**Cairns aquarium   
aquatic biosecurity video**

Australia’s north is blessed with magnificent coast lines, tropical rainforest and waterways and the world heritage listed Great Barrier Reef.

Within these relatively pristine environments, plants and animals thrive that are found nowhere else in the world.

The region also serves as an important economic base for shipping, sea and air ports, tourism, recreational and commercial fishing, agriculture and aquaculture.

These measures are critical in keeping Australia free from the world’s most severe pests and diseases.

Whilst Australia’s geographical isolation has played a key role in preventing biosecurity risks, the increased movement of people and vessels now creates new challenges and which may be easily transported unknowingly by ships, fishing boats, yachts, motor cruisers, and other recreational water craft.

Scientists have identified five marine pests as priority species to be on the lookout for.

These species would thrive in conditions in northern Australia, and if they arrived could have significant impacts on our way of life.

Aquatic pests have the ability to outcompete native marine life, damage the attractiveness of our coastal areas, threaten our economy by competing for food and space with the aquaculture industry, and cause serious human illnesses.

Asian Green Mussels grow up to 16 centimetres and often have a bright green edge.

They’re a nuisance biofouler as they grow up to 1cm each month and accumulate on most underwater surfaces.

Due to the speed of growth they clog water intake pipes and cooling systems in boats and power plants, increasing the cost maintenance.

Masses of Asian green mussels slow boats down and increase fuel consumption.

They also foul aquaculture equipment and can out-compete farmed and native species for food and space.

In North America, they have out-competed native oysters and destroyed oyster reefs, which are essential habitats for many fish and crabs.

Because they grow so quickly, people in Asia collect them for food, but the mussels can also carry diseases, viruses, parasites, bacteria and algae, which can harm humans.

Brown mussel, are closely related to the Asian green mussel and grow up to 12 centimetres.

Like the Asian green mussel, Brown mussels are a major problem as they grow so quickly, and in such large numbers, that they can sink navigation buoys.

Brown mussels are also known to accumulate toxins, which may poison humans who eat them.

Black Striped Mussels grow to two point five centimetres long, are smooth, easily crushed and are often dark brown or black with zigzags or stripes.

They were detected in 1999 in Darwin Harbour where they were successfully eradicated.

They form dense clusters and are rarely seen individually.

Black striped mussels are also biofoulers, growing very quickly and causing damage to most underwater structures including jetties, ropes, boat hulls and pontoons.

They form dense beds up to 10-15 centimetres thick, leaving no room for native marine species.

Asian Bag Mussels are also quite small, growing up to three centimetres long.

The shell is olive green with zigzag lines and, unlike other mussels, are usually found in soft mud and sand, and sometimes on jetty pylons.

They’re most commonly found in the Pacific Ocean, and have invaded southern Australia.

Asian bag mussels form a cocoon around themselves, and when in large numbers, cocoons fuse to form dense mats in sand and mud.

In some areas, there are as many as 150,000 mussels in one square metre, completely overtaking native species.

Harris mud crabs are very small, only growing to two centimetres across the body.

They are very adaptable, being found in freshwater, brackish and marine environments.

Although small, Harris mud crabs can be very destructive.

The crabs group together and may foul and clog up intake pipes, and like some of the mussels, can foul the cooling systems in power plants.

Studies have shown Harris mud crabs preying on other small animals, which decreases biodiversity, and competes with native crabs for food.

They can also carry a herpes-like virus which kills many types of Crustacea and could devastate our local fishing industries.

So how can you help?

Keeping these marine pests out of northern Australia is essential.

Everyone can help play a part by keeping boat hulls clean through regular antifouling.

It’s important to collecting any bits that are scraped off during cleaning and disposing of these in a bin to stop these animals spreading.

Do not move water, fish or fish products, including bait and shells, between locations as marine pests and diseases are hardy and some can live for extended periods out of water.

Keep fishing and dive gear clean and disinfected between trips.

When you enjoy our marine environment take your rubbish with you as it’s also known to spread marine pests.

Finally, keep a Top Watch for these species while you’re out and about in the waters of northern Australia.

If you have seen any suspect species, photograph it and the general surrounding area, record the location with GPS coordinates if possible, and report it by contacting the local fisheries office, Biosecurity Queensland, Northern Territory Fisheries or the Department of Primary Industries and Regional Development.

This initiative is part of the Australian Government’s Agricultural Competitiveness White Paper, the government’s plan for stronger farmers and a stronger economy.

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