



Do you know the name of the fish pictured above?

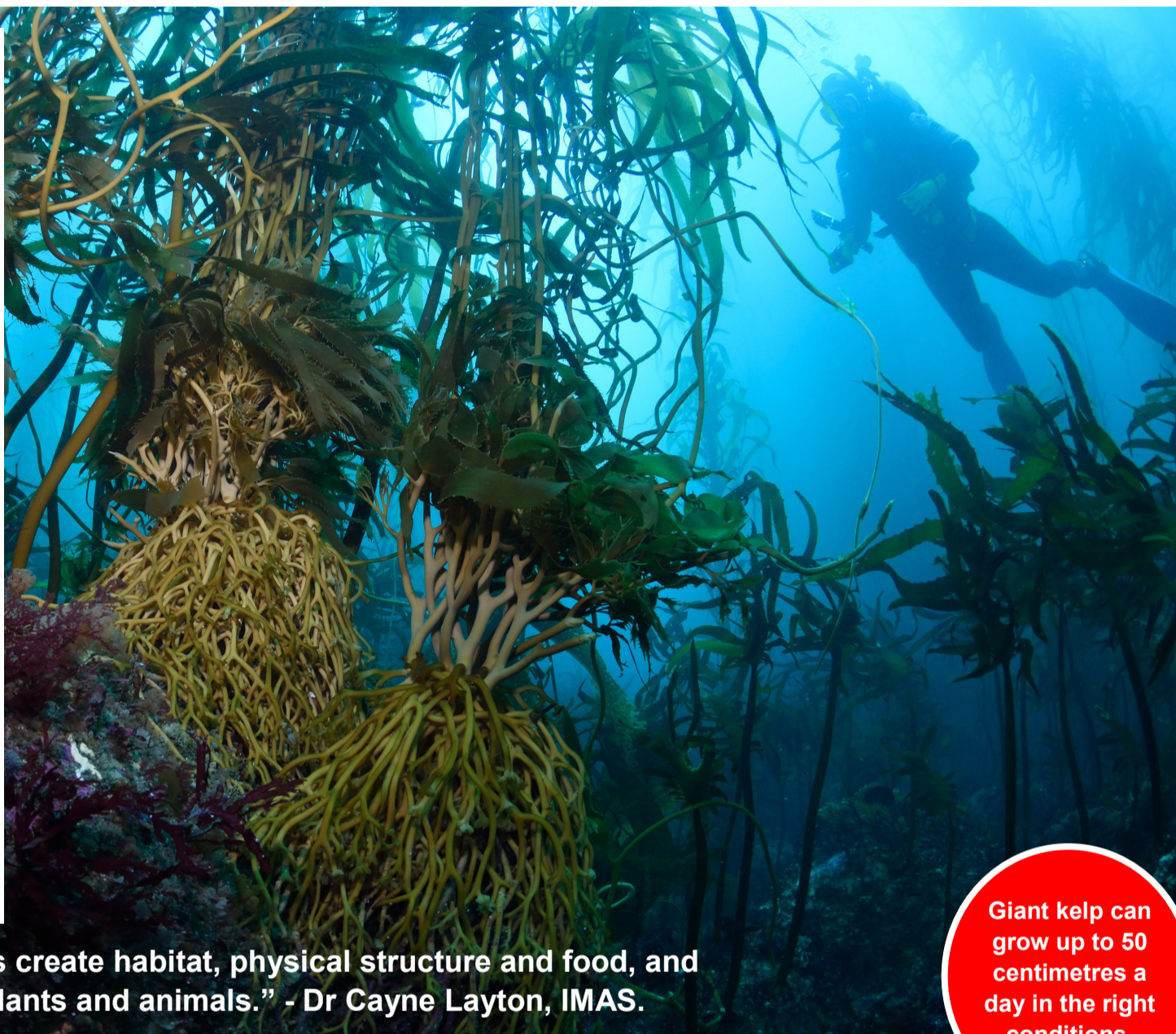
It is not a seahorse, but it is related.

It is one of a number of species, including rock lobsters and abalone, that depend on giant kelp forests on Tasmania's East Coast.

