



Polystyrene Pollution from Marine Sources

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Vision: a sustainable future for the planet, where biodiversity is effectively conserved by the people who live closest to it, supported by the global community.

- 129 projects in 45 countries
- Work through local partnerships
- Strong capacity building focus



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FFI Marine Plastics



- Marine plastic pollution as biodiversity threat
- Focus on microplastics – microbeads, pellets, microplastic fibres
- Approaches:
 - sensible plastic use
 - evidence-based
 - collaborative (with industry, governments)
 - constructive, solutions-oriented



Foamed polystyrene: the problem



- Commonly recorded in marine litter
- Serious known impact on marine life
- Widely used, due to properties (lightweight, insulating, waterproof, impact resistant, inexpensive)
- Limited spotlight on marine uses



Scoping work

- Looked at the impacts of foamed polystyrene in the marine environment
- Online survey for stakeholders on how they use foamed polystyrene
- Remote interviews with experts and users
- Reviewed literature, legislation, and examples of interventions worldwide



Common uses of foamed polystyrene in marine contexts



- Fish boxes
- Fishing & aquaculture floats
- Buoys
- pontoons
- Bodyboards





Routes to pollution

- Degradation through UV light exposure; wave action; biofouling
- Burrowing by marine isopods or pecking by birds
- Accidental loss or damage, for example gear and vessel interaction
- Deliberate discard, for example when no longer of use



Oyster farms, southern Taiwan



Case Studies: Taiwan



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Case Studies: Hong Kong



Abderdeen Harbour, Hong Kong



Tai O, Lantau Island, Hong Kong





Challenges



- Foamed polystyrene debris is often hard to identify and trace
- It's often too contaminated to recycle
- It's bulky and costly to transport
- Foamed polystyrene marine products are cheap to produce and replace; alternatives can be expensive & may bring indirect negative impacts

BREAKING DOWN OCEAN POLYSTYRENE



BREAKING DOWN OCEAN POLYSTYRENE

JUNE 2020



CONCLUSIONS & RECOMMENDATIONS

From this initial research, it is clear that marine use of foamed polystyrene in aquaculture, fisheries, marinas and the leisure industry presents a considerable pollution risk. Building on this work, we propose the following recommendations for action:

1. Promote the use of appropriate durable, weather-resistant materials for floats, buoys and pontoons, including protective coverings.
2. Improve the care of marine items made from or containing foamed polystyrene to protect them from wear, storm damage and accidental loss, for example through guidelines or training for users.
3. Provide affordable recycling/disposal facilities at ports and harbours to encourage responsible disposal of foamed polystyrene items used at or near the sea.
4. Explore and evaluate the use of alternative, less environmentally damaging, materials for fish boxes; a full life-cycle analysis, including potential to pollute, is needed for any alternatives proposed.
5. Increase the reuse and end-of-life recycling of fish boxes (made of foamed polystyrene or alternative materials), for example through Deposit Return or Extended Producer Responsibility schemes, if appropriate.
6. Increase awareness and share information amongst users and other stakeholders about the impacts of foamed polystyrene pollution.
7. Include information on ocean plastic pollution in existing free environmental safety courses for fishers.
8. Develop a widespread foamed polystyrene recycling industry to encourage more responsible disposal.
9. Evaluate the full life-cycle cost of foamed polystyrene use to increase awareness of the damage it presents when in the environment, and to ensure this is better built into future costings and decision making.
10. Research the possibility of incorporating efforts to detect and tackle discarding of foamed polystyrene at sea into initiatives to address other ocean threats (e.g. illegal fishing).
11. Advocate for the development of clear, time-bound next steps towards practical trials and implementation of the potential interventions identified by intergovernmental and multi-stakeholder processes on foamed polystyrene, such as the HELCOM and OceanWise initiatives.

For further information and additional context, see our [full report](#), or contact:

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Conclusions & Recommendations



- Reduce loss of foamed polystyrene at sea
- Increase awareness & provide training
- Develop recycling infrastructure
- Research approaches & advocate for clear, time-bound next steps

ental loss, foamed polystyrene is usually discarded at sea or on the damaged buoys and fishing polystyrene floats may be thrown into fish boxes, boat support structures abandoned on the shoreline.

Foamed polystyrene can rapidly contribute to plastic pollution that persists for centuries, presenting a risk to marine life. Ingested, foamed polystyrene causes problems such as digestive blockage, a sense of fullness that can reduce feeding and reduced fertility. In agriculture, it is often treated with herbicides, like flame retardants, and can cause damage to plants from the sea around it, posing a local threat it poses to wildlife.

Key findings from the report:
• **ec pollution from the use of foamed polystyrene in the marine environment, a national undertook initial research to determine how foamed polystyrene is used in the UK, the extent of the problem, the risks it poses to the environment, and what measures should be taken to tackle this**



Breaking Down Ocean Polystyrene:
A briefing by Fauna & Flora International, June 2020.

Reports & Contact Information

- FFI website:
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- Breaking down ocean polystyrene full report & briefing available at
<https://www.fauna-flora.org/approaches/science-innovation/tackling-marine-plastic-pollution>



Thank you