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Dear Edward Mountain, MSP, Convenor of the Net Zero, Energy and Transport Committee,

Thank you for the opportunity to give evidence to the Net Zero, Energy and Transport Committee and for your email of 17th November, inviting us to give additional information. I will address the two bullet points in your email.

1. *The Deputy Convener asked if you could provide any information in relation to waste at sea and particularly the issue of plastic pollution from nurdles in coastal areas* (12:03)

LINK members Fidra and Marine Conservation Society work in this area and the following evidence is based on information provided by them.

Waste at sea. As mentioned in the Marine Conservation Society's response to the committee's call for views, their Beachwatch volunteers continue to collect vital data on beach litter across Scotland demonstrating the need to move to a more circular economy to stop litter leaking out of the system into our ocean and impacting marine wildlife and coastal communities.

During 2022 Beachwatch volunteers collected on average 160 litter items per 100m of beach surveyed in Scotland. As a member of the Scottish Government's Marine Litter Strategy Steering Group, Marine Conservation Society have focussed on our data linked to current actions, primarily those around sewage related debris and marine litter in the Scottish Islands.

Sewage related debris according to Beachwatch data is a hotspot issue with high levels found across central belt beaches. Beachwatch Volunteers found and removed 35,055 pieces of Sewage Related Debris (SRD) from the Scottish coastline, averaging 3 items per 100m on those beaches surveyed. However, some regions in the central belt suffer from much higher levels, with SRD reaching 358 items per 100m in Falkirk, 274 items in West Lothian and 88 items in Edinburgh. Working with Scottish Water and SEPA the Marine Conservation Society has also looked at data from overflows to assess the pathways of SRD into the sea and opportunities for intervention.

In 2022 alone of the 3.4% of overflows monitored and reported on, sewage spilled across Scotland over 14,000 times for over 113,000 hours in total. Of the 123 monitored and reported CSOs in Scotland, 20 of these are within one kilometre of a marine protected area and 4 within one kilometre of a bathing water. Monitored CSOs within one kilometre of a marine protected area spilled for a total of 20,595 hours, and those within one kilometre of a bathing water catchment spilled for 634 hours. Many of these spills are caused by blockages in the network by



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incorrectly flushed items like wet wipes which is why a call for more support for reusables as part of a circular economy is so important.

On tackling marine litter impacting island communities the Marine Conservation Society has been working with the Scottish Islands Federation to increase the amount of Beachwatch data collected to help create a more accurate representation of beach litter across Scotland. Analysis so far, has found high levels of fishing and aquaculture gear being found across island beaches versus more public litter like bottles, sewage related debris and packets on mainland beaches. This work will continue to create a robust analysis but it is clear that when moving towards a circular economy we must think about the likely differences in impact on island communities and interventions to improve circularity on different items and sectors.

Marine Conservation Society and others contributed to the development of a Standard on the circularity of fishing and aquaculture gear to help support the work in the Scottish islands and we hope to see Scotland take further action in this area through the Circular Economy Bill and secondary legislation.

If there is further evidence or information the committee would like from the Marine Conservation Society, they would be happy to provide it.

Pellet pollution Scotland is currently one of the largest plastic pellet producers in Europe, with Grangemouth producing one-third of the entire UK plastics productionⁱ. Across the world 390 million tonnes (Mt) of plasticⁱⁱ were produced weighing more than the total weight of the human population. Annually across Europe between 16,888 and 167,431 tonnes of plastic pellets are lost to the environmentⁱⁱⁱ.

This microplastic pollution can consist of virgin pellets and recycled pellets. Chronic spills happen whenever pellets are handled across the whole of the pellet supply chain. Acute maritime spills are becoming more common. The impact on the environment and ecosystems is catastrophic, based on reported estimates alone, the global quantity of pellets lost, since 1995 is in excess of 624 billion pellets from 78 known acute and chronic pollution sites^{Error! Bookmark not defined.}. Once in the environment pellets can take hundreds to thousands of years to degrade. Pellets are mistaken by wildlife for food, leading to organ damage and starvation when ingested, while toxic chemicals and plastics can enter the food chain^{iv,v}.

