

Guide to Using the Australian Industry Live Mud Crab Grading Scheme

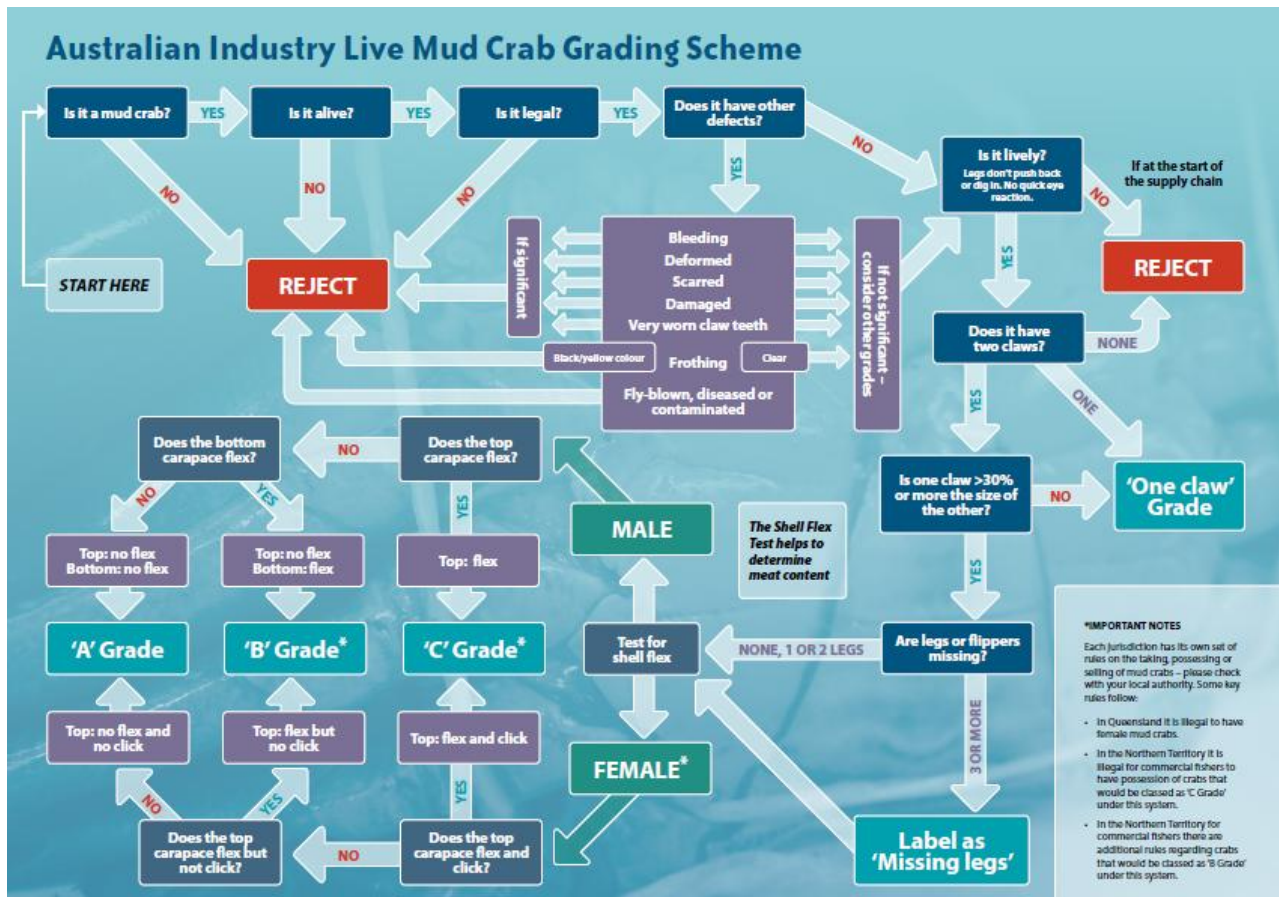
Developed by the National Mud Crab Industry Reference Group - 2012

This booklet provides a step by step guide to assist you in making decisions about how to grade your live mud crabs in line with the Australian Industry Live Mud Crab Grading Scheme. It is designed to accompany and assist you when using the grading scheme flow chart (see below).

