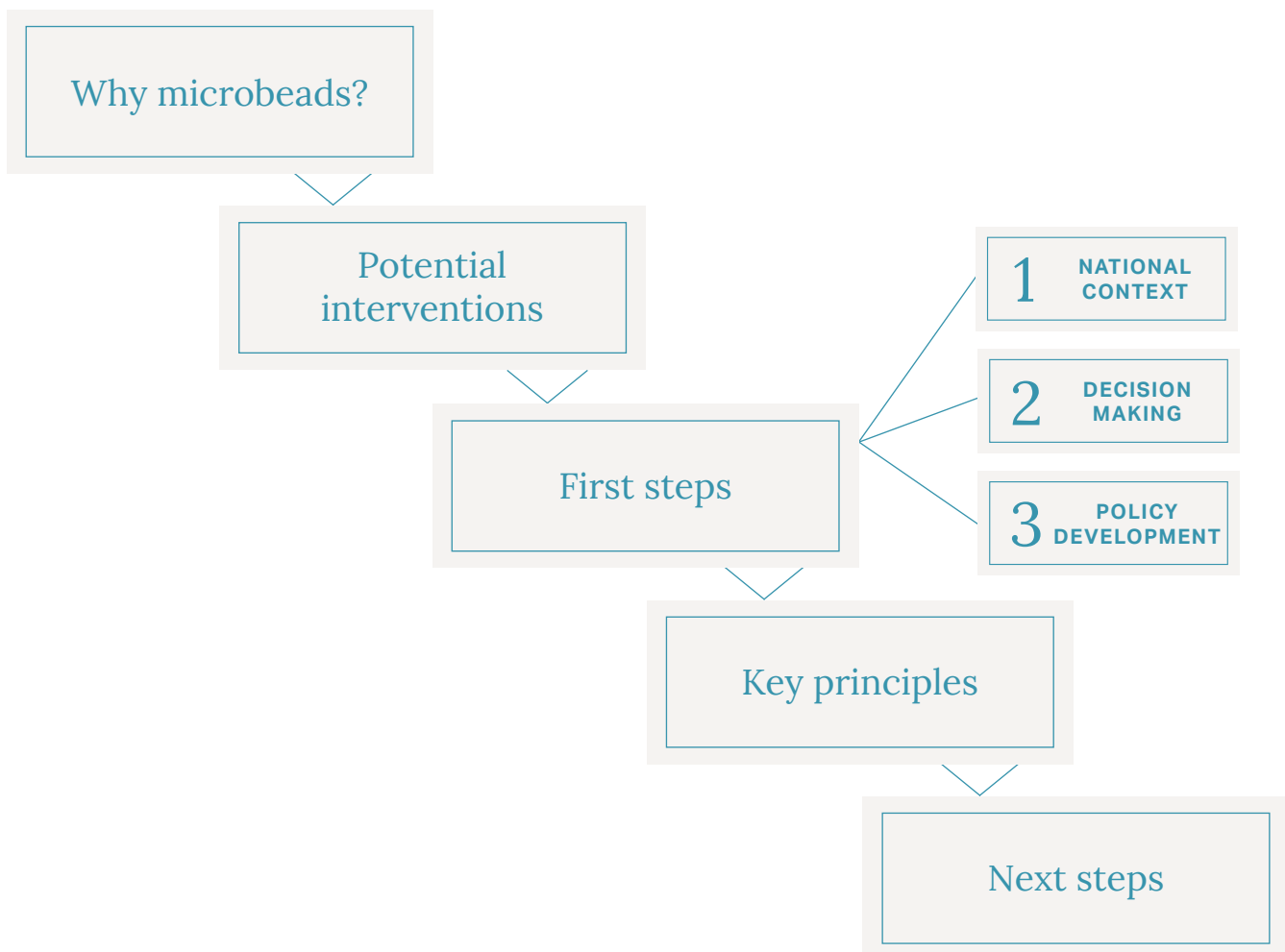




Developing and implementing bans on microbeads: A guide for policymakers

This guide has been developed by Fauna & Flora International to provide technical support to the UK Department for Environment, Fisheries and Rural Affairs (Defra) and the Commonwealth Clean Oceans Alliance¹ in **sharing guidance on microbeads bans with interested government agencies from other countries.**

The included guidelines are based mostly on knowledge and experience that Fauna & Flora International has **gained in the process of supporting the development of the UK microbeads ban**, a process that took approximately two years.



