



US news

● This article is more than 4 years old

## Coastal species are forming colonies on plastic trash in the ocean, study finds

Termed “neopelagic communities”, these colonies are thriving in the Great Pacific Garbage Patch and going where the current flows

[Plastic rafting: the species hitching a ride on ocean litter](#)

**Adrienne Matei**

Fri 10 Dec 2021 06:00 GMT

 Prefer the Guardian on Google

Masses of ocean plastic are providing artificial habitat for otherwise coastal species, according to a new study published in the peer-reviewed journal, Nature Communications.

The study’s authors observed floating water bottles, old toothbrushes and matted fishing nets. The possibility exists that [species may be evolving](#) to better adapt to life on plastic.

A decade ago, marine researchers believed coastal organisms, which evolved to live along sheltered shorelines, could not survive a trip across the inhospitable open ocean. Yet Japan’s 2011 tsunami, which sent some 300 species of Asian marine life riding durable and buoyant plastic garbage onto North American shores, disproved that assumption.

Now, researchers have a term for these drifters: “neopelagic communities”, seafaring colonies of anemones, brittle stars, shrimp, barnacles and more, which are thriving on plastic in the Great Pacific Garbage Patch and washing up wherever the currents take them.

Ocean plastic is “creating opportunities for coastal species’ biogeography to greatly expand beyond what we previously thought was possible”, Linsey Haram, a research associate at the Smithsonian Environmental Research Center and coauthor of the study, said in a [release](#).

The concept of organism-encrusted plastic may sound like the story of ocean species triumphing in spite of human folly. But that’s not quite the case, explains Juan José Alava, PhD, an expert in marine ecotoxicology and conservation at the University of British Columbia.

In addition to transporting non-native species to delicate habitats where they may become invasive and destructive, neopelagic communities are “basically an ecological trap” says Alava. That’s because the sheer density of plastic in the ocean (researchers expect 600m metric tons of garbage will collect in the ocean by 2040) leads to the creation of permanent floating structures, covered in small species that attract creatures higher up the food chain, such as fish, turtles and mammals. When these creatures enter garbage gyres seeking shelter and food, they run a high risk of eating and/or becoming caught in plastic and dying. “For example, often the calves of whales, they are very curious - but that curiosity could lead them to get entangled and die,” says Alava.

While scientists have found some types of bacteria are able to break down hydrocarbons in plastic, thereby cleaning up garbage, it's unlikely that the types of filter-feeding invertebrates thriving in neipelagic communities will have any such effect.

"The 2021 UN report after Cop26 was clear that the scale of rapidly increasing plastic pollution is putting the health of all the world's oceans and seas at risk," says Alava.

### Our annual appeal to defend press freedom

16,378 of 60,000 acts of support

#### An incredible self-own

In 1936, John Scott, son of the late Guardian owner and legendary editor CP Scott, did something unheard of for a media heir: he gave up his stake for the greater good.

After inheriting the newspaper, Scott renounced all financial benefit - bar his salary - in the Guardian (worth £1m at the time and around £62m today) and passed ownership over to the newly formed Scott Trust. The Trust would evolve to have one key mission: to secure the financial and editorial independence of the Guardian in perpetuity.

That means the Guardian can't be bought. Not by private equity, not by a conglomerate, and definitely not by a billionaire looking for a political mouthpiece. So here are three good reasons to make the choice to support us today.

1. Our quality, investigative journalism is a scrutinising force at a time when the rich and powerful are getting away with more and more.
2. We are independent and have no billionaire owner controlling what we do, so your money directly powers our reporting.
3. It doesn't cost much, and takes less time than it took to read this message.

Our independence means we can say what we want, report on who we want, challenge who we want, and stand up at a time when others are sitting down. For our annual campaign focusing on the indispensable role of independent journalism in democracy **we have an ambitious goal: 60,000 reader contributions over the next three weeks. Can you help us hit it? Defend the free press. Support us now.**

Continue → Remind me in June   

### Related stories

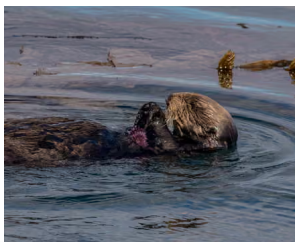
'There has to be glitter': can the Rio carnival give up its love of beach-polluting microplastics?

19 Feb 2026



Save our seas: five ways to rewild and conserve the ocean

6 Jun 2024



Atlantic Ocean circulation nearing 'devastating' tipping point, study finds

10 Feb 2024



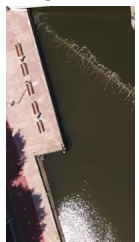
Our plastic ocean: infinite waste in boundless seas - in pictures

8 Dec 2022



Incredibly plastic from bubble barrier

5 Aug 2022



### More from News

**Iran**  
Nobel laureate's smuggled memoir details beatings and neglect in Iranian prisons

3h ago

**Europe live**  
First plane carrying passengers evacuated from hantavirus-hit cruise ship leaves Tenerife

20m ago

**Russia**  
Vladimir Putin suggests Ukraine war is 'coming to an end'

2h ago

**Africa**  
Cape Verde bets on tech to reverse postcolonial brain drain

7h ago

**US-Israel war**  
Iran threaten Middle East come under

7h ago