



Editorial

Unveiling the hidden world: exploring aquatic invertebrates and ecosystems

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Abstract

As the gentle ripples of our aquatic domains caress the shores of scientific discovery, there lies a mesmerizing world waiting to be unveiled—a realm teeming with life, complexity, and ecological marvels. Within this areas, where the seemingly small and insignificant hold the keys to vast ecological mysteries, Aquatic Invertebrates and Ecosystem Research (AIER) stands as a beacon, illuminating the depths of our understanding. Edited by a consortium of passionate experts, AIER serves as the sacred codex of aquatic invertebrate science, offering a sanctuary for the dissemination of high-quality, original research that spans the breadth of this captivating field. From taxonomy and systematics to climate change impacts and socio-ecological systems, every page of AIER echoes with the symphony of scientific inquiry, inviting readers to embark on a journey of exploration and enlightenment. At the heart of AIER's mission lies a commitment to unraveling the intricate tapestry of aquatic ecosystems—a mission that resonates with the publisher's philosophy. With unwavering dedication, AIER strives to publish papers that delve into the nuances of ecology and behavior, the intricacies of physiological adaptations, and the profound implications of biodiversity conservation.

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As the gentle ripples of our aquatic domains caress the shores of scientific discovery, there lies a mesmerizing world waiting to be unveiled—a realm teeming with life, complexity, and ecological marvels (Starr and Wallace, 2021; Vehkaoja *et al.*, 2020). Within this areas, where the seemingly small and insignificant hold the keys to vast ecological mysteries, Aquatic Invertebrates and Ecosystem Research (AIER) stands as a beacon, illuminating the depths of our understanding. Edited by a consortium of passionate experts, AIER serves as the sacred codex of aquatic invertebrate science, offering a sanctuary for the dissemination of high-quality, original research that spans the breadth of this captivating field (Aquatic Invertebrates and Ecosystem Research, 2024).

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Aquatic invertebrates are the unsung heroes of our aquatic ecosystems, playing crucial roles in nutrient cycling, food webs, and ecosystem stability (Contos *et al.*, 2021; Sodhi *et al.*, 2010). Despite

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their small size, these organisms wield immense ecological influence, shaping the dynamics of entire ecosystems (Collier *et al.*, 2016; Ganguly and Candolin, 2023). From the industrious activities of freshwater mussels to the delicate filter-feeding mechanisms of zooplankton, every aspect of their biology holds valuable insights into the functioning of aquatic ecosystems (Ali *et al.*, 2024; Vaughn, 2018).

In recent years, the field of aquatic invertebrate research has witnessed a surge in interdisciplinary collaborations and technological advancements, enabling scientists to delve deeper into the hidden world beneath the waves (Chen, 2021). Molecular techniques, such as DNA barcoding and genomics, have revolutionized our understanding of species diversity and evolutionary relationships, while remote sensing and imaging technologies have provided unprecedented insights into habitat preferences and distribution patterns (Lahoz-Monfort and Magrath, 2021; Macher *et al.*, 2016).

One of the key focal points of AIER is the study of ecological interactions within aquatic ecosystems. From predator-prey dynamics to mutualistic relationships, these interactions form the intricate web of life that sustains aquatic communities (Hale *et al.*, 2020; Hay *et al.*, 2004; Millerter Kuile *et al.*, 2022). Through meticulous field observations, experimental manipulations, and mathematical modeling, researchers affiliated with AIER strive to unravel the complexities of these interactions, shedding light on the underlying mechanisms that drive ecosystem dynamics (Bibri *et al.*, 2024; Macreadie *et al.*, 2010).

Furthermore, AIER serves as a platform for addressing pressing environmental challenges, such as pollution, habitat degradation, and climate change. Aquatic invertebrates, as sensitive indicators of environmental health, provide valuable insights into the impacts of anthropogenic stressors on aquatic ecosystems (Firmiano *et al.*, 2021). By monitoring changes in population abundance, species composition, and physiological responses, scientists can assess the

ecological health of aquatic environments and inform evidence-based management strategies (Sumudumali and Jayawardana, 2021).

In the face of accelerating environmental change, the resilience of aquatic ecosystems hinges upon our ability to understand and mitigate the drivers of ecosystem degradation (Pelletier *et al.*, 2020). Through collaborative research efforts and interdisciplinary approaches, AIER seeks to bridge the gap between scientific knowledge and real-world conservation action. By engaging with stakeholders, policymakers, and local communities, AIER aims to foster greater awareness and appreciation for the intrinsic value of aquatic ecosystems.

Moreover, AIER recognizes the importance of fostering inclusivity and diversity within the scientific community. By championing equity and inclusivity in research practices, AIER endeavors to create a more welcoming and supportive environment for scientists from underrepresented backgrounds. Through mentorship programs, networking opportunities, and outreach initiatives, AIER seeks to cultivate the next generation of aquatic invertebrate researchers, ensuring a legacy of scientific excellence and innovation.

As a proud member of Crossref and the Web of Science Reviewer Recognition Service, AIER stands at the forefront of scholarly excellence, fostering a culture of rigor and integrity within the scientific community. Moreover, AIER's ongoing efforts to secure indexing in renowned databases such as Scopus and the Web of Science underscore its unwavering commitment to global visibility and impact. In the pursuit of knowledge, AIER leaves no stone unturned, working tirelessly to expand its reach across various journal directories and digital preservation platforms. From the Electronic Journals Library (EZB) to Sherpa Romeo, AIER's presence reverberates across the digital landscape, ensuring that its scholarly contributions endure for generations to come. By adhering to the ethical publishing standards delineated by the Committee on Publication Ethics (COPE), AIER efforts to strengthen its role as a premier venue for disseminating top-tier research within the realm of aquatic science. In doing so, AIER actively contributes to worldwide deeds aimed at advancing our understanding of aquatic invertebrates and ecosystems (COPE, 2024).

As we stand on the precipice of a new era of discovery, AIER serves as a guiding light, illuminating the path forward with its unwavering dedication to excellence and innovation. Let us, therefore, embrace the boundless potential of aquatic invertebrates and ecosystems, for within their depths lie the secrets of our past, present, and future.

In the pages of AIER, let us embark on a journey of exploration and enlightenment—a journey that promises to unveil the hidden world beneath the surface of our seas and rivers, igniting our curiosity and inspiring generations to come.

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Ethical approval statement

None to declare.

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Not applicable.

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Not applicable.

Conflict of interest

The author declare no competing interests.

Authors' contribution

Hadi Hamli: Conceptualization, writing first draft, review and revision; **Lirong Yu Abit:** writing first draft, review and revision. All of the enlisted authors have read and approved the final version of the published editorial.

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