WHY MICROBEADS?

'Microbeads' is **the common name for all microplastic ingredients**² added to products such as cosmetics, toiletries and cleaning products, including face scrubs, toothpastes, shaving products and floor cleaners.

These plastic ingredients are 'microplastics' because they are less than 5 mm in size. When washed down the drain during routine use (e.g. brushing teeth), microplastic ingredients flow through wastewater treatment, where they are not effectively removed, and can therefore **directly reach rivers and the ocean**³.

It is estimated that globally 35 thousand tonnes of microplastic ingredients from personal care and cosmetic products reach the ocean every year⁴.

The problems with microplastic pollution arise from:

1) **the huge number** of individual microplastics that reach the ocean, 2) **the toxic chemicals** that they can leach⁵ and concentrate⁶, including research demonstrating that microplastics can have concentrations of toxic contaminants on them over one million times higher than surrounding seawater⁷, and 3) their **extremely small size, enabling them to be easily and frequently eaten** by a vast number of commercially and biologically important species^{8,9}. Microplastics in fish found in coastal environments have specifically been traced back to microplastic ingredients from toiletries¹⁰.



Credit: Minnesota Pollution Control Agency

Research has shown that **eating microplastics can have serious impacts on marine life**¹¹, including starvation, internal injuries, toxic chemical accumulation¹², toxic chemical transfer from prey to predator¹³ (with potential impacts on humans), and reduced feeding, growth and reproduction. Microplastic ingestion poses even greater threats to the health of marine ecosystems due to their potential to introduce hazardous substances into food chains. Microplastics persist in the environment for hundreds of years¹⁴, and there is currently **no means to clean them up once in the sea**. As such, the focus must be on preventing them from reaching the environment.

POTENTIAL INTERVENTIONS TO STOP MICROBEAD POLLUTION

Microplastic ingredient use is a direct and **avoidable source of ocean plastic pollution**, as plastic ingredients in toiletries can readily be replaced with natural alternatives¹⁵.

Therefore pollution from microplastic ingredients is a **manageable problem, with precedents for voluntary¹⁶ and regulatory¹⁷ action across the world**, including bans in the US, South Korea, the UK, Canada and New Zealand, as well as a voluntary removal formally encouraged by the Australian Government.



Credit: Roger Ingler/FFI

Many multinational companies (e.g. Unilever¹⁸, Procter & Gamble¹⁹ and Colgate-Palmolive²⁰) have already committed to removing microplastic ingredients from their products, even though there is **limited consistency among different company commitments**²¹.

Voluntary industry-led commitments have the advantage of relatively faster response times, but they are sometimes insufficient²¹, and are often **just a useful first step towards equal requirements for all products**²² achieved through legislation – ensuring that companies taking responsible action are not undermined by those that do not.

The steps to address microplastic ingredient pollution, outlined in this guide, provide a **starting point for any policymaker interested in designing measures to address this important source of plastic pollution**. Additional in-depth guidelines and recommendations are also available in Fauna & Flora International's Microbeads Guidance Document²³.



First steps to action

2. UNDERSTAND THE NATIONAL CONTEXT FOR MICROBEAD USE

Gathering information about the scale of the problem

It is important to understand the relative scale of microplastic ingredient use in the country, and therefore **which specific industries, federations and corporations will be affected** by any voluntary or regulatory measures.

In some cases data may have already been collected, for example through the international Beat the Microbead campaign²⁴ or by local researchers. If not, there are **quick ways to gather these data**. For example, many brands will be multinational and may have already made global or regional commitments with regard to removing microplastic ingredients.

This information is generally publicly available on their global websites¹⁸ and in their corporate social responsibility (CSR) reports. Smaller and national companies may be less likely to have such information readily available.

If there is not existing data on microplastic ingredient use, options include **commissioning a quick in-shop or online status survey, or asking industry** about microplastic ingredient use as part of a consultation survey on the issue²⁵. This information also provides an important baseline for future monitoring of implementation.

What microplastic ingredients to look for?

Existing evidence has demonstrated that there are six main types of microplastic that may be found in ingredient lists²⁶: **polyethylene (PE), polypropylene (PP), polyethylene terephthalate (PET), polymethyl methacrylate (PMMA), polytetrafluoroethylene (PTFE) and nylon (N)**.

