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Revitalising Ghost Nets: A Fashion Design Approach Using Underutilised Properties of Fish Nets

RUPASINGHE H.G.T.[1]*
[1]*Department of Integrated Design, Faculty of Architecture, University of Moratuwa, Sri Lanka*
thumalrupasinghe@gmail.com

Abstract– *This project addresses the environmental issue caused by ghost nets: abandoned fishing nets, primarily made of nylon, which can take over 800 years to degrade in marine environments. The improper disposal of these nets—whether through intentional discarding or unintentional loss—has significantly contributed to marine pollution, posing a serious threat to aquatic ecosystems. While volunteer efforts occasionally result in the collection of ghost nets, these often end up in landfills, compounding the waste problem. The work presented here focuses on transforming ghost nets into innovative, fashion-forward products, adopting an approach that generates value from waste in the realms of fashion and lifestyle design.*

The project emphasizes upcycling ghost nets into fashionable yet functional products, leveraging fashion design as a vehicle for sustainability. It simultaneously provides job opportunities for the fishing community and reduces marine waste by encouraging and supporting ghost net collection efforts. The tensile wet knot strength, integrity, elongation, and high extensibility of ghost nets are key qualities that this project exploits, transforming an environmental liability into a valuable resource with both aesthetic and functional potential.

Methodologically, the project employs a qualitative research approach, incorporating open-ended interviews with key stakeholders—ghost net collectors, fishermen, and target consumers, particularly eco-conscious foreign tourists. These interviews provide insights into the feasibility and community impact of repurposing ghost nets in fashion. The research process involves three stages: cleaning, experimentation, and manufacturing. Cleaning is conducted initially to remove harmful residues from the nets, ensuring safe handling and supporting their recycling. Experimentation follows, involving tests for strength, transparency, and flexibility to adapt the nets for wearable fashion items. The final stage, manufacturing, translates these findings into the production of high-quality, fashion-oriented products.

The results of this project highlight the untapped potential of ghost nets as raw materials in fashion design. By upcycling these materials, the research successfully created unique and commercially viable products, thereby extending the life cycle of ghost nets and reducing their environmental impact.

Contact: phone +94 719236289
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The designed products are sustainable, support the economic stability of the fishing community, and promote a circular economy by minimizing waste generation and maximizing value creation.

This academic project, conducted in my final year, aligns with global sustainability goals by addressing marine pollution and advocating for ethical material sourcing. It enhances social impact and creates new revenue streams by integrating local fishing communities into the manufacturing chain. The project demonstrates innovative methods to reduce waste while fostering a sustainable fashion industry, particularly in niche markets such as eco-fashion and the hippie segment.

Ultimately, the outcomes of this project underscore the transformative potential of sustainable design, illustrating how fashion can actively contribute to ecological preservation and community development. This work serves as a landmark in recycling discarded materials into productive resources and lays a foundation for future endeavors tackling environmental and social challenges through creative design solutions.

Keywords: *Ghost net, sustainable fashion, marine pollution, upcycling, community empowerment*

Figure 1
The annual collection size of ghost nets.

Figure 2
The overall process of ghost net collection

Note. The figures are sourced from https://pearlprotectors.org/

Figure 3
The final outcome from ghost net waste to empathise the concept of create value from waste

Note. Created by the author

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