



EDITORIAL

Editorial — Volume 39, Issue 4

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The Australian Journal of Environmental Education (AJEE) is pleased to present Volume 39, Issue 4 — the final issue of this volume. We have included seven articles, one communication article, and four reviews including our first film review. This editorial introduces each of the manuscripts and provides some updates for our environmental education research community.

Volume 39 — Issue 4

In this issue, the final issues for Volume 39, AJEE presents a collection of manuscripts that showcase innovative research, knowledge, and practice that progresses ideas and possibilities in our field. Topics include: the use of environmental science to educate students about environmental conservation; nature connection practices in non-formal place responsive programmes; environmental science improving science literacy with a pre-service teachers focus; ocean literacy inclusions in curriculum to support community lead coastal zone environmental improvement; citizen science programmes focussing on microplastics; food web as an indicator to understanding human environmental connections and impacts; and the application of eco-humour in environmental education. Across these manuscripts the methodological explorations include: mixed methods; analysis of children's representations; analysis of large international data assessments; analysis of open questionnaires exploring models; statistical analysis describing the difference between countries curriculum analysis; pre/post-test analyses in experimental and control groups of students; and student questionnaire with closed and open questions. Manuscripts represent research from Bhutan; Brisbane — Australia; evaluation of international data; northern Israel; Brazil — Rio de Janeiro; Portugal — northern coastal region; and Greece — Crete the city of Heraklion. A communication article explores (with examples) the application of eco-humour in the environmental education pedagogical toolkit.

Following are some short descriptions introducing each manuscript and the list of reviews.

Article 1: The Impacts of Environmental Science on Bhutanese Students'; Environmental Sustainability Competences by Kishore Mongar. This Bhutanese research is framed by the Gross National Happiness philosophy where the four pillars are good governance, sustainable socioeconomic development, preservation and promotion of culture, and sustainable environmental conservation. The research question: *What are the impacts of studying Environmental Science on Bhutanese students for environmental sustainability?* A mixed methods study with interviews and surveys exposed a dominant anthropocentric rather than an eco-centric perspective about sustainable practices. Students expressed developing optimism, agency,

stewardship, and positive behaviours from studying environmental science and there is an opportunity for teachers to leverage this further through action-oriented approaches.

Article 2: Learning with Place: Exploring Nature Connection Practices on the Earth Kids Programme by Emma Brindal. Children's representations (story, writing, drawing, and collections from nature) are used to explore their experiences of place responsive programming in integrated outdoor learning that recognise the entanglement of humans, place, and the more-than-human-world. The Earth Kids programme is run at Northey Street City Farm in Brisbane on the unceded land of the Yuggera and Turrbal People. Findings suggest that integrated programmes foster embodied and generative place encounters; enable relationships with place and the more-than-human to emerge; cultivate *learning with* place and (re)story place relations.

Article 3: The Importance of Cultivating Awareness of Environmental Matters in Science Classrooms: A Cross-Regional Study by Ahlam Lee. This study draws data from the 2015 Organisation for Economic Cooperation and Development Programme for International Student Assessment Science performance assessment exploring the relationship between students' awareness of environmental matters and their science literacy scores in the context of established predictors for science learning. The results indicate that a significant and positive relationship emerges between students' awareness of environmental matters and science literacy scores and authors call for collaboration to develop interdisciplinary environmental science curriculum.

Article 4: Evaluating Environmental Behaviour and Commitment of Pre-Service Primary Science Teachers by Anat Abramovich and Shirley Miedijensky. In 2022, the Israel Ministry of Education allotted 30 hours per year for the instruction of climate change in all classes. This study focussed on the role of pre-service teachers as change agents in school contexts regarding education for sustainability through exploring their environmental behaviour. The investigation employed the Johari Window (JW) model — a reflective tool exposing various knowledge levels of one's behaviour as well as the Authentic Inner Compass (AIC) model — allowing expression of environmental behaviour. The research questions were: (1) What, if any, were the changes in the environmental behaviour of pre-service primary science teachers, using the JW and the AIC models? (2) In what ways, if any, are participants, as future science teachers, committed to implementing Education for Sustainability (EfS)? Data was collected via two open questionnaires and findings indicate that all expressed a duty to address EfS however, barriers and concerns as well as actions are explored.

Article 5: Ocean Literacy in Brazilian Formal Education: A Tool for Participative Coastal Management by Carmen Edith Pazoto, Michelle Rezende Duarte, and Edson Pereira Silva. Brazil boasts a very high coastal zone (region of interaction between terrestrial and marine environments) which is also highly populated. This study responded to the accumulating signs of environmental decay specifically around Rio de Janeiro through an exploration of ocean literacy “the understanding of the ocean's influence on humans and their influence on the ocean” in the formal education curriculum. Biology and Geography high school curricula included good coverage of marine environments with the possibility of developing ocean literacy. However, coverage alone does not guarantee knowledge will reach classrooms and empower citizens to make informed decisions so these researchers call for teachers to be trained in ocean literacy themes to promote engaged and responsible participatory coastal management.

Article 6: Students' Attitudes Towards the Environment and Marine Litter in the Context of a Coastal Water Quality Educational Citizen Science Project by José Luís Araújo, Carla Morais, and João Carlos Paiva. Citizen Science programmes have the power to educate and enact change. The educational citizen science project PVC — *Perceiving the Value of*

Chemistry behind water and microplastics is suitable to Portugal due to its large coastal area. This study explored middle school students' attitudes towards the environment and marine litter before their involvement in this programme and then after. Data revealed that students demonstrated being positively impacted which led to calls to promote opportunities to enhance an environmentally literate society by linking and relating the environmental education to chemistry education.

