The bottom half of this image is dominated by the pink and orange-flecked branches and polyps of a section of coral. Up close, it looks as though its shadowy, bumpy form is reaching towards the top of the frame.

Several hundred egg/sperm packages have been released from the coral's branches. Against the stark, black background, they appear as tiny dots that catch the light, slowly floating to the surface of the water, like a living lava lamp.

This image wasn't taken in the tropics, or even in any of the world's seas or oceans. It was captured in a spawning lab, in Sevenoaks, Kent, UK. On the predicted day, the coral was placed in a dedicated photography tank to capture the release of its precious life-giving egg/sperm packages.

My name is Dr Jamie Craggs, and I'm co-founder of the Coral Spawning Lab, where we focus on coral reproduction, and use spawning events like the one pictured to produce new generations of coral to restore damaged coral reefs.

We work with partners all around the world, with much of our research concentrating on climate change and what this will mean for the future of coral reefs. We reproduce corals in specific aquariums, that we have designed to replicate all the seasonal environmental conditions, such as temperature, day length and lunar cycles, which we know stimulate the corals to reproduce.

We build these aquariums in the UK and have sent to project partners in places as far afield as the Maldives, the Caribbean, and the Middle East.

Corals are animals that are made up of individual units called polyps. These polyps combine to form the coral colony. There are over 1,500 coral species and these grow in a variety of growth forms, from plates, boulders, or branching colonies.

Acropora, the coral in this image, is a branching form, made of multiple branches about two-to-three inches long. Covering these branches are hundreds of individual polyps. Most corals are hermaphrodites, meaning they produce both eggs and sperm in the same individual.

They reproduce over a few nights each year, within very small windows of time. This spawning window is determined by several environmental conditions, including seasonal temperature, day length, sunset time and the lunar cycle. In our labs we replicate these conditions, to stimulate the corals to reproduce. During these reproductive events pale pink or orange egg/sperm packages are released from each polyp and float up to the surface.

We collect these packages and transfer them to the lab, where we perform in vitro fertilisation. The resulting delicate embryos are then grown on to produce new coral babies.

As spawning can last just 20-30 minutes, understanding when this is going to happen is critical to allow cameras to be set up, the lighting to be right and capturing the moment of the eggs and sperm being released. This was captured using a Canon EOS R5 – supplied by Canon as the Coral Spawning Lab's official imaging solutions supplier.

But why?

Coral reefs are the most biologically diverse habitat in our oceans and despite covering less than 0.1% of the ocean floor, over a third of all marine species reside on coral reefs, so they're teaming with life.

Added to this biological diversity, they also support half a billion people on the planet through the resources they provide. Due to the diversity of animals that live on reefs they're an important source of protein to fishing communities, often in developing nations.

The growth patterns that corals create builds the three-dimensional structure of the reef, which is very efficient at diffusing wave energy, preventing coastal erosion and flooding during tropical storms. In addition, reefs provide an increasingly important source of income for developing nations from the tourism and diving industry.

When combined, these ecosystem services contribute 1 trillion US dollars to the global economy, so not only are coral reefs important due to their species richness but they're also important from a human perspective.

Despite its significance, coral is under immense pressure.

We are losing coral reefs at an alarming rate. In the past thirty years, it's estimated that 50 per cent of the world's reefs have experienced some form of negative impact. And these impacts can be because of local pressures, such as overfishing or pollution, or broader global challenges associated with climate change.

With future climate change predictions, many people around the world are increasingly concerned about the impact this will have on reefs and the potential loss of biological richness and the negative impact to the human population who rely on them.

We therefore urgently need to repair these ailing reefs through active restoration to give these important ocean habitats a flourishing future.

Understanding the plight reefs are facing around the world has resulted in our work at the Coral Spawning Lab focusing on coral reproduction.

Over the past decade, we've developed pioneering techniques to reproduce corals in laboratory settings. During these reproductive events the eggs and sperm are collected, and through in vitro fertilisation, a new generation of coral is produced.

These juvenile corals can be grown out and planted onto damaged reefs, in much the same way as reforesting happens on the land. Our passion is sharing this knowledge and training as many local communities as possible in these techniques, so that rebuilding of coral reefs can occur at a faster rate.

Our goal is to enable and equip every practitioner, coral reef manager and restorer with the capabilities to spawn coral in land-based facilities. By producing the next generation of corals, we want damaged coral reefs to be repaired at scales that will make a meaningful difference for the future of our oceans, and our planet.