



To Our New Subscribers

Thank you to our new subscribers and welcome to the fourth issue of the ARM quarterly newsletter! We hope to make this publication valuable to you with several brief articles that provide unique insights, some ideas about how to address specific problems and introduce potential risks that may not yet be on your radar.

The primary authors are Dave Ingram and Max Rudolph. In this issue we return David Ensor as a guest author. We are all active participants in the risk management, actuarial, investment and insurance spaces, and have been for many years.

Subscribers can suggest topics for articles and ask questions of the authors during our follow-up webinars and discussion sessions. Ever cognizant of regulatory requirements, leveraging them to add value to your company in practical ways, will be our focus.

Published by Actuarial Risk Management (ARM), the Strategic and Risk Solutions for Executives (SRSE) subscription consists of two paid tiers. The newsletter is free to all.

A webcast is available at either the company or individual level, as well as a follow-up one-on-one discussion with the newsletter authors that extends the general webcast. More info can be found at the final page of this newsletter.

We hope you find a solution that works for you!

For more details
Visit actrisk.com

or

Contact Marc Altschull
maltschull@actrisk.com

We hope you will join us on our journey!

**Sign-up to receive future newsletters automatically at
<https://www.surveymonkey.com/r/AMRSRSE>**



Microplastics

Microplastics are defined as pieces of plastic smaller than 0.2 inches. They are pollutants and found nearly everywhere. The highest mountains, deepest ocean trenches, dust and living things, including humans, have all tested positive for microplastics. Studies are ongoing to determine the ramifications, but early results show this risk will need ongoing monitoring and likely has negative implications for both the environment and human health.

Fossil fuels are the primary building component to make plastics. Plastic bottles are a big source of microplastics as they break down with exposure to sun and movement in water. Others include clothing fibers (each washing releases microplastics), tires (regular wear and tear, artificial turf fields), cosmetics (microbeads, used as exfoliates) and plastic pellets (nurdles, used as input for molds).

A recent report noted that a large portion of the great Pacific garbage dump consisted of remnants of fishing nets.

Plastics break down very slowly, over periods of centuries. When present in water they can be ingested, and when in soil they become part of the food that we and other organisms eat. A similar risk is brought by PFAS and other “forever chemicals,” such as those found in Teflon, that



break down slowly and permanently accumulate in the environment and living things.

The microplastics risk is slow moving but inevitable if we don't act to reduce it. The oceans are big but there is likely a tipping point, possibly tied to the amount of carbon in the ocean and carbon ecosystems (called blue carbon). More microplastics is likely bad at all levels, but eventually reaches a point where it moves up the priority list. This could be when food security is impacted or studies reveal a morbidity impact for humans.

Did you know that a Tier 2 subscription enables everyone at your company to participate in a webinar covering the same topics as you are reading about in this newsletter?

2 **NEXT PAGE**



Microplastics (cont'd)

As children learn, all drains (and runoff, streams and rivers) lead to the ocean so that is where microplastics end up too. All sorts of marine life are negatively impacted, either by direct interaction (e.g., birds get tangled in plastic or whales get their flippers caught on fishing nets) or by ingestion (throughout the food chain, starting with plankton and working up to whales and humans). Eventually microplastics make it to the bottom of the sea, polluting marine life and the sea bed in shallow seas and deep trenches while interacting with currents to form garbage patches below the surface.

Certain types of life forms may be more susceptible to microplastics, including those that filter ocean water for food. Plastic mulching, a farm practice that places plastic sheets over fields to conserve water and warm soils, initially increases crop yields but if the sheets are not collected post harvest become a pollutant in the soil as they are torn apart and break down. This reduces yields as the pollutants build up.

The United Nations has developed 17 sustainable development goals, with a majority at least indirectly impacted by plastics and #14 Life Below Water specifically including initiatives based on plastic pollution. Microplastics can also be thought of as a threat multiplier, making many other risks worse. For example, if the population's base health is reduced by pollutants they become more susceptible to

other diseases.

There are many problems to address, many of which seem too big to quickly solve. They include

- Filtering microplastics from oceans, soils and fresh water.
- Reducing the amount of plastics and microplastics that enter the environment through recycling or reduced single use packaging.
- Better recycling processes (include more forms of plastic, better efficiency)
- Studies of all living things, including humans, to determine the impact of microplastics

Why is this important to insurers? As an emerging risk with likely implications to health as microplastics build up in the food chain and in our bodies, this risk could quickly emerge, a term called velocity, and become systemic around food security. For a disability or long term care policy this could be similar to fears about long COVID, where the infectious disease has health implications long after the initial bout of illness.

A polluted planet is not a stable planet, and the insurance and longevity products we work on need a stable environment to be priced sustainably. Without stability, the law of large numbers fails and the insurance industry becomes unsustainable.

Sign-up to receive future newsletters automatically at
<https://www.surveymonkey.com/r/AMRSRSE>