Article 7: Students' Perceptions of the Natural World and their Attitudes Toward Ecological Issues: What is the Relationship Between Them? By Irene Bayati. Many students remain unaware of the links between human activities and the environment. This study examines the perceptions and attitudes of 234 Greek secondary school students regarding ecological issues arising from human intervention in food webs (an important concept in ecology). The results indicate that students appreciated the opportunity rethink their prevailing anthropocentric ideas about the value of organisms and improve their ecological knowledge. Researchers suggest that designing curricula to explore the basic scientific concepts require both culturally and socially conditioned examination of preconceptions, perceptions and beliefs, as well as the adoption of critical thinking so that students are able to shape their values, beliefs and attitudes toward a more ecologically sustainable worldview.

Communication: Humour Beyond Human: Eco-humour as a Pedagogical Toolkit for Environmental Education by Mohammad Ali Heidari-Shahreza. Eco-humour is explored as a tool used to strengthen and facilitate environmental education and communication. *“Such collaboration, in the long run, may also inform and influence both humour and environmental literacy, offering better ways to ensure a sustainable future with the help of eco-humour; humour that is beyond human and ‘down to earth’?”* This communication comes with suggested sample activities and examples.

Reviews. We accept reviews of any relevant material. This issue includes reviews of two films and two research books. All reviews are conducted by members of the AJEE community. If you would like to review for AJEE please let us know. You can also propose the materials you would like to review.

- **“Education And Climate Change: The Role of Universities” By Suci Indah Putri, Erin Ficrah Huda, and Nadratun Nikmah.**
- **“Environmental and Sustainability Education in Teacher Education: Canadian Perspectives” By Kathryn Riley.**
- **“The End, The Beginning” By John Cripps Clark.**
- **“Bad River: The Cooks River” By Scott Jukes.**

Corrections: As with many publications there are often oversights and mistakes made. AJEE would like to acknowledge two and apologise to our authors. The first is acknowledged with an Erratum for the incorrect order of the manuscripts in Volume 39-Issue 2. We also acknowledge the misspelling of a colleague's name in a reference with a Corrigendum.

AJEE would like to thank authors for their efforts in preparation and development of these manuscripts. We also acknowledge the voluntary efforts of our reviewers as they provide high-quality feedback in short timelines to enable our field to grow and develop through careful support of each manuscript. Finally, I acknowledge the voluntary efforts of our Editorial Executive: nine colleagues proud to enable the production and development of AJEE, a high-quality journal that encourages and supports Australia's environmental education research community and beyond.

AJEE community updates

AJEE Volume 39 has four issues per volume (year) publishing a range of manuscripts as well as several special issues. In Volume 40 (2024) the journal moves to five issues per year. AJEE is one of the oldest and most successful environmental education journals in our field and we recognise our community of engaged researchers, practitioners, teachers, and students. We invite authors to consider publishing your research with us to continue to build AJEE into responsive, high-quality academic journal. We provide quick timelines, high-quality reviews, and lots of support.

AJEE is now publishing Gold Open Access which means that all manuscripts published in AJEE can be viewed and downloaded on-demand and without cost to the reader. Finally, our research is accessible for all with internet access. We anticipate this will increase the citation rates which results in AJEE being a highly effective place to publish research. All Authors are met with an article processing charge (APC) for their manuscripts, although if they are not employed by a university that has an agreement with our publishers (Cambridge University Press — CUP) or if authors do not have funds (grants) to pay the APC **they can apply for a waiver. CUP has guaranteed that all manuscripts will be published and the APC should not be a reason to not proceed with publishing in AJEE.** Please contact the Editor-In-Chief (peta.white@deakin.edu.au) if you have questions.

AJEE has an ongoing and open call for special issue proposals. We are looking for innovative or contemporary ideas that stretch and consolidate our field as one of importance in these challenging times. A successful proposal will provide an invitation that many colleagues can take up to showcase their research and its application in environmental education. <https://www.cambridge.org/core/journals/australian-journal-of-environmental-education> Please forward your ideas or proposal to the Editor-In-Chief (peta.white@deakin.edu.au).

Currently AJEE is developing two special issues that will be released in Volume 40

Relational Ontologies and Multispecies Worlds: Transdisciplinary Possibilities for Environmental Education with Guest Editors: Kathryn Riley, Scott Jukes, and Pauliina Rautio.

Power and Politics: Re-engaging Environmental Education Research Within Critical Environmental Politics Guest Editors: Paul Hart (University of Regina) and Peta J. White (Deakin University).

We encourage you to review Volume 39 — Issue 3 . . . our Special Issue in **Indigenous Philosophy in Environmental Education: Relearning How to Love, Feel, Hear, and Live with Place**. This was launched at the recent Australian Association for Environmental Education Research Symposium — at Wollongong, NSW at the end of September 2023. AJEE would like to congratulate the Guest Editors: Anne Poelina, Yin Paradies, Sandra Wooltorton, Mindy Blaise, Libby Jackson-Barratt, and Laurie Guimond and all authors for their significant contributions. The keynote panel presentation that also involves groups of authors, will be available on the AJEE site asap(<https://www.cambridge.org/core/journals/australian-journal-of-environmental-education>).