



# THE GREAT CRAB SURVEY

I have been studying intertidal crabs for quite some time and now I am seeking the help of people all over Australia. I would like to know more about the distribution of crabs around our shores. The breeding habits of crabs and their growth patterns also offer a great topic for study.

The two surveys here have been written for school groups. However, if you live near the coast, or visit the coast for your holidays, you can help me by taking part in either one or both of these surveys.

All that you need to do is to visit an appropriate part of the coast, in this case an exposed rocky shoreline. Because you will not need to collect large numbers of crabs for the first survey, almost any type of rocky shore will do. Don't forget to check in your local newspaper or tide tables for tide times (you no doubt know that low tide is the best time to study intertidal animals, such as crabs).

By far the best place to find the numbers of crabs that you will need for the second survey is a rocky platform that has a lot of loose rocks on it. This is because loose rocks provide an ideal habitat for rocky-shore crabs.

## SURVEY 1 - DIVERSITY

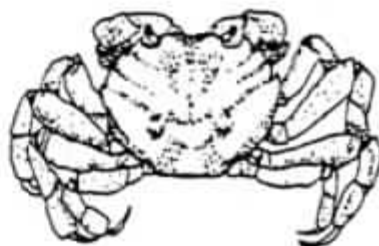
This survey is very simple. All that you need is a school group (anything from 10 to 60 kids), or if you are working by yourself it is a good idea to invite a few friends to help you. The more ground that you cover, the greater the chance of finding rare crabs. Eight common crabs are described and illustrated on the following pages. A Gould League of Victoria publication, called *Crabs - Survey Survival Book*, should also be useful in identifying crabs not shown here. It can be obtained by sending \$3.00 to the Gould League of Victoria, Box 446, Prahran, VICTORIA 3181.

Start your survey at the low tide shoreline (at low tide) and carefully work your way up to the high tide shoreline. Please note, the idea is not to collect a bucket full of crabs. When you find a crab, identify it and tick it off on the SURVEY RESULTS sheet provided. If you need to pick up a crab to get a better look at it, always be very careful not to harm it and put it back where you found it. Any crabs that you can't identify should also be recorded (9, 10, 11, 12, etc.) along with a careful description and drawing of the unknown crabs. You may also like to record some information of the abundance of the crabs that you find. Use the following symbols- D = Dominant (most common thing around), A = Abundant (many but not dominant), P = present (but not in great numbers), and R = rare.

Have fun!

Harry Brindahl

*Leptograpsodes octodentatus*



## SURVEY 2

In this survey, a large group (up to 30 kids) would be very useful. The idea is to collect as many crabs as you can. Then you have to identify, sex, measure and record other information about the crabs before you let them all go.

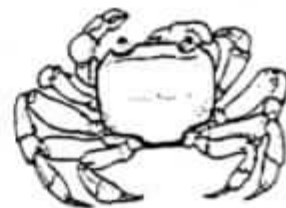
The best way to organize this activity is to have kids working in groups of three. Each group should have an ice cream bucket, ruler and copies of the following sheets (allow enough record sheets so that they can use a separate sheet for each different type of crab). A clipboard makes recording much easier and don't forget pencils or pens.

The best place for this activity is a rock platform covered with loose rocks. When low tide exposes the platform you have access to the thousands of crabs that live under the rocks.

Allocate each group a set working area on the rock platform. They should collect crabs in their area and put them in the ice cream bucket (no need for water in the bucket). The best way to work is with one kid lifting rocks and the other two catching crabs. Please remind kids to put rocks back as they found them.

About 15 minutes collecting (or when about 100 crabs have been collected) each group should sit down in their area. One by one, crabs should be taken from the bucket, identified, sexed, measured and checked for eggs or soft shells. When the data has been recorded, each crab should be released to find its own way home. As before, please return the data to:-

Harry Breidahl



# SURVEY INFORMATION

## WORKING WITH CRABS

Don't pick crabs up by their legs (a crab's legs can easily break off). Put all rocks back carefully (watch out for crushed fingers or crabs). All crabs must be released close to their homes.

