NSW GOVERNMENT Department of Primary Industries

primefact

Freshwater Spiny Crayfish in North East NSW

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Fisheries Ecosystems Unit, Port Stephens Fisheries Institute

Introduction

North east NSW is home to several species of freshwater crayfish, many of which are endemic to the area (i.e. they don't occur anywhere else). *Euastacus* crayfish, also known as spiny crayfish, are widely distributed in Australia extending from far north Queensland to the South Australia/Victoria boarder. Many *Euastacus* species in north eastern NSW have a restricted distribution occurring in small remnant areas of forest.

There are a variety of common names used to describe freshwater crayfish including spiny crays, crawchie, craybobs, lobsters and crabs. They are also frequently referred to as spiny crayfish, although the extent and position of spines varies considerably between species.

Crayfish play a fundamental role in the environment and are considered a keystone species. They have an important and unique position in aquatic food webs. They are major processors of organic matter acting as shredders, predators, collectors and grazers. They are an important source of food for other fauna including invertebrates, frogs, fish and platypus. They also assist in maintaining river health and structure.

There are a range of threats facing *Euastacus* crayfish. They are generally slow growing, late maturing, long-lived and/or rare, making them particularly vulnerable to the impacts of over-exploitation.

This Primefact aims to raise awareness about the species of *Euastacus* encountered in north east NSW, their identifying features, and the fishing rules in place for their protection.

The Suttons Crayfish *(Euastacus suttoni)* displaying striking red and orange colouration. (Photo: Rob McCormack)

Habitat and ecology

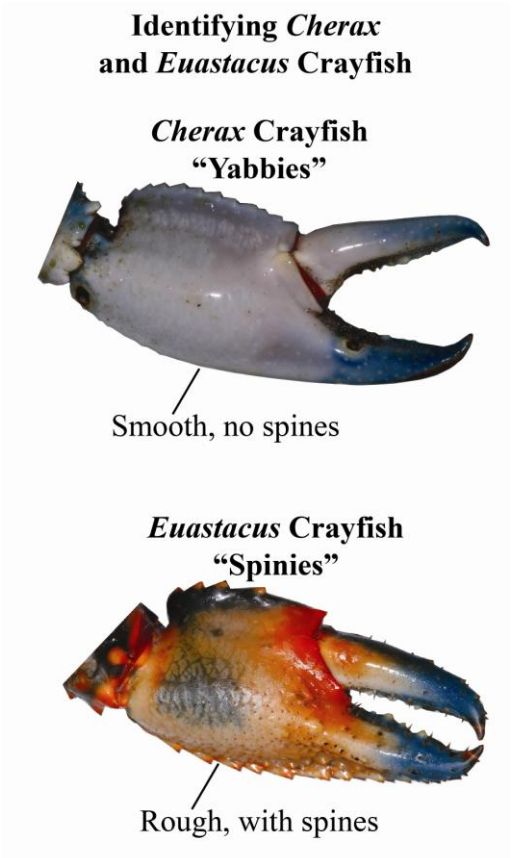
- *Euastacus* crayfish are opportunistic omnivores eating both plant and animal matter.
- *Euastacus* crayfish tend to prefer cool, clear, flowing water but a number of species also occur in other habitats. All species rely on streams for their survival and will be found in or in close proximity to rivers or creeks.
- Breeding events for *Euastacus* species occur in response to environmental triggers including a drop in water temperature, day length, rainfall, instream light and stream levels.
- They are generally slow growing and long lived with a relatively low reproductive rate. Females take 7-9 years to reach sexual maturity and then only breed once a year. The females lay and carry eggs for 5-6 months, and then release small juveniles.

- From the brood of newly released crayfish only a small proportion are likely to reach sexual maturity.
- *Euastacus* crayfish are relatively aggressive and territorial. They will fight each other if similar in size.
- When moulting *Euastacus* crayfish leave their burrow to seek an open space leaving them more vulnerable to predation. Adults moult every one to two years. It is thought that females moult before accepting a mating partner.

Identifying features

- All *Euastacus* crayfish species have a set of spines along the bottom of the claws, making recognition relatively easy (See Figure 2).
- Species of *Euastacus* crayfish can often be confused with the common yabby (*Cherax destructor*).
- *Euastacus* crayfish can also generally be distinguished from a yabby by its larger size and the presence of short robust spikes on its claws, carapace and abdomen. Yabbies are smooth shelled.

