Managing fishing to save our reefs

Marine experts gathered earlier this month in Phuket to discuss ways to help coral reefs recover from the devastation of last year's widespread coral bleaching.

The Phuket Marine Biological Centre (PMBC), Prince of Songkla University (PSU), and Project IMPAACT from the University of Victoria in Canada, convened a three-day workshop to discuss the results of a post-bleaching survey, and the way forward to enhance coral reef resilience.

Hosted by PMBC, the meeting drew over 25 marine experts from government agencies within the Department of Marine and Coastal Resource, the Department of National Parks, and leading universities.

Srisakul Piromwarakorn, a PSU researcher, said "the objectives of this workshop were to discuss where we are in terms of the status of Thai coral reefs after last year's bleaching, and to get together local experts to discuss the concept of reef resilience and how it can be applied to coral reef management."

Many experts agree that the extent of coral bleaching last year was unprecedented, but noted that many sites have shown signs of recovery.

Niphon Phongsuwan, head of the Marine Biology and Ecology Unit at PMBC and one of Thailand's most experienced coral researchers, said: "In order for corals to recover they need to have the right environment, and the best we can do is to minimise human pressures on those sites and improve environmental conditions, especially water quality."

Marine experts discuss coral reef protection at the Phuket Marine Biological Centre.

Over 25 resilience factors for Andaman reefs were identified as useful indexes to assess and monitor the coral reef condition.

Some of those include the condition of coral and fish communities, pressures from commercial fishing, the impact of human presence and connectivity between coral reef sites.

These indexes will be circulated among coral researchers country-wide to help improve long-term monitoring.

The workshop concluded that fishing needed to be managed urgently in key coral sites because many herbivorous fish play critical roles in keeping macro algae out and making sure that the space is available for coral growth.

Parrotfish is one of the functional species that many experts believe play a huge role in the reef recovery processes.

The fact that this beautifully-colourful fish is heavily caught and readily on sale in markets is disturbing and a cause for concern.

Marine scientist Petch Manopawitr from University of Victoria and the Project IMPAACT, who filed this report to *The Phuket News*, said: "Marine Protected Areas are a powerful tool in this regard, and Thailand is well advanced in terms of setting up individual protected areas.

"But we need to look further to develop a Marine Protected Area Network and apply an ecosystem-based approach on a regional level.

"Fish have to be seen as wildlife in those key areas and need protection because they play absolutely a key role in ecosystem function."

Meet the natives

Each week *The Phuket News* introduces an animal or plant that is found on the island of Phuket.

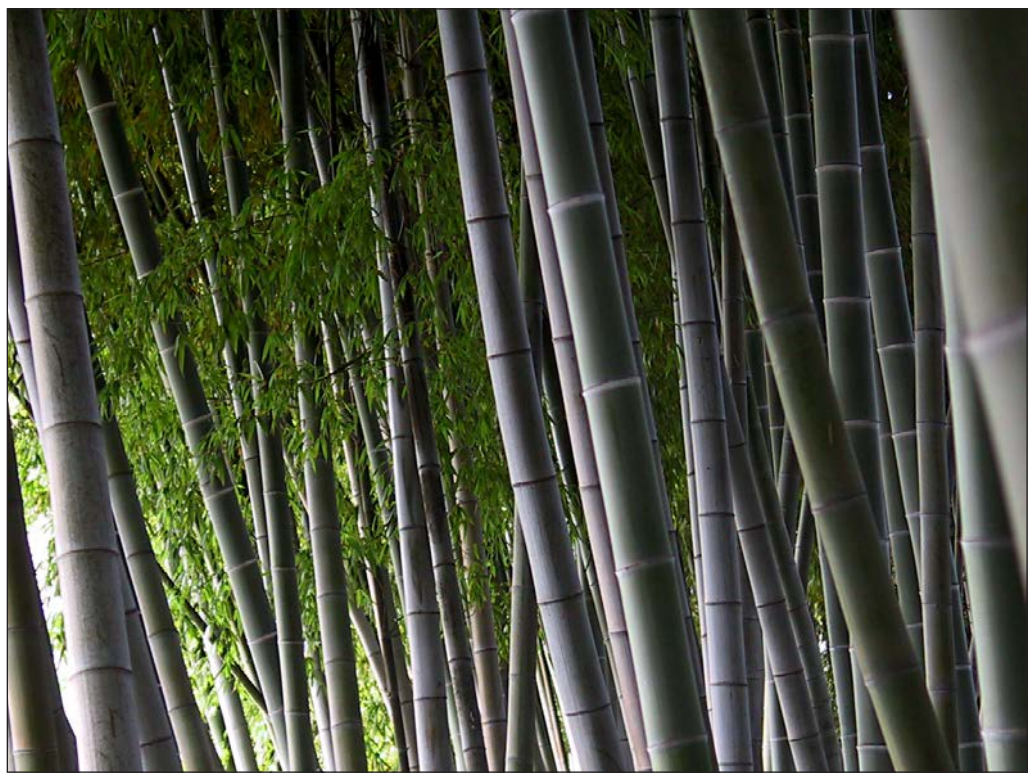
These beautiful and colourful native parrotfish were for sale at the Rawai beach market at the weekend.

