

NEWS, NOTES & EVENTS

The Online Journal System now live for submission and peer-review

Dolly Priatna and Kathryn A. Monk (Eds.)

Producing the first issue of a new scientific journal is an exciting and stressful time for any editorial board. Producing the second issue is more quietly satisfying with different concerns. Everyone was supportive and interested in the launch, but will they now follow up with challenging papers and relevant information to share, and will colleagues use and share this journal? A significant step forwards in the production of The Indonesian Journal of Applied Environmental Studies (InJAST), is that the Online Journal System is now live. This has meant that, whereas all work for the first issue was undertaken through email communication, for this second issue, all manuscript submissions and their peer-review processes have been managed successfully online.

A major and much appreciated demonstration of support for InJAST is the MoU that has now been signed between the Graduate School of Environment Management in Pakuan University and PERWAKU (Perhimpunan Cendekiawan Lingkungan Indonesia; the Indonesian Association of Environmental Scholars), one of their key collaborations being to publish collaboratively InJAST. The MoU was signed auspiciously on 5 June 2020, the 16th anniversary of PERWAKU and the 46th anniversary of World Environment Day.

World Environment Day 2020 sought to “*engage governments, businesses, celebrities and citizens to focus their efforts on a pressing environmental issue... the theme is biodiversity – a concern that is both urgent and existential. Recent events, from bushfires in Brazil, the United States, and Australia to locust infestations across East Africa – and now, a global disease pandemic – demonstrate the interdependence of humans and the webs of life, in which they exist.*”

Also to mark World Environment Day, Pakuan University and PERWAKU, together with Andalas University, held a webinar focussed on the Protection

and Management of The Environment of the Covid-19 Era. This global pandemic has of course affected everyone from all walks of life, and the webinar explored the dangers of over use and destruction of the natural world, the benefits all humans derive from nature for our survival, and the demands for good focussed environmental management. Although incredibly tragic, the pandemic has perhaps focussed governments, businesses and communities alike on our relationship with nature.

All such concerns lie within the globally recognised nexus of the nature crisis, the climate emergency, and unsustainable production and consumption. Environmental managers must understand and bring into account a wide array of subjects and approaches, not just science and technology but also social sciences, behavioural insights, economics, policy and regulation, and the arts and humanities, when tackling such problems. In Indonesia, and elsewhere, these challenges include deforestation, habitat loss and air pollution from forest fires, and water and air pollution from industrial and urban development. The second issue of InJAST illustrates this breadth of interest, concern, and focussed research, comprising papers on environmental policy, the UN Sustainable Development Goals, natural resources management, biodiversity of restored habitats, and progression in methodological approaches.

As Editors-in-Chief, we are very pleased to see this second issue appear and encourage our colleagues from all sectors to submit their papers covering primary research, reviews, and research into policy and practice.

InJAST’s website and online submission portal is:

<https://journal.unpak.ac.id/index.php/InJAST/index>

Submissions can also be directed to the Chief Editors at: **injast@unpak.ac.id**

Comments on InJAST’s website, reporting portal issues and other issues, should be addressed to the Editorial Manager at: **editor_injast@unpak.ac.id**

NOTES

Environmental Education in Indonesia: Creating Responsible Citizens in the Global South?

Indonesia's wealth of natural resources is being exploited at breakneck speed, and environmental awareness and knowledge among the populace is limited. This book examines how young people learn about the environment to see how education can help to develop environmental awareness and avert vast environmental destruction, not only in Indonesia, but also in the Global South more generally. Based on in-depth studies conducted in the cities of Yogyakarta and Surabaya, complemented with surveys of students in secondary schools, *Environmental Education in Indonesia* examines educational curricula, pedagogy and "green" activities to reveal what is currently being done in schools to educate children about the environment. The book investigates the shortcomings in environment education, including underqualified teachers, the civil service mentality, the still-pervasive chalk-and-talk pedagogy and the effect of the examination system. It also analyses the role of local government in supporting (or not) environmental education, and the contribution of environmental NGOs. The book establishes that young people are not currently being exposed to effective environmental education, and the authors propose that the best and most culturally appropriate way forward in Indonesia is to frame pro-environment behaviour and responsibility as a form of citizenship, and specifically that environmental education should be taught as a separate subject. This book will be of great interest to students and scholars of contemporary Indonesia and Southeast Asia, education for sustainability and environmental education, as well as sustainability and sustainable development more generally.