The scheme was developed under a Fisheries Research and Development Corporation (FRDC) project (2011-225) which brought together industry representatives from throughout the supply chain and across Australia. This group, the National Mud Crab Industry Reference Group (NMCIRG), developed these industry-driven, objective and mutually-agreed Australian minimum standards for a national grading scheme for live mud crabs to provide a consistent grading process across the nation and supply chain.

The simple to use decision process on the following pages provides people all along the supply chain with an easy to use guide to the Australian Industry Live Mud Crab Grading Scheme. To provide guidance in some instances informative diagrams and pictures have been added.

Before you start grading please note this advice - Always handle crabs gently, hold both sides, not just by one claw or limb as this can cause the crab to 'drop' the claw or limb, with a subsequent decrease in value. Also, mud crabs have very powerful claws and they can cause major damage if they latch on to you. Always take care when handling them and at all times keep your body and hands away from the nipper. If the crab is untied and you try to handle the crab, remember the claws can reach a long way – only put your hands in the areas where you can't be reached. If you are in doubt, don't touch!!!



***IMPORTANT NOTES**
 Each jurisdiction has its own set of rules on the taking, possessing or selling of mud crabs – please check with your local authority. Some key rules follow:
 • In Queensland it is illegal to have female mud crabs.
 • In the Northern Territory it is illegal for commercial fishers to have possession of crabs that would be classed as 'C Grade' under this system.
 • In the Northern Territory for commercial fishers there are additional rules regarding crabs that would be classed as 'B Grade' under this system.

Is it a mud crab - *Scylla* species?



The colour of the shell can vary greatly in live mud crabs, ranging from pale green to blue/purple, to dark brown. Most people with even limited expertise will be able to tell if it is a mud crab.

The definitive way to identify a mud crabs however is to count the number of spines on each side of the carapace. A mud crab has 9 similarly sized spines on each side of the carapace (see diagram). If not it must be rejected.

Is the mud crab alive?

A live mud crab will move its legs, claws and eyes. If the legs and claws hang loosely and the eyes don't move if there is any activity near them, the crab is dead and must be rejected.

Is the mud crab legal?

Each State and Territory has its own set of rules that apply to the taking, or selling, of mud crabs, such as; minimum size requirements, sex that can be retained, whether females are carrying eggs, or the degree of shell hardness. Check your local laws - if it is not legal, reject it.

There are a range of other defects that could devalue the product or lead to product rejection.

The following defects can lead to the need to reject a crab or consider downgrading the grade.

Is the mud crab bleeding?

Blood is a thick liquid ranging from clear to blue and even orange and can be evident if there is damage to the crab, such as the leg tips being broken off, or if legs, claws or the body are crushed. A bleeding crab is more likely to die.

If there is a significant amount of blood, reject the crab.

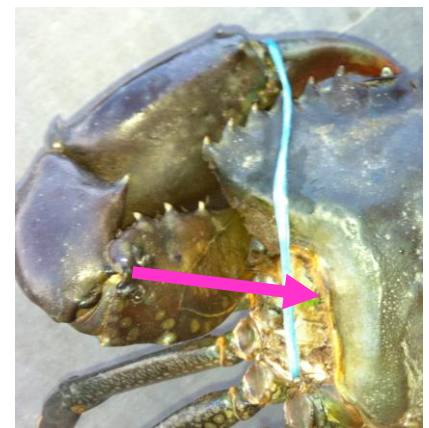


Is the shell of the mud crab deformed or damaged?



Damaged or deformed shells can be caused by a number of factors. It may influence the way buyers and consumers purchase.