**Your challenge** is to research what this creature is, and come up with as many facts about it as you can.

You might like to present your findings in a creative way.

Children's University Tasmania members can earn stamps in their passports for this challenge, at the discretion of their school coordinator.



“Exactly like trees on land, kelps create habitat, physical structure and food, and support a whole ecosystem of plants and animals.” - Dr Cayne Layton, IMAS.

Giant kelp can grow up to 50 centimetres a day in the right conditions.

# KELP HELP PROGRAM



PICTURES: iStock/ Nigel March/ UWPhotog; Dr Cayne Layton

THE waters off Tasmania's East Coast were once, and not very long ago, home to awesome forests of giant kelp.

*Macrocystis pyrifera* is the world's largest marine algae.

It grows up to 40m from the seabed to the surface, where - much like the land-based forests - it forms a canopy and soaks up sunshine.

It was once so thick and common that local fisherman would use the rope-like strands

of kelp to anchor their boats. During the last 60 years 95% of this beautiful and very important underwater habitat has disappeared.

There have been a few theories about why this has happened.

Giant kelp and other brown seaweeds contain a substance called alginate, which has the ability to absorb water and has many uses. For example, it is used in medicines and

toothpaste, and as a thickener or stabiliser in some manufactured food.

Some ice cream contains sodium alginate.

Anyway, in the 1960s a company built a factory in Triabunna and started to harvest and process the kelp into alginate.

The mass kelp harvesting only lasted about 10 years, because of a major decline in kelp forests.

Not surprisingly the harvesting of giant kelp was blamed for the decline, but the forests continued to disappear after the company closed its doors.

Studies by scientists at the Institute for Marine and Antarctic Studies (IMAS), at the University of Tasmania, revealed another factor was involved in the habitat loss.

The studies used aerial photos and satellite images taken over several decades, and found

that the giant kelp forests had reduced from more than 400 hectares in the late 1990s to 10 hectares by 2015.

Sadly only a few patches now remain on the East Coast.

But there is some good news. IMAS researchers Dr Cayne Layton and Professor Craig Johnson have recently made a significant breakthrough in the fight to save our underwater forests.

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Picture: Dr Cayne Layton



# Scientists grow heat tolerant 'super' kelp

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The innovative research involves the use of "heat tolerant" giant kelp.

Scientists believe that climate change is strengthening the East Australian Current which transports warm, nutrient-poor water to Tasmania and replaces the colder, nutrient-rich water the giant kelp once thrived in.

"Therefore, we're looking among the remaining giant kelp forests to see if we can find individuals that are more tolerant of warm water," Dr Layton said.

"The same way some people are naturally just taller than others, some giant kelp are more tolerant of warm water than others.

"Then we can grow large quantities in our lab, and replant them back into the ocean."

The team plant the kelp when they are still tiny, about one millimetre tall.

They do this by attaching them to another object, such as string or plastic, and screwing that material to the ocean's rocky bottom using an underwater drill.

Three patches were planted at three sites last year, and the exciting result is the giant kelp is flourishing at two locations.

Dr Layton said the kelp can grow very quickly.

"Some juvenile kelp that we planted in October last year are already over six metres tall," he said.

Dr Layton said giant kelp forests will probably never be like they were 60 years ago, but he was optimistic the project could "buy some time" for the spectacular

**FAST FACT:** The East Australian Current is a flow of water that runs south along the east coast of Australia. It sweeps warm tropical waters from the Coral Sea southwards where it meets up with the cooler, temperate waters of the Tasman Sea.

endangered habitats.

"This research is still very much in the early stages," he said.

"I'm optimistic we can restore giant kelp forests to significant portions of the Tasmanian coast,

but there's still a lot of work to do first to improve our methods, knowledge and success rate."

The researchers hope in the future they will be able to teach other divers to help with the

challenging work, and involve many other people in the project.

The aim will be to restore large areas of giant kelp forest around the state.

