

Eco-Play: Designing nature games with Kiwi Conservation club

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ABSTRACT

This research explores how eco-play design within tangible nature games can engage children aged 5-12 in conservation and care for our natural environments. This research is part of a six-year project between design students at Massey University in New Zealand, Aotearoa and “Kiwi Conservation Club (KCC)”, the junior division of the national conservation body, “Forest and Bird”. Design students work in teams to develop conservation-themed games that are play tested through a series of “play days” before being developed into functioning tangible games. Design students¹ have created forty tangible games as open-source projects that KCC chapters throughout New Zealand, Aotearoa, can download, make and play at their meet-ups.

Global scholarly research² indicates a steady decline in childhood outdoor play and engagement. A UK Study revealed that children could better identify Pokémon characters than local flora and fauna (Robinson et al., 2016). The Child and Nature Network (Louv, 2008) coined an umbrella term for these negative impacts: ‘Nature Deficit Disorder’ Louv indicates, “Children today play outside less often, and for briefer periods, they have a more restricted home range and have fewer, less diverse playmates” (34). Increased structured activities, sports, after-school classes, and steady access to digital devices have influenced the decline in nature play.

As we consider how to educate children about environmental responsibility alongside the challenges of climate change, tangible games designed with eco-play at their core can be powerful, pervasive agents in nature advocacy, and can link children directly to the natural world. In this research, I unpack the students’ game designs as case studies to explore the design development process for Eco-play. Three modes of nature-play games defined by Sobel (2008): *Small worlds play*, *Fantasy and imagination* and *Animal allies* are used as design methods to investigate the different modes of play. Specific consideration is given to their capacity for nature awareness, ease of child engagement, gamefulness and playability.

The benefits of nature play

Edith Cobb (1998, 29) argued that “nature for the child is a sheer sensory experience”. Living in cities and practising widespread consumerism means humans see themselves apart from nature; on the other hand, we also have relationships with all living things and can look to enhance these better. Louise Chawla’s extensive 2020 study (“Childhood Nature Connection”) into forming nature connections indicates that a child’s physical and mental well-being benefits from engaging in natural spaces. Children become better socialised, empathetic to other beings, and more likely to think of and take responsibility for the natural well-being of these spaces.

Eco-play is a term used to define a mode of outdoor play that is the focus of this research. It combines the terms eco, meaning ecology or ecosystem, and imaginative play, the fantasy play that occurs when children play with other living organisms. Eco-play is a form of imaginative location-based play where children can play freely in natural spaces as a part of the environment. Many organisations have developed resources to encourage nature play internationally (e.g., Children & Nature Network, North American Association for Environmental Education) and Aotearoa, New Zealand (e.g., Little Kiwis Nature Play). But there is little research on the design of games specifically for nature play. For younger children, Eco-play often takes the form of small-world play (Sobel), where children settle in localised outdoor spaces and play with the natural elements immediately close to hand. These elements and objects are defined as “loose-part” toys (Daly and Beloglovsky, 2014) and comprise or are derived from natural elements themselves, such as sticks and rocks. In New Zealand, where much of our bush³ is in post-colonial regeneration, children are encouraged to look and not touch when out in the bush which makes it challenging to enact eco-play. Nature games designed specifically for play within the bush encourage children to play at “being animals, interacting with animals” (Petersen in Sobel, 32). Imaginative play in nature builds on children’s paracosms, which are elaborate fantasy worlds defined by the child and “serve as vehicles for storytelling and as a way to explore real-life interests” (Taylor et al. 2). Scaffolding the real natural world with fantastical storytelling has enabled the student designers to embody their games with animal perspectives within gameplay.

Designing for nature play.

The design methods draw on a triangulated influence of storytelling, worldbuilding, and product design; Huizinga’s (1949) magic circle is used as a foundational theory to examine the play space and the player’s relationship to the space. Students present a game design proposal at the project’s halfway point, including core play pillars for nature play, which inform the top-level game strategies and open-ended play activities that can be adapted with different players and locations of play. The second half of the class focuses on developing the design with regular playtesting and review sessions with Kiwi Conservation Club children. Playtesting took place in a local park where the “bush” was accessible for hands-on play. The final design results are playable, aesthetically refined games with all rules and instructions and open-source build instructions. Some featured games include - “Be a Bird”, a role-playing game where children play as Tūi birds. In “Heli Habitat helpers” children strategise how to get supplies to wildlife reserves. “Critters in Crisis” is a loose-part game where children create habitats from the natural surroundings, and “Pollution

Revolution”; where children simulate the effects of the dairy industry through a game of rippa rugby⁴.



Figure 1: Be a Bird game (top left), Poolution Revolution (top right), Heli Habitat helpers (bottom left) and Critters in Crisis (bottom right).

CONCLUSION

The research contributes new knowledge to the design process for developing eco-themed games and their impact on child engagement in natural spaces. Explored through a design lens, this paper documents a selection of design trajectories to develop eco-play games. I will share a case study analysis of three student-designed eco-games and the results from playtesting sessions conducted with KCC children. These results discuss eco-play design strategies and the impact of the final designs on nature engagement. Findings indicate eco-play that focuses on imaginative play, anthropomorphic and small world play can encourage environmental awareness.

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ENDNOTES

- ¹ The design students are from Industrial design, Visual Communication design and Concept design, and are in the honours year of their study.
- ² This practice based research was conducted with children from New Zealand Aotearoa, but this research was informed by global scholarly research into nature play and it's benefits.
- ³ In New Zealand our native forests are known as bush. This is usually small to medium sized shrubs and trees that are naturally occurring and often with no discernible path.
- ⁴ This is a popular form of rugby played by children where instead of tackling each other, they pull a flag from their opponents belt.