## RECORDING DATA

**SEX:** use these symbols: **F** for female, **M** for male. Look underneath a crab to determine its sex.

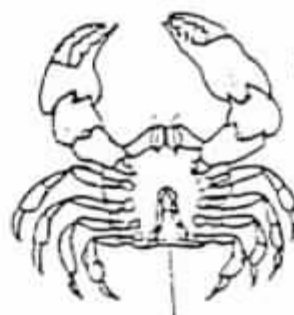
Females



small nippers

wide abdomen

Males

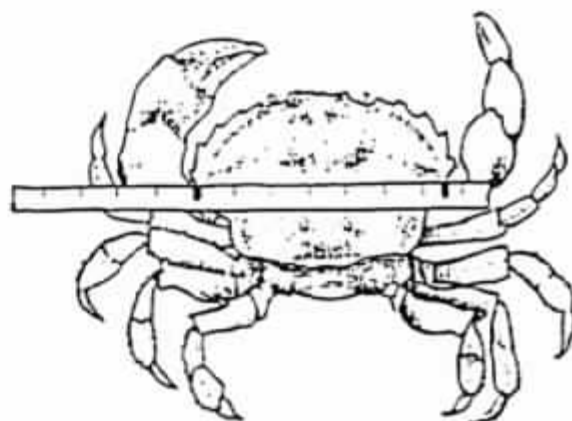


big nippers

narrow abdomen

**SIZE:** Use a ruler to measure the width at the widest part of the top of a crab's shell.

**SOFT:** Crabs grow by shedding their shells. When a crab sheds its old shell, its new one is soft for a few days while the crab grows. If you are lucky enough to find crabs in this condition it is most important that you record this information.



**EGGS:** Female crabs carry their eggs under their abdomens. The eggs look like bunches of small brown or orange grapes clustered under the abdomen. Again, if you are lucky enough to find egg carrying females it is most important that you record this information.



## CRAB SURVEY 1 IDENTIFICATION GUIDE

### Explanation of text

#### Name

Each crab is named in two ways. First is the common name. As these names may vary from place to place, scientific names have also been included. The scientific names are in *italics*.

#### Colour

This provides a general guide only. The colour of each species may vary greatly from place to place and even because of factors such as age and sex.

#### Common size

This should also be regarded as a general guide only. The shell of a crab is called a carapace and all measurements are taken across the carapace.

**Small** = 0 to 15mm across the carapace.

**Medium** = 15 to 50mm across the carapace.

**Large** = over 50mm across the carapace.

#### Habitat

Provides a description of the places where each species is commonly found.

#### Scale

x $\frac{1}{2}$  means that a crab has been illustrated as half its life size.

x2 means that a crab has been illustrated as twice its life size.

Where no scale factor is shown a crab has been illustrated close to life size.

### Smooth Shore-crab *Cyclograpsus audouinii*

**Colour** Pink-red to orange-red, no mottling or spots. **Common size** Medium. **Habitat** Under big rocks (over 400mm across) near the high tide shoreline. **Identification** (1) Carapace with smooth edges, no notches present. (2) Look for hairy tufts where the legs join the underside of the carapace.



### Purple-mottled Shore-crab *Cyclograpsus granulosus*

**Colour** Purple-red with white mottling. **Common size** Small to medium. **Habitat** Under rocks between high and low tide shorelines. May also be found on sheltered shores. **Identification** (1) Carapace with smooth edges, no notches present. (2) Colour and mottling. (3) No hairy tufts at the base of legs.


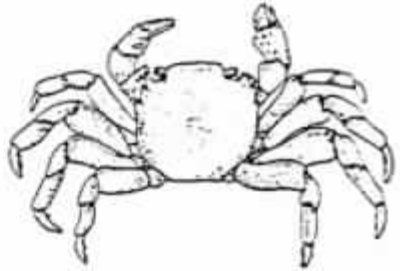





### Notched Shore-crab *Paragrapsus quadridentatus*

**Colour** Light yellow-brown with brown spots. **Common size** Small to medium. **Habitat** Under rocks near the low tide shoreline. **Identification** Look for one small notch on either side of the carapace.