Parker & Prabawa-Sear (2020). *Environmental Education in Indonesia: Creating Responsible Citizens in the Global South?*. Routledge, New York, USA.

Natural products for surface water coagulation: An alternative sustainable solution for rural areas

This research aims at process optimization using response surface methodology (RSM) for coagulation of surface water by coagulants extracted from natural product. Apricot seeds extract (ASE), peach seeds extract (PSE) and mango seeds extract (MSE) were evaluated. The optimum operating conditions for ASE and PSE at initial turbidity of 27.5 NTU were pH 7 and coagulant dose of 45 mg/l. However, the optimum operating conditions for MSE at initial turbidity of 27.5 NTU were pH 5.5 and MSE dose of 45 mg/l. Under the optimum conditions, residual turbidity without filtration was 9.13, 10.3, 5.81 NTU for ASE,

PSE and MSE, respectively. MSE could be used as secondary coagulant with the alum. At low turbidity surface water treatment, ratios of 20/80, 40/60 and 60/40 MSE/alum achieved residual turbidity of less than 1 NTU which comply with the Egyptian Standards. However, at medium turbidity surface water, ratio of 20/80 MSE/alum achieved residual turbidity of less than 1 NTU.

Elmolla et al. (2020). Natural products for surface water coagulation: An alternative sustainable solution for rural areas. *International Journal of Environmental Research* **14**:489-499.

Transmission of COVID-19 virus by droplets and aerosols: A critical review on the unresolved dichotomy

The practice of social distancing and wearing masks has been popular worldwide in combating the contraction of COVID-19. Undeniably, although such practices help control the COVID-19 pandemic to a greater extent, the complete control of virus-laden droplet and aerosol transmission by such practices is poorly understood. This review paper intends to outline the literature concerning the transmission of virus-laden droplets and aerosols in different environmental settings and demonstrates the behavior of droplets and aerosols resulted from a cough-jet of an infected person in various confined spaces. The case studies that have come out in different countries have, with prima facie evidence, manifested that the airborne transmission plays a profound role in contracting susceptible hosts. The infection propensities in confined spaces (airplane, passenger car, and healthcare center) by the transmission of droplets and aerosols under varying ventilation conditions were discussed. Interestingly, the nosocomial transmission by airborne SARS-CoV-2 virus-laden aerosols in healthcare facilities may be plausible. Hence, clearly defined, science-based administrative, clinical, and physical measures are of paramount importance to eradicate the COVID-19 pandemic from the world.

Jayaweera et. al. (2020). Transmission of COVID-19 virus by droplets and aerosols: A critical review on the unresolved dichotomy. *Environmental Research* **188**:1-18.

Decline in PM_{2.5} concentrations over major cities around the world associated with COVID-19

The COVID-19 started from Wuhan city in China, slowly spread across the globe after December 2019. Due to movement of people from one city to other cities, one country to other countries, infection spreads and COVID-19 became a pandemic. Efforts were made at local, regional and national levels to lockdown

the movement of people and to keep infected one in quarantine or isolation to stop the spread of COVID-19. The traffic, market and small industries were closed, as a result pronounced decline in the concentrations of particulate matters (PM) were observed. Normally these sources contribute to the high concentrations of particulate matters (PM_{2.5}) which represents air quality of a location. In this short communication, we present analysis of PM_{2.5} of major cities (New York, Los Angeles, Zaragoza, Rome, Dubai, Delhi, Mumbai, Beijing and Shanghai) around the world suffered severely with the COVID-19. Our analysis shows decline in PM_{2.5} concentration due to lockdown, mainly due to less movement of people to keep “social distancing” to control the spread of CORONA-19. The low concentrations of PM_{2.5} reflect the efforts made in the cities to curb the spread of infection, that improve air quality.

Chauhan & Singh (2020). Decline in PM_{2.5} concentrations over major cities around the world associated with COVID-19. *Environmental Research* **187**:1-4.