Additional ingredients of concern can be found in Appendix 4 of Fauna & Flora International's Microbeads Guidance Document²⁷.

In addition, we are now seeing use of so-called 'biodegradable' plastics such as polylactic acid (PLA)²⁸. This is particularly concerning because scientific evidence suggests that biodegradable plastics behave in the same way as conventional plastics in the ocean²⁹. They do not fully degrade in the cold and dark conditions of the ocean and therefore **any biodegradable plastics should be subject to the same action as other types of plastic**.

What products might contain microplastic ingredients?

Microplastic ingredients are **used in many cosmetics and personal care products**, including but not limited to: bath products (such as children's bubble bath), toothpastes, soaps, face scrubs, face masks, body exfoliators (including hand, foot and lip scrubs), shaving products, deodorants, fake tan, makeup (e.g. eyeshadow, foundation, lipstick, mascara), **household cleaning products** (e.g. abrasive floor cleaner), and industrial hand cleaners³⁰. They are **also found in products from other industry sectors** (e.g. non-slip paints)³¹.

Are there alternatives to microplastic ingredients?

There are **many microplastic ingredient-free product options** using non-plastic (natural) alternatives, such as nut shells or sea salt; examples are available in our Good Scrub Guide¹⁵. Companies around the world have also readily reformulated their products to remove microplastic ingredients when bans have been announced. Collecting information on microplastic ingredient-free brands during any scoping also provides an important baseline and examples of ways in which to avoid plastic ingredient use¹⁶.

No natural alternatives pose such a serious threat to the ocean compared to the risk of microplastics persisting in the ocean for hundreds of years and introducing hazardous substances into food chains³².

What has already been done by industry?

In addition to identifying voluntary commitments already made by companies, or relevant recommendations by industry trade associations to remove microplastic ingredients, **it is also important to assess the effectiveness of corporate microplastic ingredient policies**.

For example, evaluations of voluntary actions on microplastic ingredients have already been conducted by NGOs in the UK³³ and South Korea³⁴. This has revealed that **some voluntary commitments may have potential loopholes**³⁴, in which case robust regulation is more effective.





2. DECISION MAKING

What types of measures to consider?

To date, **the majority of countries that have introduced measures to address plastic pollution from microbead use have chosen to impose national legislative bans**. Examples include the US³⁵, Canada³⁶, the UK³⁷, South Korea³⁸, and New Zealand³⁹. At the same time, some other countries, such as Australia, have adopted a different approach – before introducing a legal ban, the Australian Government gave industry a two-year deadline to demonstrate that voluntary action is fully addressing the issue or risk facing legislative regulation at the end of the two-year period⁴⁰.

While cosmetic brands across the world have taken initiative and started replacing microplastic ingredients with natural alternatives as early as 2015, it is important that **policymakers review the scope and progress of the voluntary microplastics phase out process at a national level before deciding whether to rely on voluntary regulation measures or introduce a ban**⁴¹. The assessment of voluntary commitments described in the scoping stage above would provide the necessary evidence to enable this decision to be made.

What do other stakeholders think about the proposed measures?

Understanding any **concerns or recommendations from key stakeholders** (e.g. industry, NGOs, scientists, civil society) regarding measures to end microplastic ingredient use during the policy development process could help ensure effectiveness of regulatory action after enforcement. In some countries, well-established procedures for consulting stakeholders on policy proposals may already be incorporated in the policy development process⁴².

The following **examples of opportunities for stakeholder feedback** on the development of the UK microbeads ban could provide useful suggestions for policymakers in other countries:

- Launching an open public consultation on the proposed policy – example from the UK microbeads ban development process⁴³;
- Conducting a business impact assessment – example from the UK microbeads ban development process⁴⁴;
- Conducting additional targeted stakeholder engagement if needed;
- Considering the need to notify the European Union (if applicable) or the World Trade Organisation if your proposed policy is a legislative ban – examples from the UK microbeads ban development process^{45,46};
- Publishing the final definitions, incorporating any revisions following stakeholder responses to the initial proposals, and allowing for any final comments or objections to be made before introducing the policy – example from the UK microbeads ban development process⁴⁷.