## CRAB SURVEY 1 IDENTIFICATION GUIDE

<p><b>Little Shore-crab</b> <i>Brachynotus spinosus</i></p> <p><b>Colour</b> Many variations in colour occur, some examples are green, others light-brown. White markings of various sizes may be present on the top of the carapace. <b>Common size</b> Small. <b>Habitat</b> Under rocks, generally close to the low tide shoreline. Also found in small, muddy intertidal pools. <b>Identification</b> (1) Small size. (2) Square shape of carapace. (3) Look closely for three small notches on each side of the carapace.</p>	
<p><b>Common Shore-crab</b> <i>Leptograpsus variegatus</i></p> <p><b>Colour</b> Generally brightly coloured with purple, brown and red markings. The nippers of male crabs are often bright purple or orange. <b>Common size</b> Large. <b>Habitat</b> In cracks or under rock ledges near the low tide shoreline. <b>Identification</b> (1) Bright colours. (2) Very evasive, fast-moving crabs that are hard to catch (also known as the Swift-footed Shore Crab). (3) If you can catch one look for numerous ridges across the top of the carapace. Also look for three small notches on each side of the carapace.</p>	
<p><b>Edible Crab</b> <i>Carcinus maenas</i></p> <p><b>Colour</b> Generally dark green, some smaller examples may be red-orange. <b>Common size</b> Large. <b>Habitat</b> Under rocks between the low and high tide shorelines. Generally found under big rocks (over 400mm across) and sometimes found buried in sand or gravel under rocks. <b>Identification</b> Look for four obvious notches at the front of the carapace.</p>	
<p><b>Red Bait-crab</b> <i>Plagusia chabrus</i></p> <p><b>Colour</b> Generally a tan or olive colour with red-orange highlights. <b>Common size</b> Large. <b>Habitat</b> In rock crevices and among kelp at and below the low tide shoreline. <b>Identification</b> (1) Fine hairs cover most of the crab's body. (2) Look for two deep clefts between the eyes and three obvious notches on each side of the carapace (it is also known as the Cleft-fronted Shore Crab). (3) A large, fast-moving crab of the lowest tide levels.</p>	
<p><b>Hairy Stone-crab</b> <i>Lomis hirta</i></p> <p><b>Colour</b> Blue highlights show through a fine covering of light-brown hairs. <b>Common size</b> Medium. <b>Habitat</b> Found clinging to the underside of rocks at and below the low tide shoreline. <b>Identification</b> (1) Not a true crab and only has three pairs of walking legs (true crabs have four pairs). (2) Triangular shape of carapace. (3) Hairy covering and blue highlights.</p>	



# Kirner and the kids on the crab quest

CRABS came in for the counting by the thousands last week at Barwon Heads Bluff, only to scuttle for cover when they discovered their number was up.

But they couldn't escape the clutches of enthusiastic youngsters whose job it was to catch them.

Operation Crab Catch was so successful, in fact, that organisers wondered why they hadn't thought of it before.

According to Pauline Halpin from the Queenscliff Marine Studies Centre, children have an instinct for the hunt, that is after they get over the initial fear

of picking up the little creatures.

"To say no stone was left unturned is an understatement," Ms Halpin said.

And the catch, despite the continual rain, netted an estimated 4000 crabs — not a bad day's work in anyone's language.

About 340 local students from prep to Year 11 caught the crabs, then proceeded to identify their type and sex, measure their little bits and pieces, and finding out if any of the females were carrying eggs, before releasing the creatures back into their waters.

The information collected by the students will be used by scientists and naturalists to keep tabs on crab population along Victoria's coast and identify boundaries of distribution.

The Great Crab Count was part of the National Sea Week, the Queenscliff-founded activity designed to increase national recognition of the sea and coastline.

The State Minister for Conservation, Forests and Lands, Mrs Kirner, officially launched Sea Week before last Tuesday's crab hunt.



● The crab hunters gear up for the big quest.



● Joan Kirner with Connemara Primary School pupils Kimberly Lester and Renee Kahle.