

# Letter from a Friend

## Invasion in our northern connections

**Australia** views itself as an island, and so it was for the many millions of years of accumulated distinction in our fauna and flora. Australia is a special place in the world because of its high levels of endemism (species found here and nowhere else).

In a modern context of biosecurity, we are fortunate in the relative isolation of our nation, girded as it is by sea. We have the opportunity to protect our borders from introduction of exotic diseases with the potential to cause great damage to agriculture, and from exotic plants and animals with the potential to establish in Australia and wreak similar damage in both an economic sense and for our unique biodiversity. We need only to consider fox, buffalo, carp, rabbits, cactus, *Salvinia* and the cane toad for examples, with the consequences of many of these inadvertent or deliberate introductions still to pan out.

We are an island, but there is one significant avenue of invasion to Australia that is often not fully recognised: that is, the link to the north through the Torres Strait and the island of New Guinea. I have some projects running there and have made some incidental notes on fish invasions.

The fish *Tilapia* was largely unknown from the Kikori catchment where I work, as few as three years ago. The species has now spread into the uppermost streams and right down to the coast. On our recent trip in September 2013 we found it in Wau Creek, and indeed it was the only fish the locals with us caught — seven large *Tilapia*. The locals believe it has 'chased out' the Barramundi (*Lates calcarifer*) and Black Bream (*Hephaestus fuliginosus*) that used to be the main fish caught.

Down on the coast in Apeowa lands on Banana and Turuvio Islands, the catch was more diverse — salmon, mullet, eel tailed catfish, shark, stingray — but among them was also a large *Tilapia*. Here they do not do so well, according to the locals, because they are favoured by sharks, which take off their heads. Nevertheless, they persist.

*Tilapia* is now sold in the Kikori Market,



*Tilapia* are the major fish species now at the Kikori Market. They are valued for their size and flavour.

January 2012 revealed none. They are sold fresh or smoked, and although the taste is satisfactory they do not taste as good as Barramundi, catfish or Black Bream, according to the locals.

### Threats posed by exotic fish

Exotic fish are a mixed bag. Some establish in the new environment and wreak havoc, eating native species unaccustomed to new predators, sometimes to extinction. In other cases, they eat the foods of native species, and their sheer numbers lead to the decline in the native species through competition for food. The jury is out on *Tilapia*.

Perhaps more disturbing is the number of fish species moving into Papua New Guinea (PNG) from Indonesian Papua. One, the Climbing Perch (*Anabas testudineus*), is an exceptional disperser and has swept through the waters of the Fly River and other southern rivers of PNG with devastating effect.

When a predator attempts to eat a Climbing Perch, the perch opens its gill covers which are equipped with some very sharp spines. The prey lodges in the throat of the predator, and both perish. An iconic species in both New Guinea and Australia, the File Snake (*Acrochordus arafurae*), has been virtually extinguished from the vast swamps of the Fly delta, and pushed back to the very headwaters of the Bamu/Aramia system — a tenuous refuge as the Climbing Perch advance relentlessly.



Two massive *Tilapia* speared in Wau Creek, Kikori River, where the species was unknown only 2–3 years ago. They seek cover under logs or undercut banks and chase out the native fish.

### Should we care?

So what does this mean for Australia? Well, the Climbing Perch has reached the Torres Strait, so it would appear only a matter of time before it enters our wetland systems and sweeps across the north. We know the consequences for our File Snakes, but not what other ecological damage may be done by this insidious little fish.

There is a gateway to our north, and all manner of unwelcome guests have the potential to reach our shores: for instance, porcine diseases, chikungunya, antibiotic resistant tuberculosis — and a range of exotic fish making their way from Indonesia to PNG to Australia via the Torres Strait.

**Have those of us interested in protecting our freshwaters from exotic invaders got our eyes firmly fixed on this ball, and strategies for addressing this challenge?**

*Professor Arthur Georges*  
Chief Scientist, Institute for Applied Ecology  
Distinguished Professor, University of Canberra  
**Friend of the Peter Cullen Trust**