reach the sea.

"The release of hatchlings is not just a biological milestone, but an emotional one", said Bayani. "It brings a profound sense of joy and ownership to people, and a renewed promise of continuity to the species." After

waiting several days for an unpredictable hatching event, Bayani captured this fleeting moment as a hatchling emerged and was carefully handled before release.

David Ferrier commented: "An initial sense of concern for the young turtle quickly shifts to reassurance as the context becomes clear, drawing the viewer into a story of care and connection" (Fig. 8).

Highly commended

We received many fantastic photos beyond our winning images, and we're excited to showcase some of our highly commended below.

Although it was not selected as a winner, another photograph by Brandon Güell also attracted many votes. Güell explained: "Three Florida manatees (*Trichechus manatus latirostris*) gather closely to drink freshwater from a drain at the edge of the Flamingo Visitor Center in Everglades National Park, Florida, USA. In a landscape shaped by shifting salinity, access to freshwater is vital for manatee survival and often brings individuals together at a small number of reliable sources. This image captures both the species' gentle social behaviour and the subtle influence of human infrastructure on wildlife in the Everglades, where natural and built environments are becoming increasingly interconnected" (Fig. 9).

We received many strong entrants in the 'Research in action' category, making judging challenging. Among the favourites that did not win was a photo taken during a survey of Himalayan brown bear (*Ursus arctos isabellinus*) habitat in the Western Himalayas, India. Vineet Kumar of the Zoological Survey of India spotted what appeared to be a potential bear den: a large cave overlooking a remote alpine valley. After a three-hour climb across rugged terrain, however, the cave revealed an unexpected occupant.

> *What we discovered was entirely unexpected", said Kumar. "Rather than a bear den, the spacious cave was being used by nomadic shepherds as a natural shelter while grazing sheep and goats in these remote alpine pastures during summer.*

The image highlights the overlap between human livelihoods and wildlife habitat in the Himalayas. The same alpine landscapes that support pastoral communities also provide important foraging grounds for the endangered Himalayan brown bear, creating challenges for both conservation and local livelihoods.

More than a photograph of a mountain shelter, the image captures a moment when a search for bears became a lesson in coexistence. As Kumar reflected: "Every expedition has a story beyond its original question." Edward Narayan commented: "This image gives us reason to support remote field-based research as it can lead us to unexpected places and provide new ecological knowledge that can improve our understanding of human and wildlife co-existence in fragile landscapes" (Fig. 10).

Perched several metres above the flooded floor of a *Melaleuca* wetland in a remote part of the Northern Territory, Australia, Luke Jeffrey samples the hidden microbial communities living within tree bark, a newly

Fig. 8 Tide, turtle, and trust! Attribution: Abhijeet Bayani

Fig. 9 Manatees seek freshwater in the everglades. Attribution: Brandon Güell

Fig. 10 Into the bear's realm. Attribution: Vineet Kumar

recognised frontier in ecosystem science. This photo was also highly commended by the judges.

Jeffrey explained: "These bark-associated microbes may influence global biogeochemical cycles by regulating exchanges of methane, nitrogen, and other climate-relevant gases between the tree hosts and the atmosphere. By combining canopy gas flux measurements with microbial ecology, this research is reshaping how we understand trees: not simply as plants, but as thriving ecosystems hosting complex, busy microbial communities with planetary-scale implications. By revealing these cryptic, previously overlooked ecological and climate functions supplied by forests, this work may help strengthen the

Fig. 11 Barking up the right trees. Attribution: Luke Jeffrey

case for protecting and restoring forested ecosystems under increasing human and climate pressures" (Fig. 11).

Conclusions

Thank you to everyone who took part to make this year's competition a success. The competition resulted in a stunning collection of photos that showcase the wonders of nature and the incredible work being done by researchers around the globe. Please join us in celebrating the winners.

Acknowledgements

We would like to thank all the participants for entering the competition and explaining the stories behind their images. We would also like to acknowledge Simon Harold, who originally created the competition, and the Springer Nature Communications team. All images published in this Editorial are released under a Creative Commons Attribution License (CC BY) to ensure credit with proper attribution [14]. If you wish to re-distribute or re-use any images published in this Editorial, please credit individual winners as the image licensee.

Author contributions

JH organized the competition and wrote the Editorial, with contributions from DF, CAH, and EN. JH, BF, DF, CAH, DL, and EN selected the winners. All authors read and approved the final manuscript.

Declarations

Competing interests

JH is an employee of BMC. DF, CAH, and DL are *BMC Ecology and Evolution* Senior Editorial Board Members. BF and EN are *BMC Zoology* Senior Editorial Board Members.

Published online: 20 August 2026

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