Climate change research in Asia: A knowledge synthesis of Asia-Pacific Network for Global Change Research (2013–2018)

Countering climate challenges requires genuine multi-layered approaches in cooperation with various stakeholders. Spanning 20 years, the Asia-Pacific Network for Global Change Research (APN) has been facilitating the research community to provide regional and grassroots results and solutions, while acting as a mechanism to encourage science-policy-stakeholder dialogue. This paper outlines the relevance of APN projects to IPCC policymaking by laying out knowledge products and lessons learned from the projects. It also narrates how regional research and capacity building assist in responding to the increasing urgency across climate change and the SDGs. A synthesis of project-generated knowledge was garnered from research and capacity development studies conducted under the auspices of APN to identify their scope and level of policy relevance. A combined typology and solution scanning with Likert scale as relevance rating was employed to categorize contribution against key themes of the IPCC sixth assessment report. Findings suggest 115 distinct and relevant projects completed mostly in Southeast Asia, South Asia and Temperate East Asia, with many of them asserting community-based adaptation and mitigation surrounding issues on ecosystems and biodiversity, extreme weather events, water-food-energy nexus, sustainable waste management, and climate education. Findings also show 163 knowledge products in which majority of them (66.87%) were peer-reviewed journal articles,

11.04% were reports, 7.98% were policy briefs, 6.75% were guidelines and tools, 4.91% were books and 2.45% were perspectives and opinions. With the evolving synergies between global climate targets and the SDGs, it is recommended that APN solidify its role in science-policy partnerships and networking by creating improved interlinkages for disseminating knowledge gaps filled and in replicating lessons learned and best practices found in APN knowledge products. In addition to science-policy dialogues and output synthesis, a regular review of APN research and capacity development outcomes will help in realizing these important aspects toward wider policy impact.

Uchiyama et. al. (2020). Climate change research in Asia: A knowledge synthesis of Asia-Pacific Network for Global Change Research (2013–2018). *Environmental Research* **188**:1-10.

On the conservation value of historic canals for aquatic ecosystems

While fragmentation and habitat loss due to water infrastructure threaten freshwater biodiversity worldwide, historic canals have the potential to contribute to both cultural heritage and biodiversity conservation. Shifting management objectives regarding historic canals from development to recreation and conservation offer opportunities for achieving conservation targets in these anthropogenic systems. However, managing historic canals often involves multiple objectives (e.g., nature conservation vs historic preservation). We reviewed ecological studies in various types of canal systems, examined the potential of historic canals to contribute to biodiversity conservation, and provided suggestions to promote biodiversity conservation given the opportunities and challenges in canal management. Canal characteristics (e.g., size, main use, surrounding environment, physical and hydrological properties) can be used to qualify or quantify their potential conservation value and risk. Changing management regimes to mimic natural flow, enhance habitat complexity, and modify connectivity could improve ecosystem functions and services in canals. To achieve conservation potential of historic canals, studies are required to fill knowledge gaps and to understand trade-offs among often competing objectives. The use of decision analysis such as structured decision making allows managers to incorporate multiple objectives, evaluate trade-offs, and address uncertainties in historic canal management.

Lin et al. (2020). On the conservation value of historic canals for aquatic ecosystems. *Biological Conservation* **251**:1-10

Combining spatial modeling tools and biological data for improved multispecies assessment in restoration areas

Habitat restoration is one of the actions to reduce landscape fragmentation by promoting connectivity and thus biodiversity. But knowing where to implement these habitats is a major issue and planners lack guidance for answering this question, in particular when it involves multiple species and over a large area. We proposed to combine biological data, habitat suitability models and spatial graphs to improve multiscale and multispecies connectivity in Ile-de-France, a highly artificialized region of 12,000 km². The framework consisted of i) modeling habitat suitability for eight pond-dwelling species (*Alytes obstetricans*, *Bufo bufo*, *Epidalea calamita*, *Hyla arborea*, *Rana temporaria*, *Salamandra salamandra*, *Triturus cristatus*, and *Natrix natrix*), ii) modeling the ecological network for each species, iii) prioritizing each sampling point depending on the gain in connectivity if a new pond was created there and iv) combining single-species results to identify the areas that could improve multispecies connectivity. The multivariate statistical analysis revealed that transitional forest environments appeared to be the most strategic areas for improving multispecific connectivity (at least for 5 species). Targeted addition of habitat within an ecological network can increase habitat density in deficient areas and reconnect network sub-parts. This approach is therefore promising to guide conservation actions and “no net loss” biodiversity measures, especially the final stage of offset in the mitigation hierarchy.