Identifying features of *Euastacus* and *Cherax* Crayfish claws (Photo: Rob McCormack)



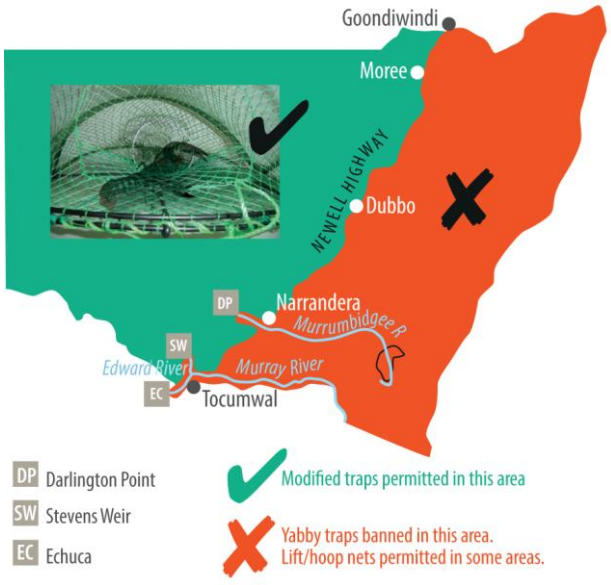
Fishing rules

Fishing rules for Spiny Freshwater Crayfish (other than Murray Crayfish)

Minimum legal length	9cm. *Crayfish are measured from the rear of the eye socket to the centre rear of the carapace.
Daily limit	5 (one or more species, only 1 over 12cm).
Possession limit	10 (one or more species, only 1 over 12cm).
Berried females	Must be returned immediately to the water.
Open season	All year
Closure	No taking from trout waters. Refer to the NSW DPI website for listed trout waters in NSW.
Mutilation	Removing claws, head and/or tail in, on or adjacent to waters is prohibited.
Gear	Fishers are permitted to use up to 5 hoop nets and up to 2 attended fishing lines per person. There is a total prohibition on the use or possession of yabby traps (Opera house traps) in, on or adjacent to any waterways east of the Newell Highway to protect platypus (see Fig 3).

*Only four of the >35 *Euastacus* species in NSW reach the minimum legal length of 90mm OCL (*E. sulcatus*, *E. spinifer*, *E. valentulus*, *E. armatus*).

Use of opera house traps in NSW



Euastacus crayfish of north east NSW

Species of *Euastacus* occurring in north east NSW include:

- Terrestrial Crayfish (*Euastacus maccai*)
- New Hairy Crayfish (*Euastacus neohirsutus)*
- Hairy Cataract Crayfish (*Euastacus pilosus*)
- Small Mountain Crayfish (*Euastacus simplex*):
- Lamington Spiny Crayfish (*Euastacus sulcatus*):
- Sutton's Crayfish (*Euastacus suttoni*):
- Strong Crayfish (*Euastacus valentulus*):

The majority of *Euastacus* crayfish in north east NSW range in size with the smallest maximum size for the Hairy Cataract Crayfish being 42.2mm OCL and the largest being 120mm OCL for the Strong Crayfish.

Threats to *Euastacus* crayfish in north east NSW

- *Euastacus* crayfish are vulnerable to environmental pressures as they are generally slow growing, late maturing, long lived and/or rare.
- Potential illegal harvest activities and/or misidentification with the common yabby (the common yabby has a greater bag limit than freshwater spiny crayfish and does not have minimum length restrictions).
- The common yabby has invaded other areas or have been translocated into catchments outside their natural range. They are prolific breeders, fast growing and aggressive. They have the potential to out-compete native crayfish species in a short period of time. They also prey on juvenile crayfish.
- Habitat degradation is likely to be having a detrimental impact on *Euastacus* species. Habitat degradation can be caused by erosion and the clearing of riparian (riverside) vegetation. It can result in the siltation of rivers, the invasion of exotic species and a decline in water quality.
- Climate change poses a threat to spiny crayfish by way of increased temperature, severe weather events, changes in hydrological conditions, loss of suitable habitat and increased potential for bushfire events.

The New Hairy Crayfish, *Euastacus neohirsutus* (Photo: Rob McCormack)

How can you help protect spiny crayfish?

- Make sure you know how to tell the difference between spiny crayfish and common yabbies.
- Do not introduce, translocate or stock crayfish species in public waterways
- Prevent land clearing around waterways and maintain riparian vegetation, instream vegetation and woody debris to ensure protection of aquatic habitats
- Remove rubbish from fishing locations especially plastic bags.
- Adhere to all bag and size limits as well as any other restrictions for the area that you are fishing.
- Carefully release all undersize or unwanted species and take only what is sufficient for your immediate needs.
- Report illegal fishing activity to your local fisheries office or via the Fishers Watch Phone line on 1800 043 536.
- Remove rubbish from fishing locations especially plastic bags.

Habitat for the Lamington Spiny Crayfish *Euastacus sulcatus* (Photo: Rob McCormack)

For further information

For further information visit the NSW DPI website www.dpi.nsw.gov.au, your local fisheries office or call 1300 550 474.

Office	Address	Phone
New England	127 Otho St. Inverell	02 6722 1129
Peel	4 Marsden Park Rd. Calala	02 6763 1132
Tweed	10/12 Greenway Dr. Tweed Heads	07 5523 1822
Richmond	5 Regatta Ave. Ballina	02 6618 1800
Clarence	18A River St. Maclean	02 6645 0500

Bibliography and further reading

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