Pellet pollution has been documented across Scotland's beaches over the last decade by the Global Nurdle Hunt organised by Fidra. Over the last decade 879 nurdle hunts have taken place, 76% of nurdle hunts found pellets across Scotland, with 34% of hunts finding 100 or more nurdles (Figure 1). Coastal communities across the Firth of Forth, have been significantly impacted by pellet pollution^{vi}. For example, the community of Gullane meet monthly and clean pellets but the site continues to have prevalent pellet pollution with nurdles regularly being deposited on tidelines regardless of efforts. This year a lower number of nurdle hunts found nurdles across Scotland, many of these hunts took place in remote locations in the North and Northwest of Scotland (Figure 2). This has reaffirmed that there are pellet pollution hotspots, the most evident being the Firth of Forth – [see our volunteer case study for more details](#). Over the last 10 years Scottish nurdle data has been collected by 1958 volunteers, demonstrating this is an issue the people of Scotland care about.

The Global Plastic Pellet Supply Chain report commissioned by Fidra in 2023 clearly identified Scotland as a hotspot for chronic pollutionⁱⁱⁱ. With the scale of pellets being produced and transported in and out of Scotland a



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maritime disaster is waiting to happen such as happened in Brittany earlier this year^{vii}. Globally there have been 4 acute pellets spills this year alone^{iii,viii}. Pellet loss to the environment is estimated as high as 445,970 tonnes per year globallyⁱⁱⁱ.

Scotland has led the way through the development of PAS 510^{ix} the first standard that addresses pellet pollution effectively. There is a need for this to become the basis of a legislated and independently audited supply chain approach seeking to prevent further pellet loss. Prevention measures could reduce plastic pellet loss by 95%ⁱ, but current efforts to address this major source of microplastic pollution have been voluntary, of limited scope and insufficient to address the issue. The evidence from the OCS voluntary scheme is that this approach is weak, has had limited take up and is not third party audited and therefore not fit for purpose.

There is a need for Scotland to continue to lobby for the IMO to classify pellets as hazardous goods which will help ensure containers of pellets are stored with greater care and below deck which will minimise the risk of an environmental catastrophe from a maritime accident, which given the scale of pellets moved through the Firth of the Forth is a significant risk concern.^x

The EU recently proposed draft legislation on pellets^{xi} which needs strengthening to include chronic loss by smaller actors but is nevertheless a step in the right direction. If Scotland and the wider UK do not adopt stringent legislation for managing pellets it becomes yet another example of divergence from the EU and a weakening of environmental protections.

Cleaning up of pellet pollution is extremely difficult once it is in the environment, prevention is the best course of action. Once in the environment (unless there is a significant reported spill) it is impossible to know who the polluter is, making the polluter pay principle impossible to enforce. Virgin pellets are pre-production pellets and have not yet been made into products, hence they cannot be classed as litter. Councils do not have the resources to clean up the heavily polluted beaches and SEPA cannot call polluters to account. There are therefore beaches in Scotland with acute pellet pollution (legacy and current) that are just left causing widespread environmental damage. It is not acceptable that this pollution is falling between the cracks in Scotland and industry should be held to account, perhaps through a supply chain fund dedicated to clean up.