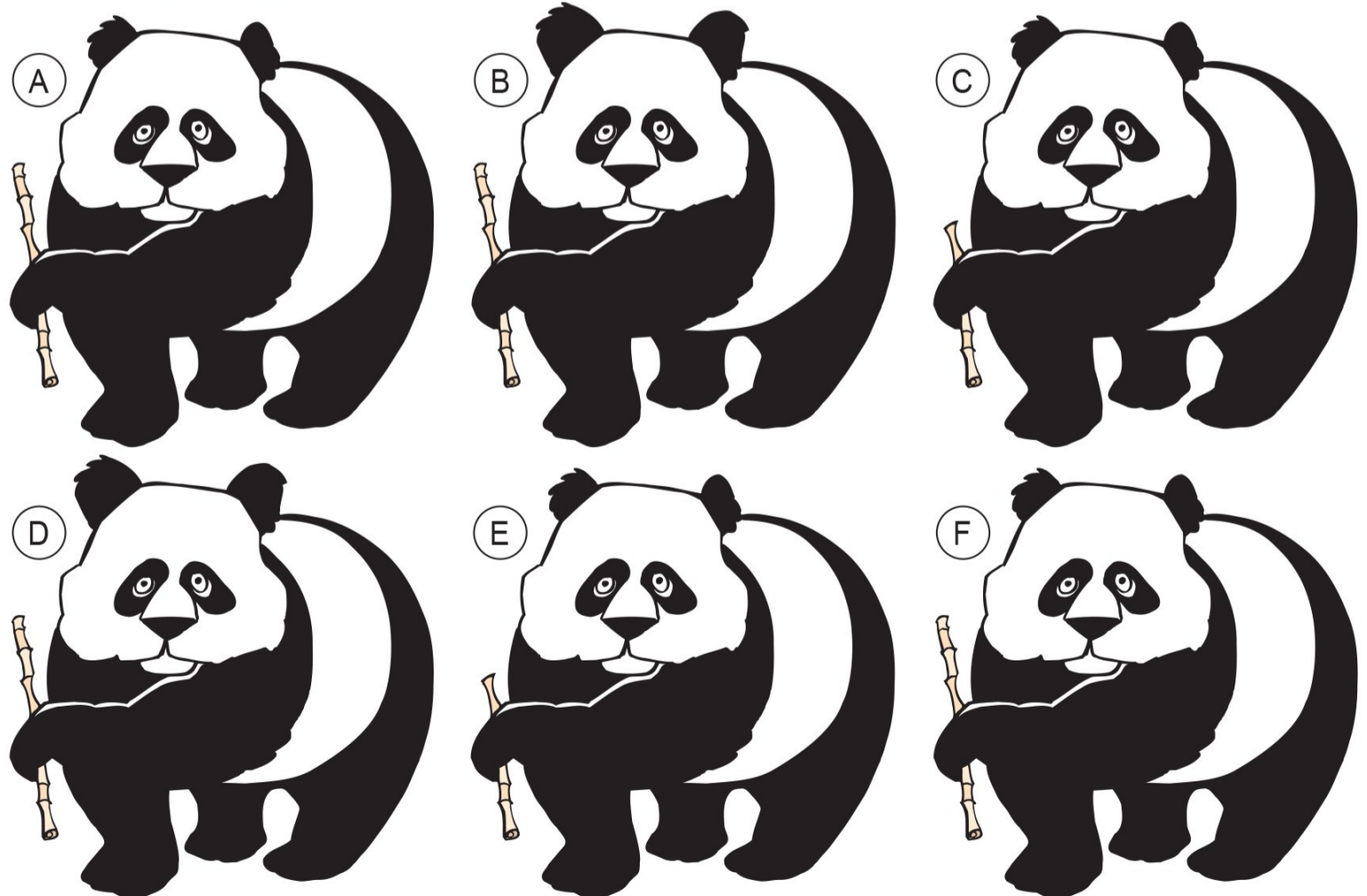
Dr Layton said he had been

researching kelp for almost 10 years.

"It is very exciting to be part of a team that is doing this new research and working on this type of restoration," he said.

## Perplexed **PANDAS**

Three pairs of giant pandas are mixed up. Each pair is slightly different from the others. Match the pairs then check the solution below.



SOLUTION: A+F, B+D, C+E.

Artwork: [www.johnpollyfarmer.com.au/](http://www.johnpollyfarmer.com.au/)