Clauzel & Godet (2020). Combining spatial modeling tools and biological data for improved multispecies assessment in restoration areas. *Biological Conservation* **250**:1-11.

Towards biocultural approaches to peatland conservation: The case for fish and livelihoods in Indonesia

Conservation projects are likely to fail if plans to preserve important wildlife habitats and species are not co-developed between conservation organisations and local communities to reflect the needs and diverse values of the latter. Tropical peatland conservation represents a case in point: local community livelihoods have only recently come into focus, particularly within academic literature. Instead, many previous studies emphasise the need to conserve intact peat swamp forests for their carbon storage, as a habitat for flagship species such as the orangutan, and to provide fire-free landscapes. Here, we explore the socio-environmental issues being faced in the peatland landscapes of Central Kalimantan, Indonesia. This includes the loss of peat-swamp forest, decreases in peatland fish populations and related socio-cultural challenges such

as potential loss of fishing livelihoods along with historic and continued experiences of marginalisation of indigenous communities. To find solutions to these complex and interrelated problems, an interdisciplinary approach which focuses on interdependencies and includes multiple worldviews is required. We propose an approach which deploys both Ethan Miller’s use of livelihoods (incl. Miller, 2019) and biocultural approaches to conservation to analyse human-nonhuman relationships, with a focus on fish and fishing livelihoods. We draw on data from in-depth social and ecological research in two village communities in Central Kalimantan, and in so doing illustrate how fish conservation has the potential to support important biocultural and livelihood relationships between human and nonhuman communities in peatland areas. Our findings lend support to previous calls for biocultural approaches to conservation in other socio-ecological contexts, and lead us to conclude that tropical peatland conservation initiatives that integrate such approaches will result in improved outcomes for peatlands, forests, biodiversity and people. These findings will be relevant to other tropical peatland areas with high dependence on fishing as a source of livelihood, such as the peatlands of the Amazon and Congo basins.

Thornton et al. (2020). Towards biocultural approaches to peatland conservation: The case for fish and livelihoods in Indonesia. *Environmental Science & Policy* **114**:341-351.

Domestic water supply, residential water use behaviour, and household willingness to pay: The case of Banda Aceh, Indonesia after ten years since the 2004 Indian Ocean Tsunami

In this study, we developed a preliminary assessment of current domestic water supply and use in Banda Aceh, Indonesia, a city that was hardest hit by the Indian Ocean Tsunami of 2004. The motivation was to develop understanding of the status and future direction for improvement of domestic water supply after 10 years of post-tsunami reconstruction. For this purpose, we collected primary and secondary information from both water utility and residential households. In particular, we conducted household survey to examine water use behaviour in relation to domestic water supply by local utility, public perception on water supply service, and household willingness to pay (WTP) for reliable water supply. Our study results show that domestic water supply in the city has been improving in service coverage but is subject to high percentages of non-revenue water, financial loss, and poor performance. Despite available tap water, residential households access multiple water sources differentially between drinking and non-drinking purposes. All survey respondents are willing to pay for

reliable water supply service, with median WTP estimated at approximately 190% of current household monthly water bill. Most respondents have a concentrated WTP distribution whose mean depends mainly on household income, family size, and water use behaviour. The study findings fill in the knowledge gap in the literature while informing improvement of domestic water supply in Banda Aceh, Indonesia.

Jiang & Rohendi (2020). Domestic water supply, residential water use behaviour, and household willingness to pay: The case of Banda Aceh, Indonesia after ten years since the 2004 Indian Ocean Tsunami. *Environmental Science & Policy* **89**:10-22.

EVENTS

The 6th Spatial Statistics Conference 2021: Climate and the Environment

Welcome to the 6th Spatial Statistics conference, which will be held at the University of Colorado Boulder, USA, from 20 – 23 July 2021 under the theme Climate and the Environment. The conference will provide a forum to debate and discuss how to use spatially referenced data to advance our understanding and provide support for decision making in the domain of Earth system dynamics. This conference will focus on climate change dynamics, their causes, their effects and their future. The conference theme will be the perspective of the Earth as a *unified system* with connections and feedbacks between physical and biological spheres and also human activities. Crucial developments in the methodology are in new scalable methods, spatio-temporal statistics, prediction and statistical aspects of modeling, like spatial and spatio-temporal extremes, attribution and forecasting. Abstract submission deadline 15 January 2021.

