

Summary of session ITS2.8/OS4.10

Plastic in the marine environment: observing and explaining where it comes from and where it goes Co-organized by BG4

Convener: Stefanie Rynders ECS | Co-conveners: Yevgeny Aksenov, H.G. Orr, Ilka Peeken, Anna Rubio Displays: Wed, 06 May, 08:30–10:15 (CEST)

The session was a great success: 154 people participated in the session, with 25 submissions and 19 displays presented.

After last year's single session, this year's EGU Assembly continued with a number of different sessions on plastics. Topics included plastics in the freshwater and marine environments and in soil, and also addressed marine pollutants in general.

Displays and discussion

We had a variety of presentations on physical models, mostly of the open ocean, but also of the land/ocean connection, one model now includes sea ice.

Several presentations showed experiments on plastic degradation: in the surf zone, under natural light, usage of the chemicals.

Other processes affecting the plastic distribution being investigated were the influence of wind and waves on surface drift and biofouling

There were also a few new observational data sets presented.

Our open discussion was introduced by Fiona Tovey, working for the UK Environment Agency for England, who gave us a regulator perspective. She stressed the need for scientific research to be able to evaluate harm done by plastic pollution. If risks are understood and evidenced, precautionary measures can be taken in a way that is legally defensible and acceptable to the general public.

It was noticed that there currently is a divide between people researching plastics distribution and those studying the effects on organisms and ecosystems.

For regulatory interventions it is necessary to be able to do a comprehensive evaluations of both sources and pathways as well as receptors and impact to assess the risks. Potential impacts range from organisms and ecosystems to the human population and greenhouse gas emissions.

We touched on the subject: how to connect different components of the climate system within the Earth system plastic cycle?

We discussed nature-based solutions: e.g., sea grass, water hyacinths, this could be related to large scale restoration projects.

Discussion around impact, insert statement of Fiona

Possible topics to carry forward

How to link models and observations?

Connecting physical models to biogeochemistry: 4 groups reported they are working on this, however, there were no presentations at this EGU yet. There are a range of different physical and biogeochemistry models in use, and some common questions regarding parameterisations for different processes, like sedimentation and biofouling, are now emerging.

This year EGU coincided with another large (on-line) conference with a plastics focus. We need to communicate with other conferences happening at the same time on their plans and try to co-organise next year.