

# The Scary Hairy Decline

*Protecting the critically endangered hairy marron*

CASE STUDY

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2015



## PROJECT LEADERS

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## PROJECT MANAGERS

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## PROJECT DURATION

JULY 2013 - JUNE 2015

## KEY PARTNERS

CAPE TO CAPE CATCHMENTS GROUP (CCG), DEPARTMENT OF FISHERIES (DOF), HAIRY MARRON RECOVERY TEAM & HAIRY MARRON VOLUNTEER TEAM

In a region known internationally for its wine and surf breaks, a smooth operator, the smooth marron, has invaded the Margaret River and placed the native charismatic crayfish under threat. The critically endangered Hairy Marron, *Cherax tenuimanus*, has been rapidly declining in numbers since the early 1980s, coinciding with the first identification of Smooth Marron, *Cherax cainii*, in the river. Today, there is nowhere in the wild where the Hairy Marron exists in the absence of the invading smooth variety.

Together with the Cape to Cape Catchments Group (CCG) and Department of Fisheries (DoF), SWCC has been busily implementing actions aimed at preventing the extinction of the species from this well-known, iconic and unique river system.

**Aim:** contribute to the recovery of Hairy Marron in the Margaret River.

**Objective:** develop partnerships, support existing programs, undertake on-ground works and engage the community to protect the species.

This project is supported by the South West Catchments Council, through funding from the Australian Government's National Landcare Programme.



## Background

The South West is home to two of the largest freshwater crayfishes in the world. The Smooth Marron and the Hairy Marron are the third and fourth largest on the global scale. The Smooth Marron is relatively common, (this is the species you would be targeting if you went on a marroning trip for the weekend) with a large current distribution from Geraldton to Esperance.

In contrast, the Hairy Marron is found only in the Margaret River, and is now restricted to a couple of pools in the upper reaches of the Margaret River catchment. For this reason it is listed as critically endangered under state and national legislation.

The Hairy Marron is named for the hair-like tufts on its back; however this feature is often not well defined in juveniles. Even as adults both the hairy and the smooth marron can appear quite similar to the untrained eye. These similarities have resulted in ongoing debate regarding taxonomy over the last 20 years; yet genetic research has repeatedly confirmed that the two species are distinct.

What we do know is that the Smooth Marron is the Hairy Marron's number one nemesis.

It is thought that the Hairy Marron evolved only in the Margaret River catchment. This catchment is increasingly being recognised for its unique aquatic biodiversity, an indicator of evolution in isolation from the rest of the South West.

Records of Smooth Marron in the Margaret River appeared in the early 1980s, and were likely due to an increased number of landholders moving marron around the area with an interest in stocking their farm dams or favourite fishing spots with marron.

Hairy Marron numbers have been in decline ever since. There is still much to learn about why this species is disappearing at such a rapid rate, however competition and interbreeding with Smooth Marron is likely a major contributor. Genetics has confirmed that the two species can interbreed to create a hybrid (just to make visual identification that little more challenging for our scientists!).

The Hairy Marron requires relatively good water quality and a variety of in-water debris, like tree logs, for shelter. Being a detritivore (eating anything and everything) they also depend on inputs of organic matter from the surrounding river banks and forest.

Habitat loss, water extraction, changes to water flow and volume, as well as introduced fish and illegal fishing, are all additional threats facing the Hairy Marron.

## Recovery efforts

The Hairy Marron project aims to contribute to the recovery of the species with project partners through:

Assisting the Hairy Marron Recovery Team make informed management decisions;

Undertaking field work and investigations to help answer key questions about the population size and distribution of marron species, which will help shape the direction of management decisions in the future;

Undertaking on-ground rehabilitation action on private property along the Margaret River and its tributaries to contribute to the protection and enhancement of critical habitat;

- Establishing a Hairy Marron display tank at Perth Zoo;
- Increasing community awareness and knowledge;
- Establishing a specific community-based volunteer team to aid Hairy Marron recovery efforts; and
- Completing the draft Hairy Marron (*Cherax tenuimanus*) Recovery Plan following National Recovery Planning Guidelines.



COVER PAGE TOP: Hairy marron (PHOTO: Murdoch University Freshwater Fish Unit)

COVER PAGE BOTTOM: Margaret River (PHOTO: Murdoch University Freshwater Fish Unit)

TOP: CCG and Hairy Marron Volunteer Group monitoring in the Margaret River (PHOTO: Anna John)

BOTTOM: Marron catch that was identified, measured and tagged by the Hairy Marron Volunteer Team (PHOTO: Anna John)



## Recovery cont...

One of the major recovery actions identified for the Hairy Marron is the removal of Smooth Marron from the last remaining stronghold areas of the Hairy Marron. Commonly referred to as a 'fish down', the removal of Smooth Marron to help the hairy variety *hang on* has been undertaken sporadically over the last 10 years. Up until recently, we didn't know what impact the fish downs had on the smooth and hairy populations. Are the fish downs a useful management tool? How many Smooth Marron do we need to remove to help boost the hairy population? Do we have enough time and enough manpower to make a difference?

