

Seascape: the state of our oceans Invasive species

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Thousands of tons of invasive seaweed 'overwhelming' Spanish beaches

Alga from east Asia is major threat to biodiversity, say experts as they warn of environmental catastrophe



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Stephen Burgen *in Barcelona*

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Thousands of tonnes of an aggressive invasive seaweed from east Asia are piling up on the beaches of the strait of [Gibraltar](#) and Spain's southern coast in what local environmentalists say is a major threat to the region's biodiversity.

Since May, the local authority in Cádiz has removed 1,200 tonnes of the alga *Rugulopteryx okamuræ* from La Caleta, the city's most popular beach, including 78 tonnes in a single day.

"We're completely overwhelmed. This is an environmental catastrophe," said José Carlos Teruel, responsible for Cádiz city council's beaches. "Whenever the wind is westerly, we know we're in for another wave of seaweed."

As with many other invasive marine species, one of the ways the alga is thought to arrive is in the ballast tanks of ships that pass through the Suez canal and then discharge their tanks in the Mediterranean.

In little more than a decade the species has colonised the strait of Gibraltar, much of Spain's southern coast, the Canary Islands, the Azores, and, farther north, the Cantabrian sea and the Basque Country.

"It was first spotted 10 years ago in Ceuta, Spain's north African enclave, by a researcher from Málaga university, but the authorities are always too slow to react," said Juan José Vergara, a professor of biology at the University of Cádiz.

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The seaweed is having a major impact on the local economy, firstly on tourism in Cádiz and nearby Tarifa, a town popular with windsurfers, and on fishing because it traps fishers' nets and lines and also sucks oxygen out of the water. Then there's the cost to the taxpayer of disposing of it.

Perhaps most worrying is its impact on biodiversity. On the beach at La Caleta, the seaweed has driven out many indigenous plants. It is unclear whether the damage is temporary or irreversible.

The alga attaches itself to rocks and other surfaces and is also free-floating, wiping out native species of seaweed. It has no predators in the region and its capacity to reproduce both sexually and asexually and to absorb toxins makes it virtually impossible to eradicate, experts say.

At present the seaweed is dumped in landfill sites. Vergara said a local business that recycles seaweed into drink containers or to use as fuel and fertiliser has sought permission to use *Rulopteryx okamurae* as a biomass to produce energy.

However, Spain's law on invasive species prohibits their commercial exploitation unless they pose a threat to health and safety or to further their eradication, a caveat that would seem to apply to *Rulopteryx okamurae*.

This week the government in Andalucía launched a four-part plan to confront the crisis based on research, monitoring and education, and which includes options for recycling the seaweed.

To use it as biomass the regional government will have to negotiate with Spain's environment ministry but Vergara said that even if an agreement is reached, it can only be part of the solution.

"It's an interesting idea but I doubt it will be able to eradicate or even significantly diminish the intensity of the invasion when hundreds of thousands of tonnes can wash up on a single beach," he said.

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