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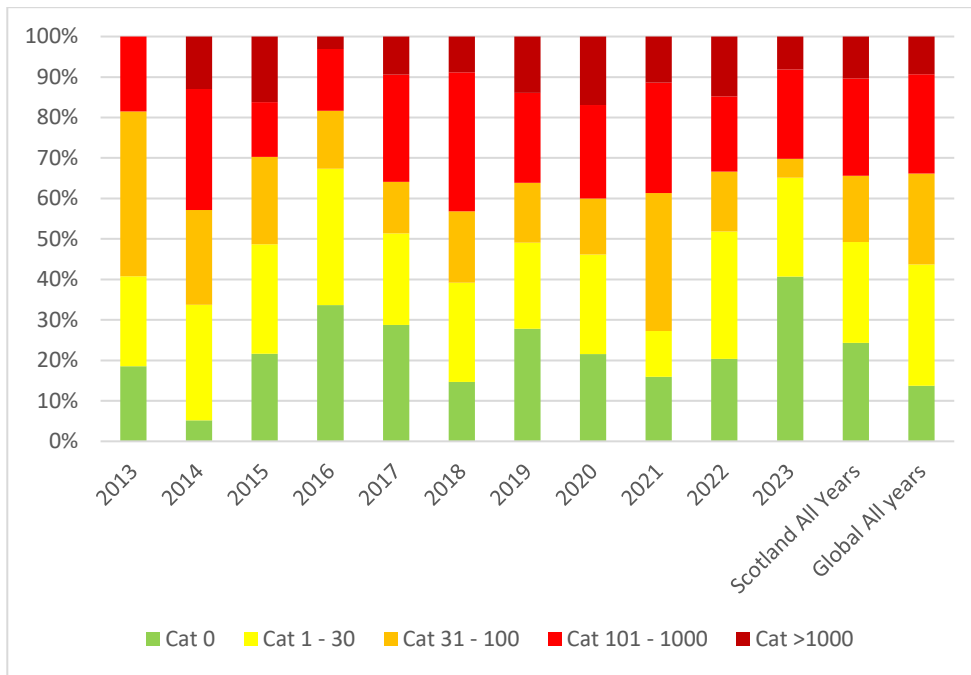


Figure 1. Proportion of hunts each year that found nurdles. Where categories represent number of nurdles found during a hunt: Cat 0 represents no nurdles found; Cat 1 – 30 represents 1 – 30 nurdles found, Cat 101 -1000 represents 101 to 1000 nurdles found and; Cat >1000 represents nurdle hunts which found more than 1000 nurdles.

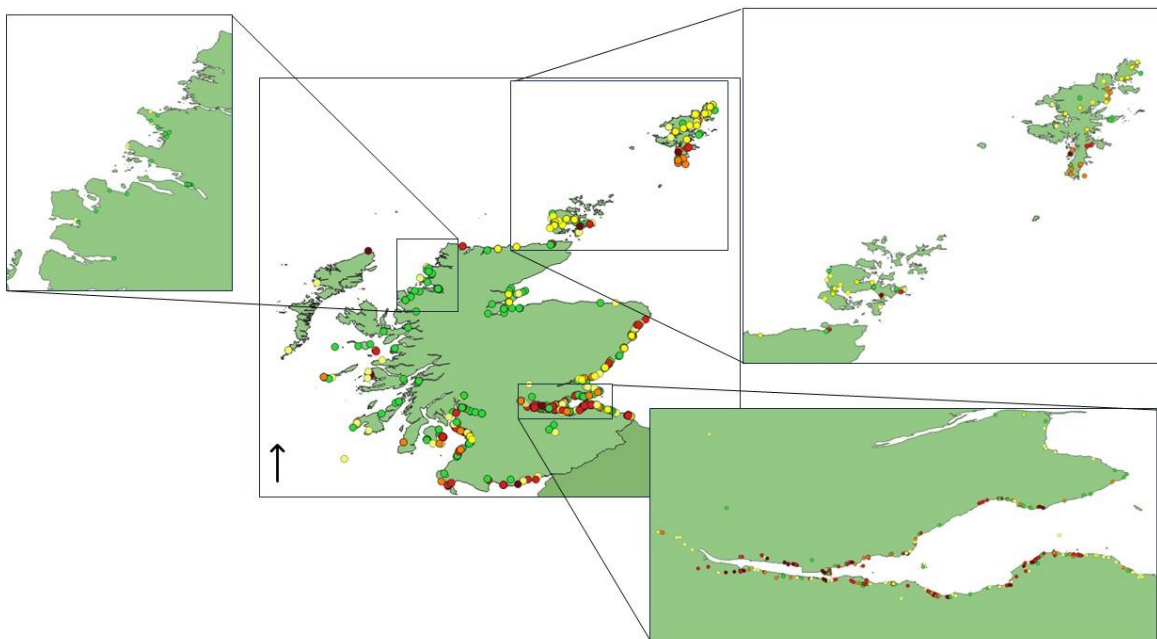


Figure 2. A map of Scotland Nurdle Hunt Data between 2013-2023. Insert maps (Left – right): North Highlands; Orkney and Shetland Islands; and Firth of Forth. Where, no nurdles found is represented in green, 1-30 nurdles found is represented in yellow, 31-100 nurdles found is represented in orange, 101-1000 nurdles found is represented in red and greater than 1000 nurdles is represented in dark red.