Marine scientists are realising the ecological value of this and other mostly-herbivorous fish in promoting the health of threatened coral reefs in the Andaman Sea.

This useful fish helps to clean the reefs of algae and promotes the growth of coral species. Its formidable mouthful of teeth can crunch dead coral, the fish eating it and excreting it as sand. One parrotfish can make 90 kg of sand a year in this way.

Of the Labridae family, there are about 90 species of parrotfish, each as spectacular and unbelievable as the next with their blue-green colourings and shapes, and they grow to between 30-50cm in size. They live in tropical waters around the globe, and simply love coral reefs.

If enough people boycott buying this fish to eat, to protect our coral reefs, fisherfolk may catch fewer of them.



Bamboo is a rapidly renewable material that regenerates within 10 years of harvest, which can be easily grown to compensate those that have been cut down.

Low impact materials

GREEN thumb

Given the current state of many environments around the world, when constructing a home or garden consider using low-impact materials.

In 1996, construction and development in the USA generated almost 136 million tonnes of waste. Only 20 to 30 per cent of that was recycled.

This shows new and non-recyclable materials used around the home and in landscapes consume massive amounts of resources to produce and distribute, and also create waste when they are demolished.

Using "low-impact materials" in construction, or in your garden, is one of many solutions that can relieve the excessive growing numbers of waste and pollution.

The use of innovative low-impact materials include permeable, recycled, recyclable, reflective and non-toxic materials that reduce the impact on the natural environment.

The material selection will reduce CO2, reduce the consumption of new materials and maximise the use of natural resources which will help reduce the cost of construction as well.

Design your property not only for aesthetic purposes, but to make your home and garden more valuable and useful.

Some easy ways to apply the framework of this sustainable method to your house are suggested below.

First things first: Begin with an assessment of your site to look for any existing structures, hardscape or landscape amenities that can be reused. Purchasing new materials will cost you a lot more than reusing existing materials.

If your site has some existing plants, try to preserve as many important plants as possible. To grow new plants will cost more and take more energy.

Above: Old pavement is reused for new plaza.
Left: Old bottles are used to line a planting bed, while old bricks are reused to pave footpath. - *Photo by keziahplummer.com.*
Below: Low-impact materials include turf block that allows water to get through to sub soil instead of washing off ground surface.

Selection: If you have to purchase new materials, try to select local materials and those made with recycled content, which will reduce the cost of production, transportation and even greenhouse grass emissions.

Local materials are the right choice as it will create a sense of place that make your home and garden look different from anywhere else.

Select rapidly renewable materials that regenerate within ten years of harvest such as bamboo, willow, coir and jute.

And also, try to minimise toxic by-products or air-polluting emissions as much as possible such as adhesive coating, paints and sealants.

Reuse and recycle: Don't break every structure such as existing concrete slabs, you can reuse it as the floor of your new pavilion.

Other examples include: pieces of shattered pot can be used to decorate a path. Old tyres can be a flower plot. A pile of old railing wood and bricks can turn to be a nice pavement, and other pavers might be used to line a planting bed.

Go green: It's better to shade constructed surfaces (such as roof, roads and sidewalks) with vegetation, as plants are considered to be a kind of low-impact material that can reduce heat and CO2.

If you need a parking lot or big plaza, consider using permeable materials such as pumice, vesicular basalt, turf block or even create a space for a rain garden. (read *The Phuket News* issue June 24).

Grass can also act as a green carpet on the floor of your landscape.