Enter Dr Rodney Duffy, Research Scientist at the Department of Fisheries. Dr Duffy, along with the Hairy Marron Recovery Team and project officers at the CCG and SWCC, devised a plan to help answer these questions. An experiment was set up to look at the effectiveness of the fish downs. Hundreds of volunteer hours involving early morning canoeing, setting traps, capturing, measuring, recording, tagging, identifying and releasing marron have provided some fantastic results.

The first intensive year of this activity saw the capture and removal of nearly all reproductively mature Smooth Marron from a test site.

This resulted in an increase in the proportion of Hairy Marron in the population from less than 10% to over 25%.

The success of this trial has resulted in the expansion of effort to two further sections of the river where Hairy Marron persist.



**TOP:** The critically endangered hairy marron, *Cherax tenuimanus* (PHOTO: Rodney Duffy, DoF)

**BOTTOM:** Canebrake Pool, one of the last refuges for the hairy marron (PHOTO: Murdoch University Freshwater Fish Unit)

**OPPOSITE:** Emma and Jasper, volunteers, and Drew and Rachael, CCG, help out with marron monitoring at the Margaret River (PHOTOS: Anna John)

A new recovery plan for the species was recently completed as part of the project and is awaiting state and federal ratification. The recovery plan outlines the importance of: continued effort to remove Smooth Marron from habitats where Hairy Marron is present; increase numbers of Hairy Marron in the captive breeding program to allow restocking; and finding suitable sites, either in the river or dams where restocking can occur with minimal risk of invasion from Smooth Marron. In addition, it highlights knowledge gaps and potential roadblocks to success.

### Building an ark for the future

An exciting future direction of the battle to save the Hairy Marron will hopefully be the development of Hairy Marron ark sites across the Margaret River catchment. The CCG has already been working with local landholders to locate suitable ark sites and undertake on-ground works, including dam plantings, in preparation for the translocation of this endangered species.

The creation of ark sites around the catchment will provide an insurance policy for the population.



That is, if the Hairy Marron loses the battle against its smooth cousin and other threats in the upper Margaret River pools. SWCC Project Manager, Anna John, remains hopeful about the resilience of the Hairy Marron to survive.

*"The exciting part about working with critically endangered crustaceans is their ability to rapidly reproduce and the potential to build additional populations over a relatively short period of time," Anna said.*

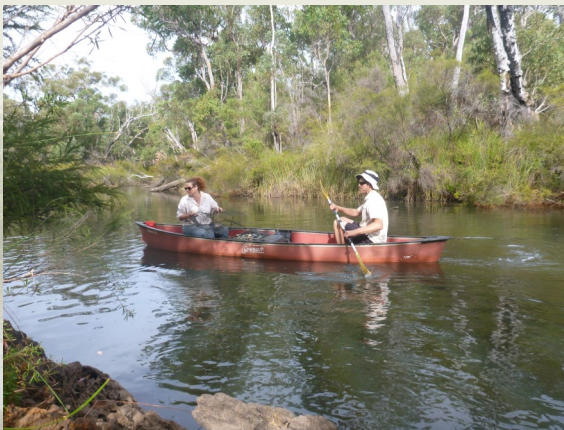
### Hair-raising awareness

Raising awareness about the plight of the Hairy Marron and its unique and beautiful home, the Margaret River, has also been a focus of this project.

The Perth Zoo now has a Hairy Marron display in its Australian Wildlife section and a series of interpretive signs have been developed for installation at key visitor areas along the banks of the Margaret River.

The promise of freshly brewed coffee is also likely to attract locals and tourists alike to the newly opened Hairy Marron Café, located in Margaret River town. The café owner has

plans to install a Hairy Marron display tank and provide information to encourage café patrons to get involved in the ongoing battle to save this unique Margaret River species.



### Conclusion

Whilst research and on-ground activities are helping to build our understanding of the Hairy Marron, there are still many questions about the animal's biology and ecology that remain unanswered. Conservation work requires long-term commitment and a dedicated team to implement recovery actions.

The Hairy Marron is lucky to have the support of the Department of Fisheries, Cape to Cape Catchments Group, the South West Catchments Council and a dedicated team of hardworking volunteers. It is a long road to success, however significant results are already being achieved.



Government of **Western Australia**  
Department of **Fisheries**



working together to make a difference today and  
develop a sustainable environment for tomorrow.



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