Incorporating microbeads bans into existing legislation

It is important to consider where a microbeads ban best fits into the country's existing environmental legislation. Firstly, it is helpful for efficient implementation of the ban for it to be **placed within existing legislation where it logically fits and is enforced by a body that has relevant expertise.**

Secondly, existing primary legislation may already give government the power to introduce a microbeads ban by subordinate or secondary legislation. If this is possible, **it might save both time and money** in implementing the ban.

If a new piece of **stand-alone legislation** is required, this **could provide more control** over designing a bespoke scope and implementation system for the ban, **but it may demand a more time-consuming and resource-intensive process.**

In the majority of countries where microbead bans have been introduced, these bans have been incorporated into existing legislation, either **by amendment or subordinate legislation for example:**

- In the US the "Microbead-Free Waters Act of 2015" was used to amend the existing "Federal Food, Drug, and Cosmetic Act" passed in 1938.
- In the UK, subordinate legislation was passed on the basis of powers in environmental protection laws – the "Environmental Protection (Microbeads) (England) Regulations 2017" statutory instrument was built into the "Environmental Protection Act 1990".
- The Canadian Government also chose to use existing environmental legislation and added microbeads to the Canadian "List of Toxic Substances" under the "Canadian Environmental Protection Act, 1999", which was followed by the introduction of the "Microbeads in Toiletries Regulations" under the "Canadian Environmental Protection Act, 1999".
- In New Zealand, the government used waste legislation and the "Waste Minimisation (Microbeads) Regulations 2017" were made under the "Waste Minimisation Act 2008".



3. POLICY DEVELOPMENT

Drafting microbeads ban proposals

During the drafting stage of a microbeads policy, the following **key topics** would be important to consider:

- **Addressing the manufacture, import and sale** of microplastic ingredient containing products as separate processes and justifying any need to split the ban into phases with **appropriate timeframes** – for example, starting with a ban on manufacture and import and allowing time for the phase out old stock products before the ban on sale comes into force, if considered necessary;
- Preparing and including evidence-based **justifications for the proposed scope, definitions and deadlines**, based on findings from the information gathering step described above;
- In any federal or devolution-based system, assessing whether the competence for the legislation lies at national or state level, with a view to **ensuring maximum coverage and consistency**;
- Outlining the **enforcement mechanisms**, such as sanctions, that are going to be used;
- Identifying **which body will have responsibility for enforcement or monitoring** (it will be more cost-effective to use an existing body that has a similar current set of responsibilities);
- **Providing guidance** on how to safely dispose of banned products and avoid their transition to other countries' markets.

Preparing for implementation and monitoring

To ensure effectiveness of any ban, there must be clear, unambiguous definitions³³ and additional guidance on interpretation of the scope of the ban⁴⁸. Additional key considerations could include:

- **Giving industry and brands sufficient warning** regarding the introduction of national microbeads phase out measures;
- **Clarifying the deadlines** for ending the manufacture and sale of products containing microbeads;
- Identifying appropriate **consequences for non-compliance** and making these very clear to companies;
- Identifying the appropriate body for monitoring and enforcing implementation and providing **guidance or training on interpretation of the scope of the measures**;
- Assessing **capacity and resources needed for the effective enforcement** of the measures and investing in the monitoring and implementation process.

What does an effective ban look like?

Policy measures to end microplastic ingredient use would only be as good as the definitions of 'microbeads' and products included in the proposals. The **principles and criteria for robust microplastic ingredient use measures** included in this guide will help policymakers design definitions that ensure a comprehensive and effective policy. Additional guidance on definitions and potential loopholes is also available in Fauna & Flora International's Microbeads Guidance Document²³.

If ambiguous or incomplete definitions introduce potential loopholes³³, the policy would fail to fully address the issue of pollution from use of microplastic ingredients in consumer products and may quickly become outdated. **Potential loopholes could also create the risk of exacerbating the plastic pollution problem** by allowing the use of false alternatives, such as so-called biodegradable plastics⁴⁹.



PRINCIPLES AND CRITERIA FOR ROBUST MICROBEADS POLICIES

The following principles have been developed by Fauna & Flora International to help policymakers when considering ending the sale, manufacture or import of microplastic ingredients (and/or products containing them) in order to prevent plastic pollution.