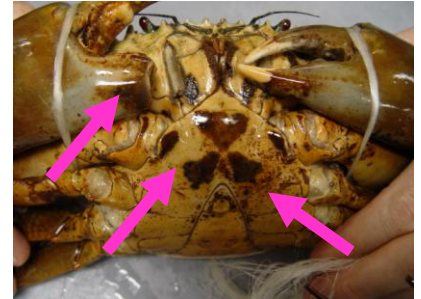
If damage is significant reject the crab. If damage is slight, consider downgrading to another grade.



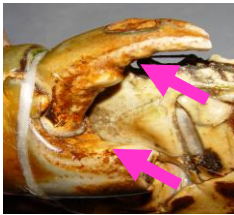
Is the shell of the mud crab badly scarred?

As crabs get older their shell can get wear and tear marks from feeding, fighting and mating. Excessive scarring indicates the crab has not moulted recently and could potentially have little meat content.

If scarring is significant, reject the crab. If it's slight, consider downgrading to another grade.



Does the mud crab have very worn claw teeth?



Very worn claw teeth indicate the crab has not moulted recently and may have little meat content.

If it is significant, reject the crab. If it's slight, consider other grades.

Is the mud crab frothing from its mouth?

Frothing around the mouth is an indicator of poor condition and stress and may mean the crab will not survive long.

If the froth is black or yellow, reject the crab. If it is clear, calculate the time left in the supply chain and consider its chances of surviving.



Is the mud crab fly blown?

If insect larvae are present reject the crab.

Is there any noticeable parasite/disease present?

There is only one known parasite to mud crabs that could lead to them being rejected – it isn't harmful to humans but could affect quality. The parasite is called *Loxothylacus ihlei* (Loxy) and appears as a mass under the flap (see diagram) which at times it can be confused for an egg bearing female.

If Loxy is evident, reject.



Is there any noticeable contamination?

Through the supply chain it is possible, but not probable, that crabs may come in contact with contaminants such as fuel or some chemical. Look, smell and feel for any contamination and if evident, reject.

Is the mud crab lively?

A lively mud crab is very desirable in the market and generally equates to longer life expectancy as it is a 'stronger' animal.

A lively mud crab will try and nip you with its claws, the legs try and push back against you, the tips of the legs try and dig in (see diagram), it tries to walk away, or if there is movement near the eye stalks the eyes react quickly.

If the crab doesn't exhibit these characteristics it is often called 'slow' and based on the amount of time still left in supply chain it may be best to reject it or consider another grade.



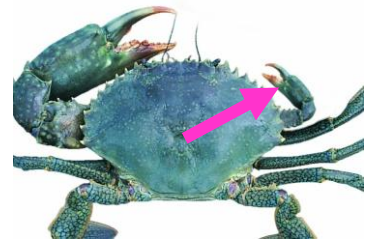
Does the mud crab have one, two or no claws?

Mud crabs have two claws, but for a range of reasons, crabs sometimes lose one or both claws. If it only has one claw, grade as a SINGLE CLAW. If it has NO claws, it should be rejected.

Is one of the claws less than 30% the size of other?

Sometimes the claws of mud crabs are markedly different in size.

If one claw is 30% or less the size of the other, it should be graded as SINGLE CLAW.



Are legs or flippers missing?

For a range of reasons, crabs sometimes lose legs or flippers. If more than a total of 3 legs or flippers are missing, the packaging should be labelled as having 'MISSING LEGS'.

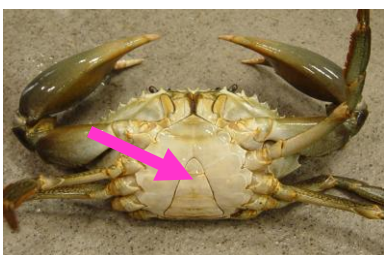
Shell flex, or the lack of it, is one of the key means to determine the potential meat quantity of a mud crab.

The shell flex test is done in different ways for males and female crabs, so you need to be able to determine the sex of a mud crab before being able to test the level of shell flex.