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2. The Convener asked if there was anything else not in the Bill as introduced that you think would be helpful for the Committee to consider as part of its scrutiny (12:04).

LINK included a number of ideas for additional measures we would like to see in the Bill in our written evidence, and I will not repeat here what we have already submitted to the Committee. I will concentrate on where additional evidence has come to light or where I can link some of these measures to questions asked by the Committee at our evidence session.

In our written evidence submitted we pointed out the unequivocal importance of soils and their health to a circular economy. Just as the wind and sun are central to our energy system, soil (from which all renewable materials are derived) is central to our material systems. The key difference being our soils need looking after. In July of this year, the EU proposed a new Soil Monitoring Law to protect and restore soils and ensure they are used sustainably, noting that healthy soils are essential for achieving climate neutrality and a circular economy^{xii}. LINK members propose that the CE bill contains measures to ensure our soils are healthy; or, at a minimum, includes a clause that acknowledges their importance and obliques minister to legislate elsewhere; the Agricultural Bill being an obvious alternative.

Our member, RSPB Scotland, has recently published a report^{xiii} which further highlights the importance of addressing food waste. There are increasing demands on our land for climate mitigation, food and fibre production, and biodiversity. The report shows that we can get to net zero, but that it involves big changes in land use and that results in a reduction in agricultural output. The report found that the resultant gap between agricultural production and requirements (assuming we don't just import) can be dealt with but it requires a systems change approach, one element of which is a large reduction in food waste. The importance of tackling food waste is key; also acknowledged in the pledge made by Mairi Gougon, Cabinet Secretary for Rural Affairs, Land Reform and Islands^{xiv}. This should be a priority and warrants a statutory food waste reduction target which should be included in the Bill. Also vital, is read across to the Agricultural Bill and Good Food Nation Plans which need to be referenced in the CE Bill.

A duty on all public bodies, including local bodies, to proactively further the CE in their jurisdictions and report on progress. Local bodies such as Enterprise agencies and Local Authorities, are very important given their potential roles in facilitating connectivity to develop circular supply chains and infrastructure/ planning models for circular supply loops – both areas of concern raised in the recent Science Advisory Council report on bioresource flows^{xv}.

Lastly, there were two questions from Committee members during the evidence session about what the Bill could do to, first, drive a change in business models more generally (Deputy Convener) and, second, facilitate increased uptake of the use of reusable nappies (Monica Lennon MSP). I would like to add some thoughts on how a number of measures (some already proposed for the bill and some which could be added) could work together to encourage businesses to adopt more circular operations.

- The targets, to reduce overall consumption of raw materials (especially harmful / carbon intensive) and the obligation to produce a strategy and sector plans to deliver those targets, is the overall framework which should drive the policy to lead to the change that is needed. This will take time.
- As mentioned a number of times in the meeting, Extended Producer schemes (EPR), can be a very effective way of driving change, especially if the fees are adequately modulated; but they take a long time to set up



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(Defra leading on reform of packaging EPR for whole of UK – first consultation in 2019, roll out expected from 2024).