4th International Conference on Global Food Security. Achieving local and global food security: at what costs?

As the COVID-19 pandemic continues to create so much uncertainty, we have made the decision to cancel the in-person 4th International Conference on Global Food Security that was scheduled for 6-9 December 2020 in Montpellier, France. The 4th International Conference on Global Food Security Online will take place as a live-streamed and interactive event 7-9 December 2020, 12:00-18:00 CET, with pre-conference mini-symposia on 4 December 2020, 12:00-18:00 CET. Register now to participate in an interactive conference experience direct from your desktop or mobile device: live-stream presentations and take part in discussion through live chat and Q&A. Author registration deadline: 23 October 2020. Registration deadline for live participation (non-presenting delegates): 3 December 2020. Your

registration includes on-demand access for 30 days (from one day after the conference).

GLF Biodiversity Digital Conference: One World – One Health (28 - 29 Oct 2020, Online)

With global health pandemics and climate change creating a world of unknowns, we still have the power to step up to restore the earth. Join thousands of biodiversity experts, scientists, policymakers, journalists, activists, private sector and Indigenous groups at the GLF Biodiversity Digital Conference to learn how the world's leading organizations are uniting in the wake of COVID-19 to conserve and protect the world's disappearing biodiversity—from seeds to sea turtles. Held under the theme 'One World – One Health', this two-day event will reach tens of millions of people, spotlight ecosystem restoration and contribute to the UN CBD's Post-2020 Global Biodiversity Framework, making 2020 the super year for nature and biodiversity.

3rd KOBI Congress, International and National Conferences

This conference held by collaboration of Konsorsium Biologi Indonesia (KOBI) with Biology Department Faculty of Mathematics and Natural Sciences University of Bengkulu. This event will be held on Tuesday-Wednesday, November 24-25, 2020. We are pleased to invite you to attend this event, which will be organised by KOBI and Biology Department University of Bengkulu, Indonesia. This is a virtual international and national conference to present research results and to analyse current conditions and all scope of biology. Focus and Scope: Molecular Biology and Biotechnology, Conservation and Environmental Biology, Agricultural and Marine Biology, Microbiology and Health Biology, Development and Function Biology.

International Conference on Human-Wildlife Conflict and Coexistence

The IUCN Species Survival Commission (SSC) Human-Wildlife Conflict Task Force, the Global Environment Facility-funded and World Bank-led Global Wildlife Program and the Wildlife Conservation Research Unit at Oxford University's Department of Zoology are co-hosting this International Conference on Human-Wildlife Conflict and Coexistence in Oxford, UK, in 2021. The conference is organised in collaboration with the IUCN Commission on Environmental, Economic and Social Policy (CEESP), the Food and Agriculture Organization (FAO) of the United Nations, the United Nations Development Programme (UNDP) and several more organisations. Human-wildlife conflict is one of the most pressing threats to biodiversity conservation and achievement of sustainable development. These conflicts threaten the healthy co-existence of people and wildlife and undermine conservation efforts. Collaboration across

disciplines and sectors is needed in this to address human-wildlife conflicts world-wide. It will be an interdisciplinary event, actively seeking participation from presenters and discussants from fields such as ecology, animal behaviour, psychology, law, conflict analysis, mediation, peacebuilding, international development, economics, anthropology and others, to understand human-wildlife conflict through various viewpoints, learn from each other, and build new links and collaborations.

Postponement of the IUCN World Conservation Congress – New dates will be announced in due course

In view of the sanitary situation associated with the COVID-19 pandemic, France and the International Union for Conservation of Nature (IUCN) have decided to postpone the IUCN World Conservation Congress, which was to be held in January 2021 in Marseille. New dates for the event will be announced in due course. France and IUCN remain fully committed to the development of a global framework for the conservation of biodiversity and will continue to act towards this objective. We will provide more information on preparation, programme, logistics and more on the page dedicated to the Congress postponement as it becomes available.