

Tropical fish breeding to improve as result of new collaboration

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The lagoon tank at The Deep, one of the participating aquariums. Credit: Bangor University

Pioneering new techniques will enable leading aquarium visitor attractions to breed their own tropical fish, following a new collaboration.

The larvae of many tropical [fish species](#) are so small, that they are invisible to the naked eye, and their food source is even more microscopic. This makes captive breeding of these fish challenging.

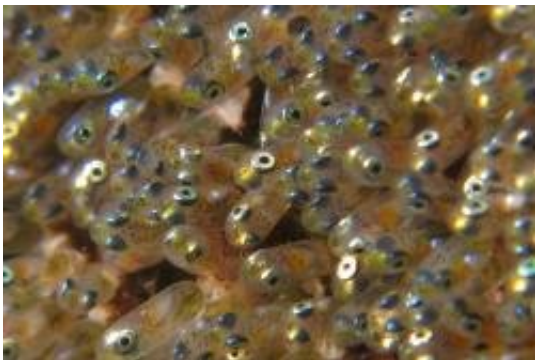
But aquaculture experts at Bangor University believe that they can help the aquarium industry to develop techniques to rear their own coral [reef](#) fish from captive larvae.

The Zoological Society of London (ZSL), The Deep and SEA LIFE, three of the UK's leading aquariums are working with Bangor University's School of Ocean Sciences to develop ways of breeding and farming coral reef fish. This collaboration is part-funded by the European Regional Development Fund through the Welsh Government's SMARTExpertise programme.

Concern over the sustainability of wild collection is the driver for the aquarium sector to search for sustainable alternatives in order to reduce the ecological impact of the trade on the world's coral reefs.

Brian Zimmerman, Chief Curator at ZSL, explained their position:

"We no longer purchase wild collected reef fishes; our fish are either bred on site or purchased captive bred elsewhere. There are recent efforts to try and supply an increasing number of captive bred species and the list of those available gets longer every year. However, the techniques for breeding marine fishes are complex and different for every species. Progress in mastering new species is slow and takes considerable investment to achieve marketable numbers reliably. Conversely, however, demand is high as aquariums start to question the sustainability of their stock acquisitions more carefully and to seek out captive bred fish for display."



The young of tropical fish species amphiprion. Credit: Bangor University

The new [project](#), SustainNable Aquariums Project (SNAP) aims to increase the number and diversity of sustainably and ethically produced coral reef fish species for the [aquarium](#) community, and improve the global sustainability of the trade in coral reef fish.

An initial 20 tropical reef species, popular in aquariums but which have not yet been successfully captive-bred are the initial focus of the project. These include species of butterflyfish, rabbitfish, wrasse and tangs.

Working hand in hand with the aquariums, who will supply the larvae, the scientists will develop new or improved hatchery production techniques, and technology and extend biological knowledge.

If successful, the project could lead to the first commercial hatchery for these species in Europe, based in Wales, supplying aquariums and hobbyists across the continent.

As Tom Galley, part of the research team at Bangor University explained:

"Fish developed in hatcheries are widely recognised as having advantages over their wild collected counterparts, such as being pre-adapted to life in captivity. However, for this to become a reality a significant amount of work is required."



Setting up an egg collector in The Deep's Lagoon of Light exhibit. Credit: Nick Jones

Nick Jones, from Bangor University, also part of the research team on the project explained:

"The difficulty in rearing the majority of coral reef fish lies in the small size of their delicate larvae, a poor understanding of appropriate larval rearing environments, plus the lack of suitably sized and nutritious larval food items. These are issues we hope to resolve during the three year project."

Jean-Denis Hibbitt, Breeding and Positive Change Programmes Coordinator at SEA LIFE's Conservation, Welfare and Engagement Department said:

"SEA LIFE works to ensure that all our animals come from ethical and traceable sources. Many of our animals come from our global breeding programmes as well the rehoming of animals that cannot care for themselves. Those animals that do come from external suppliers must pass through our stringent supplier accreditation process. However, the live trade of reef fish, particularly for the ornamental hobbyist market is a large industry and its future sustainability is uncertain. We are already

working in this area, however, this project is set to make a significant impact by providing us and others with sustainably reared specimens."

Graham Hill, Head of Animal Care and Research at Hull's The Deep said:

"It is crucial that zoos, aquariums and academics pursue pioneering work to advance our understanding of marine fish species. This collaborative breeding project brings together our collective expertise to develop the necessary skills and techniques to push marine fish breeding and rearing forward. The project will have a direct impact on developing a better understanding of the breeding cycles of commonly kept species in aquariums, and has the potential to reduce the removal of animals from wild populations and establish a scientifically based foundation for a more sustainable industry."

Provided by Bangor University

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