PRINCIPLE:	RATIONALE:
<p>1. Restriction of all microplastic ingredients</p>	<p>Any plastic that reaches the environment can become marine litter. Many different plastic polymers are used as microplastic ingredients in consumer and industrial products.</p> <p>Only the use of the term “all microplastic ingredients” to describe what is being removed in a corporate commitment or being banned in a piece of legislation is adequate.</p> <p>Bans should not be limited to specific polymers.</p>
<p>2. Application to all ‘down the drain’ products</p>	<p>Any product containing microplastic ingredients that is disposed of (either by design or reasonably foreseeable use) down a drain, or directly into the marine environment (e.g. sunscreen), poses an environmental risk.</p> <p>Thus the corporate commitment or piece of legislation must be applicable to “all ‘down the drain’ products”.</p>
<p>3. No exemption for non-marine-tested synthetic solid ingredients</p>	<p>Encouraging the use of “biodegradability” as a solution to marine plastic litter has consistently been viewed with caution by the scientific community.</p> <p>There are no known synthetic replacements for microplastic ingredients that have been conclusively demonstrated to fully biodegrade in marine environmental conditions.</p> <p>In restricting or removing microplastic ingredients, policymakers and companies should not encourage the introduction of solid, water-insoluble synthetic materials that have not been shown to fully biodegrade in realistic marine environmental conditions (including cold water and darkness).</p> <p>Thus any microbeads ban should also cover any so-called ‘biodegradable plastics’, unless specifically demonstrated to completely degrade under realistic marine conditions, in a short timeframe and against internationally recognised marine biodegradability criteria for plastics (of which there are currently none).</p>
<p>4. No exemption for plastic ingredients below a certain size</p>	<p>Any plastic particle of a size less than 5 mm is a microplastic. No exemptions should be made for microplastic ingredients below a certain size.</p> <p>Indeed, some of the most concerning research findings regarding impacts on marine life arise from nano-sized plastic particles.</p>
<p>5. Implementation within an ambitious timeframe</p>	<p>Several multinational brands have set implementation timelines for microplastic ingredient phase-out commitments of two years from the date of announcement. This is also the timeframe of the US and UK microbeads bans. It therefore seems reasonable that this become the standard timeframe for either legislation to be enacted or company commitments to be fully implemented.</p>



NEXT STEPS FOLLOWING THE INTRODUCTION OF MICROBEADS BANS

The experience gained from the work described in this guide towards ending pollution from microplastic ingredient use can be **further applied to prevent other sources of marine plastic pollution** as a useful next step. The approach of encouraging replacement of plastic with **readily available non-plastic alternatives** and/or introducing bans on plastic options must also be applied to some **single-use plastics that are non-essential**, such as plastic cutlery, stirrers and straws.

More **complex plastic pollution sources**, such as plastic pellets (microplastics spilt and discarded by companies in the making of plastic products) or single-use plastic food and drink packaging, **may require the use of a more diverse set of policy measures** including but not limited to:

- Certification schemes (e.g. to address the loss of plastic pellets throughout the plastic supply chain);
- Deposit return schemes (e.g. to prevent pollution from plastic drinks bottles by improving recapture and recycling rates);
- Extended producer responsibility systems (e.g. to address problematic plastics such as black or coloured plastics);
- Fiscal measures such as taxes and charges on producers, consumers and/or retailers as appropriate, which can be a precursor to a ban (e.g. to reduce the use and pollution from single-use plastic items with readily available reusable alternatives, such as single-use coffee cups).

Policymakers need to design a **strategy that incorporates appropriate measures to tackle all known sources of ocean plastic pollution**. It could also be useful to consider establishing an **expert advisory committee** on plastic pollution to provide impartial recommendations regarding:

- The categorisation of different types of plastic items and uses (e.g. essential vs. unnecessary) in order to design appropriate measures on a case by case basis;
- Appropriate target dates for ending pollution from different sources;
- The critical assessment of specific measures and interventions.

All of these potential next steps would benefit from **cooperation with other countries and international bodies** who have already made commitments to address plastic pollution (e.g. Commonwealth Clean Oceans Alliance¹, G7 Ocean Plastics Charter⁵⁰ signees, UN Marine Litter and Microplastics Resolution⁵¹ signees, G20 Action Plan on Marine Litter⁵² signees, etc.), as well as with companies and civil society organisations working towards shared solutions.



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