

## Media Alert

### Chiefs of Staff, News Directors

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## Trojan war: genetic weapon sought against pest fish in Australian waterways

The University of Tasmania will lead a collaborative effort to rid waterways around Australia of the Eastern mosquitofish (*Gambusia holbrooki*), which was introduced more than 100 years ago to combat malaria.

The mosquitofish, which is native to eastern and southern America, proved ineffective in controlling mosquito populations, but has bred prolifically and caused extensive damage to the native aquatic fauna – eating the larvae of endangered fish and frogs and attacking the adults.

It is now widespread throughout Australia (*illustrative map attached for media use*) but within Tasmania has so far been contained to the Tamar Island Wetlands near Launceston.

Having secured \$476,000 of Australian Research Council funding Dr Jawahar Patil, a lecturer and researcher with the University's National Centre for Marine Conservation and Resource Sustainability at the Australian Maritime College, can now begin a four-year project that will apply genetic strategies to potentially eradicate the pest fish species forever.

Dr Patil and his colleagues will attempt to develop a *Gambusia*-specific Trojan Y chromosome that will make female fish produce mainly male eggs which will eventually lead to population extinction.

The University of Tasmania already has a world-wide reputation for expertise and infrastructure to conduct invasive fish research including developing genetic pest control options, determining the pest fish population structure, applying recruitment dynamics, assessing pest fish stock and implementing hormonal sex reversal.

The *Gambusia* project will be complemented by the University of Adelaide's expertise in the sex determination and differentiation of vertebrates.

Collaborative funding, specialist knowledge and data from the Inland Fisheries Service, Northern Tasmanian Natural Resource Management Association (NRM North) and possibly Tamar NRM and Parks and Wildlife Tasmania will also be crucial to the project's success.

The project will also rely heavily on the contributions of volunteers at the Tamar Island Wetland Reserve.

The University and its partners will create a unique pool of knowledge - in fish biology, population-genetic modelling, sex chromosomes, genomics and pest fish management.

“It’s wonderful to have the funding available to launch this project to find a way to genetically eliminate the *Gambusia*,” Dr Patil said.

“This situation urgently needed effective and sustainable long-term action to protect many of our endangered native species, such as the green and gold frog and the Australian grayling fish, with broader implications throughout Australia and regions outside the species' endemic distribution in south-eastern America.

“This proposal takes a fresh approach to address a global issue, and like much innovative research, it carries an element of risk to delivery of planned outcomes.

“Nevertheless, the rewards of success would be truly significant to manage this and many other pest fish around the globe.”

### **FISHY FACTS**

1. *Gambusia* can increase from a few fish to millions in a single season.
2. Fishing enthusiasts should be careful not to move *Gambusia* – check boating and fishing equipment to avoid infecting other areas. Fines apply to people found moving or possessing *Gambusia*.
3. *Gambusia* did not eliminate any more mosquitos in Australia than what the native fish were already eating. Malaria was virtually eradicated from the country in 1981 thanks to vaccination; however there are still approximately 700-800 cases every year, mainly in northern Australia.

More information available at:

[http://en.wikipedia.org/wiki/Eastern\\_mosquitofish](http://en.wikipedia.org/wiki/Eastern_mosquitofish)

<http://www.ifs.tas.gov.au/publications/fish-fact-sheets/eastern-gambusia>

<http://www.nrmnorth.org.au/gambusia-management>

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