# Scientists pioneer seagrass restoration to revive Malaga’s marine ecosystems



A pioneering scientific initiative is currently taking place at a municipal greenhouse in Torre de Benagalbón, located in Rincón de la Victoria on the eastern Costa del Sol. This project, which has its roots in Carboneras, Almería—approximately 250 kilometres away at the Holcim cement factory’s port—aims to restore and enhance the vital marine ecosystems of the Mediterranean.

The project focuses on the cultivation of *Cymodocea nodosa*, a seagrass species that once thrived along the Malaga coastline but has significantly declined due to various anthropogenic impacts. Over 150 samples of this seagrass have been collected and are being studied in six saltwater tanks designed to replicate its natural habitat. The growth and health of the specimens are being closely monitored by a team of coastal science technicians: Esther Delgado Salas, Laura Pardo Canales, and Marta Domínguez Maqueda.

Elena Bañares España, a lecturer in botany and plant physiology at the Costa del Sol Chair of Coastal Sciences and the principal investigator of the project, shared insights into the threats facing *Cymodocea nodosa*. She identified factors such as nutrient overloading and reduced light penetration, both of which hinder the photosynthesis process essential for the seagrass’s survival. Additionally, the invasive Asian algae species, *Rugulopteryx okamurae*, exacerbates the problem by altering the flora in affected areas and replacing native marine organisms. Bañares noted the implications this has not just for marine biodiversity but also for fishing, stating, "On many occasions, when the nets are thrown out, instead of fish, what the boats collect is tons of Asian algae."

The primary objective of the project is to reintroduce *Cymodocea nodosa* initially in a controlled setting at El Cantal, located between La Cala del Moral and Rincón de la Victoria. Following initial successes, the plan is to expand the seagrass’s range across the Costa del Sol. Francisco Franco Duro, a professor in the department of inorganic chemistry, crystallography, and mineralogy, emphasised the ecological significance of this restoration effort, explaining that the decline of seagrass directly impacts local biodiversity.

*Why* Cymodocea nodosa*?* Franco highlighted its stability compared to other native species like *Posidonia oceanica*. This property makes it pivotal for establishing a systematic recovery strategy, as the presence of *Cymodocea* can facilitate the eventual return of *Posidonia*, which can enhance sandy habitats and mitigate storm impacts.

Franco further elaborated on the environmental benefits of seagrass ecosystems, noting that marine phanerogam forests enhance water quality through oxygenation and sediment retention, resulting in clearer waters and increased biodiversity. This initiative aligns with efforts promoted by the local council, including plans for creating an artificial reef at El Cantal, deemed an ideal habitat for the thriving of *Cymodocea nodosa*. Sergio Díaz, the councillor for beaches, asserted that environmentally beneficial projects also carry economic potential, stating, "We must collaborate with the sea if we want to continue to enjoy it."

Gustavo Calero, director of Sustainable Development and Innovation at the public water company Hidralia, underscored the project’s significance, remarking, "This project shows how a water company is able to contribute to the improvement of nature. We are funding talent, an investment that has a great impact."

As the initiative progresses, experts and local leaders remain optimistic about the potential for restoring crucial marine ecosystems along the Malaga province coastline.

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

1. <https://www.mdpi.com/2073-4441/13/16/2306> - This study reports the rapid spread of the invasive brown alga *Rugulopteryx okamurae* in the Mediterranean Sea, highlighting its impact on native marine ecosystems and its potential to clog fishing nets, corroborating the article's mention of this invasive species affecting marine biodiversity and fishing activities.
2. <https://www.mdpi.com/2076-3921/13/11/1298> - This research investigates the bioactive compounds in *Rugulopteryx okamurae*, noting its antioxidant properties and potential applications, which aligns with the article's discussion on the invasive species' impact on marine biodiversity and fishing.
3. <https://www.mdpi.com/1424-2818/16/7/424> - This paper documents the first record of *Rugulopteryx okamurae* along the eastern coast of Sicily, Italy, and discusses its rapid expansion and potential to alter marine ecosystems, supporting the article's mention of this invasive species affecting marine biodiversity and fishing.
4. <https://www.mdpi.com/1424-2818/15/12/1206> - This study examines the spatial distribution and potential impact of drifted thalli of *Rugulopteryx okamurae* in the northern Strait of Gibraltar and the Alboran Sea, highlighting its effects on marine ecosystems, which corroborates the article's mention of this invasive species affecting marine biodiversity and fishing.
5. <https://www.mdpi.com/35092932/> - This research investigates the impact of *Rugulopteryx okamurae* on shallow-water marine benthic communities in the Azores, documenting significant changes in community structure, which supports the article's mention of this invasive species affecting marine biodiversity and fishing.
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