- In the shorter term, additional measures that are / could be included in the bill, could start making a difference:
 - ❖ Measures such as the ban on destroying unsold goods, combined with requirement to report on waste and surplus, have the potential to nudge business practice to one favouring goods that retain their value.
 - ❖ If this was supplemented by a ‘take-back’ requirement, that nudge would be stronger.
 - ❖ A duty on all public bodies, including LAs, Enterprise Agencies; to support enterprises and organisations in their jurisdictions to contribute to the reduction in raw material consumption and to report on this, could play an important role.
 - ❖ The Code of Practice (for LAs) on reuse and recycling developed and statutory, with a strong emphasis on the reuse could elevate and mainstream reuse.
 - ❖ Requirements for businesses/ organisations to report on their Scope 3 emissions, which will require them to look at their supply chain emissions and those associated with end of life for their products, will drive change to more circular models.
 - ❖ Reduced business rates for ‘circular enterprises’ could provide another incentive and is the type of fiscal lever that Scottish Government needs to explore to meet climate and nature goals^{xvi}.

Together, these requirements have the potential to steer the mainstream to more circular models.

If you require any further information, or have any queries arising from the above, please do get in touch.

Yours sincerely,

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- ⁱⁱ Plastics Europe. (2022). Plastics – the facts 2022. Available at: <https://plasticseurope.org/knowledge-hub/plastics-the-facts-2022/> [Accessed on 29/07/23]
- ⁱⁱⁱ Oracle Environmental Experts. (2023). Mapping the global plastic pellet supply chain. Pg 77. Available at: <https://hub.nurdlehunt.org/resource/oe-mapping-the-global-plastic-pellet-supply-chain-report-only/>
- ^{iv} Charlton-Howard, H. S., Bond, A. L., Rivers-Auty, J., & Lavers, J. L. (2023). ‘Plasticosis’: Characterising macro- and microplastic-associated fibrosis in seabird tissues. *Journal of Hazardous Materials*, 450, 131090. <https://doi.org/10.1016/j.jhazmat.2023.131090>
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- ^{vi} The Sunday Post. (2023). Special report: Deluge of tiny plastic pellets pollute Scots coast. The Sunday Post. 26/02/23. Available at :<https://www.sundaypost.com/fp/war-on-nurdles-special-report-deluge-of-tiny-plastic-pellets-pollutes-scots-coast/>
- ^{vii} The Maritime Executive (2023). French Authorities Hunt for Source of Plastic Pellet Spill. Available at : <https://maritime-executive.com/article/french-authorities-hunt-for-source-of-plastic-pellet-spill>
- ^{viii} Maryland Matters (2023). Spill of plastic pellets in Maryland reveals the polluting potential of ‘nurdles’. Maryland Matters. 01/11/23. Available at: <https://www.marylandmatters.org/2023/11/01/spill-of-plastic-pellets-in-maryland-reveals-the-polluting-potential-of-nurdles/>
- ^{ix} BSI. (2021). PAS 510:2021. Plastic pellets, flakes and powders. Handling and management throughout the supply chain to prevent their leakage to the environment. Available at: <https://www.bsigroup.com/en-GB/standards/pas-5102021/>
- ^x Details of this proposed solution and others can be found at Fidra’s <https://hub.nurdlehunt.org/>
- ^{xi} European Commission. (2023, October 16). The commission proposes measures to reduce microplastic pollution from plastic pellets. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_23_4984
- ^{xii} https://environment.ec.europa.eu/topics/soil-and-land/soil-health_en
- ^{xiii} [Spatially targeted nature-based solutions can mitigate climate change and nature loss but require a systems approach - ScienceDirect](https://www.sciencedirect.com/science/article/abs/pii/S0924646023000000) Scottish blog: [We need to talk about how we reach Net Zero - Scottish Nature Notes - Our work - The RSPB Community](https://www.scottishnature.org.uk/news/we-need-to-talk-about-how-we-reach-net-zero-scottish-nature-notes-our-work-the-rspb-community)
- ^{xiv} https://www.fao.org/docs/foodlosswastelibraries/default-document-library/food-security---signed-fao-pledge.pdf?sfvrsn=21c7adf2_0
- ^{xv} <https://scottishscience.org.uk/sites/default/files/article-attachments/SSAC%20Report%20-%20Towards%20a%20Circular%20Economy%20-%20Scotlands%20Bioresource%20Flows.pdf>
- ^{xvi} https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf page

57



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