



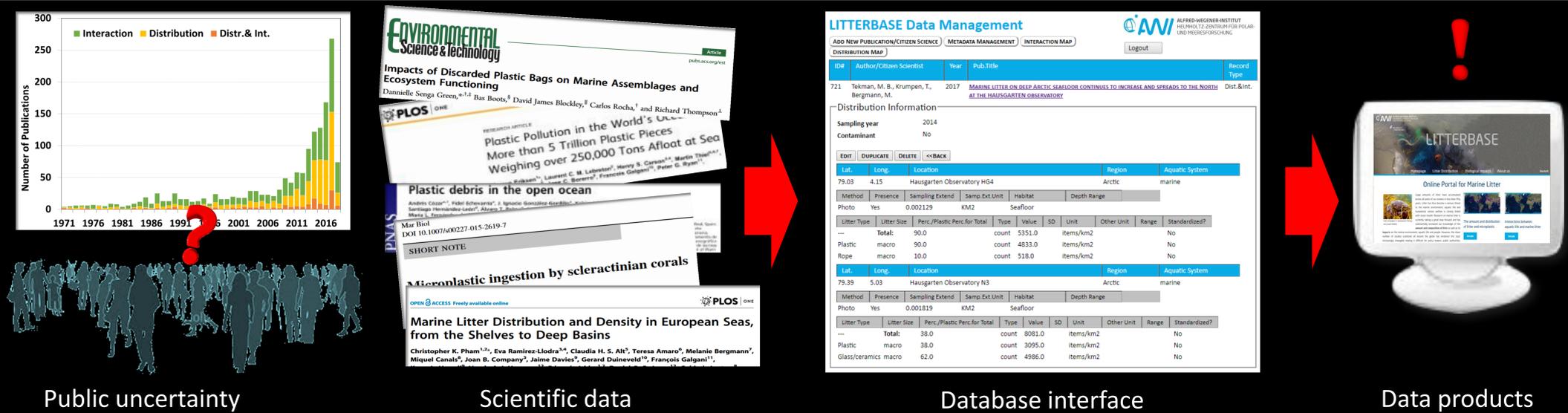
LITTERBASE

Online Portal for Marine Litter & Microplastics and their Implications for Marine Life

<http://litterbase.org>

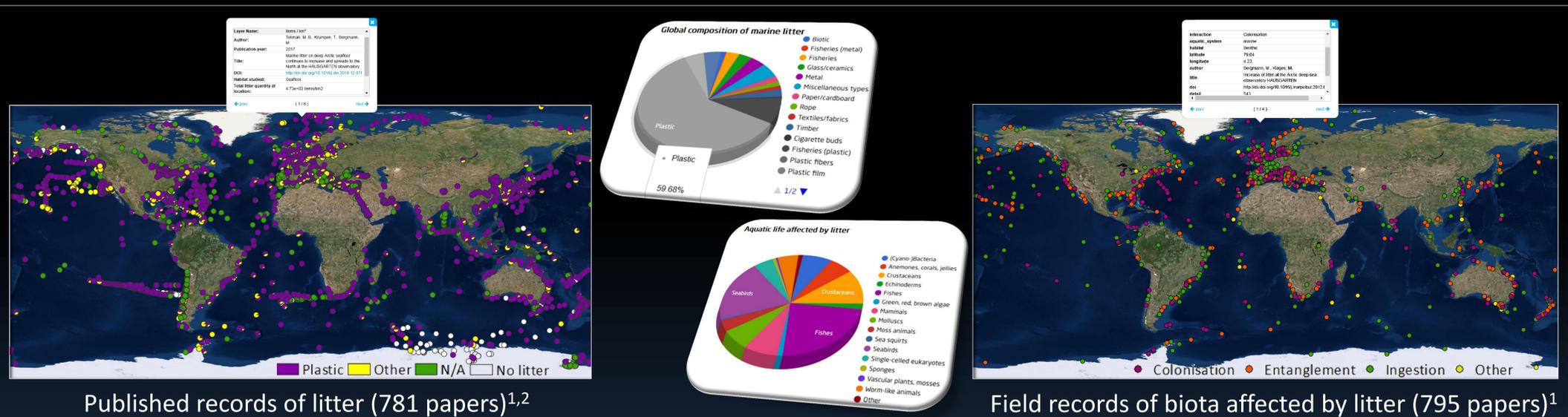
Background

The fast progress in marine litter research scattered all over the world has made this topic increasingly intangible to laymen, who cannot extract urgently required information. Moreover, many questions remain unanswered: for example, it is still unclear how much litter is in the oceans, where it accumulates and how it affects marine life. To open scientific knowledge to stakeholders we extracted data from publications and devised a portal to display it in easily understandable and continuously updated information products.



Methods

A scientific database with many-to-many relationships (PostgreSQL 9.5.) was designed to allow standardization and analysis of marine litter data. Suitable peer-reviewed publications were identified and grouped according to their focus on either litter distribution or interaction between litter and biota. The position of each study location was stored separately so that as many details as possible could be displayed in the front-end maps. Information such as litter type, size, litter quantity unit, aquatic system, biome, interaction type and effect were defined as metadata categories and extracted.



Outcome

All of the world's oceans contain litter (6034 locations, 781 publications, 3/2018) with most information coming from studies on beaches (381) and the sea surface (203). However, LITTERBASE identified oceanic regions and habitats which are still poorly investigated: large stretches of the open ocean (51 studies) and the seafloor (194). LITTERBASE generated the first global image of the composition of marine litter with plastics accounting for 73% of all debris. This pollution affects 1,427 taxa through entanglement (26%), ingestion (34%) and colonization (35%). Most of these are benthic (37%), pelagic (24%) or inhabit the sea surface (17%) and beaches (14%). Large debris accounts for for 72% of the interactions.

In one year LITTERBASE had >22,700 users in 80,000 page views, mostly from Germany, The Netherlands and USA. Google Analytics found >36,000 linkages. The data were used in a schoolbook, by public authorities and projects.

(1) Data as of 08.03.2018
(2) To improve the visibility of the sampling locations, fixed size points were used here. For original representation please check litterbase.org/litter