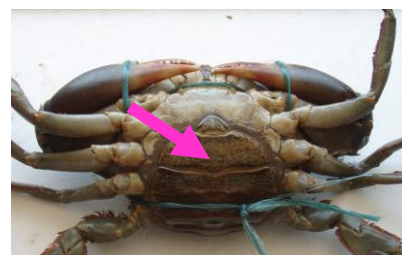
How to tell the sex of a mud crab

To tell the sex of a mud crab, turn the crab over and grade into male or females. Be very wary and careful of the crab's nippers when doing this.

Male mud crabs have a narrow triangular shaped flap



Females have a large, rounded, pigmented abdominal flap



Male Shell Flex

The amount of flex evident in male mud crabs is measured on the top of the carapace and on the underside through two separate tests.

At all times be careful that the crabs claws cannot nip you when you are doing these tests as the claws can reach a long way.

Male Mud Crab Top Carapace Test

To test if the top carapace flexes on a male mud crab, hold the crab in your palms (abdominal flap facing down) and then place your thumbs on the carapace in line with the widest part of the carapace and where the string is (or would be if the crab was tied up) and press gently. If the shell has no give you can then press more firmly to see if there is any shell flex.



If the shell flexes at all it should be graded as **C GRADE**.

(Note this grade is illegal in the NT and will also not be accepted by many traders).

Male Mud Crab Underside Carapace Test

The standard way to test shell flex on the underside (bottom carapace) in male mud crabs, is to hold the crab in both hands, with your palms facing upwards and the abdominal flap of the crab facing upwards (see diagram).

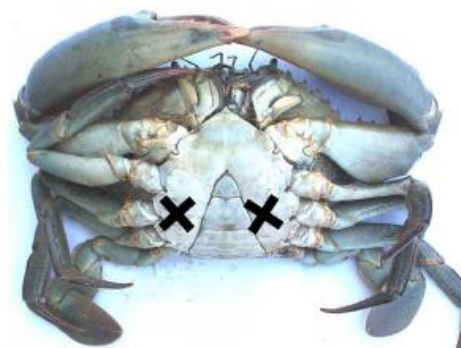
Place your thumbs on the middle segments (next to the 2nd walking legs and either side of the flap) and press gently (see **X** on diagram). If the shell has no give you can then press more firmly to see if there is any shell flex on either side.



If you wish you can test each of the six segments, but the middle segment (marked **X** on diagram) is the last one to harden up and if it is solid the others will also be (unless they have been damaged by previous thumb tests)

If the shell flexes at all on any segment it should be graded as **B GRADE**. *(Note in the NT it is illegal to sell a male mud crab if both of the middle segments flex).*

If there is no flex on the top or any bottom segments of the carapace the crab can be graded as **A GRADE**.



Female Shell Flex

The amount of flex evident in female mud crabs is measured only on the top of the carapace. When you press the carapace, if it is very recently moulted, sometimes there is also a very audible 'click' sound.

At all times be careful that the crabs claws cannot nip you when you are doing these tests as the claws can reach a long way.

Female Mud Crab Top Carapace Test

The standard way to test shell flex on the top carapace in a female mud crab, is to hold the crab in both hands, palms facing upwards and abdominal flap facing down (see diagram).



Place your thumbs on the carapace, in line with the widest part of the carapace and where the string is (or would be if the crab was tied up), and press gently (see X on diagram). If the shell has no give you can then press more firmly to see if there is any shell flex and an associated 'clicking' noise.

If clicking occurs the crab should be graded as **C GRADE**. *(Note in the NT it is illegal to sell a mud crab if both sides click. It will also not be accepted by many traders).*

If the shell has no give you can then press more firmly to see if there is any shell flex on either side.

If the shell flexes (but doesn't click), grade as **B GRADE**.

If the shell has no flex on the top carapace and doesn't click, the crab can be graded as **A GRADE**.



Further Information

Contact:

- C-AID Consultants – www.c-aid.com.au
- DAFF Queensland – www.daff.qld.gov.au
- Sydney Fish Market – www.sydneyfishmarket.com.au
- Your local industry body representative