

Meet the Crab Team!



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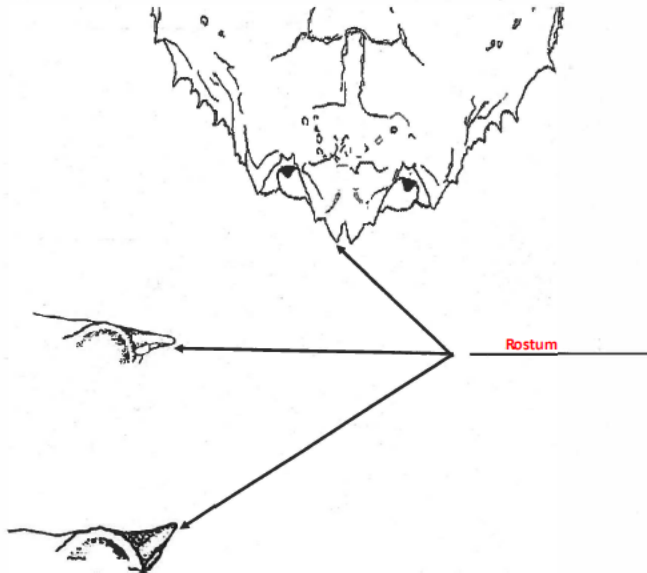
Crab Anatomy Homework Key

Name KEY Date _____

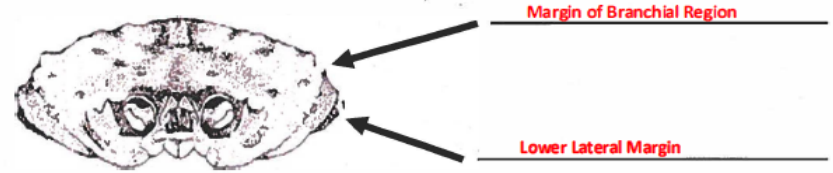
Crab Anatomy

PART 1: TANNER CRABS

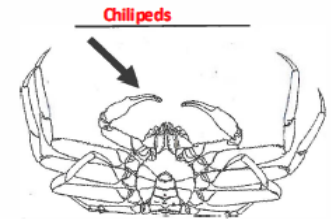
- 1) Please label the anatomical parts of this crab. Use all of your crab ID guide to find the answers.



- 2) Please label the anatomical parts of these crab. Use all of your crab ID guide to find the answers.



Epistome



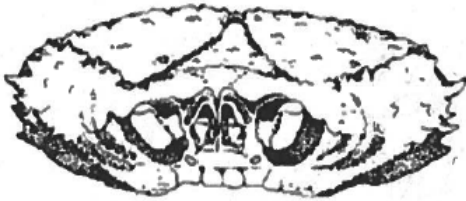
- 3) How many pairs of walking legs does a tanner crab have? Four Pairs

Crab Anatomy Homework Key

4) Match the Carapace to the character:

A) Lower Later Margin does NOT protrude beyond the margin of the brachial region.

B) Lower lateral Margin protrudes beyond the margin of the brachial region.



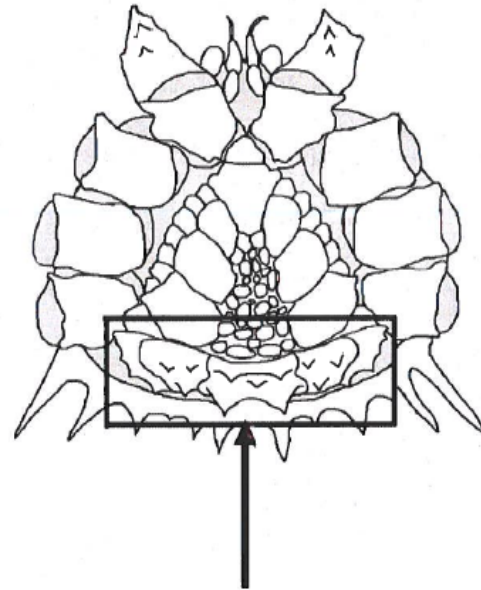
_____ A _____



_____ B _____

PART 2: KING CRABS

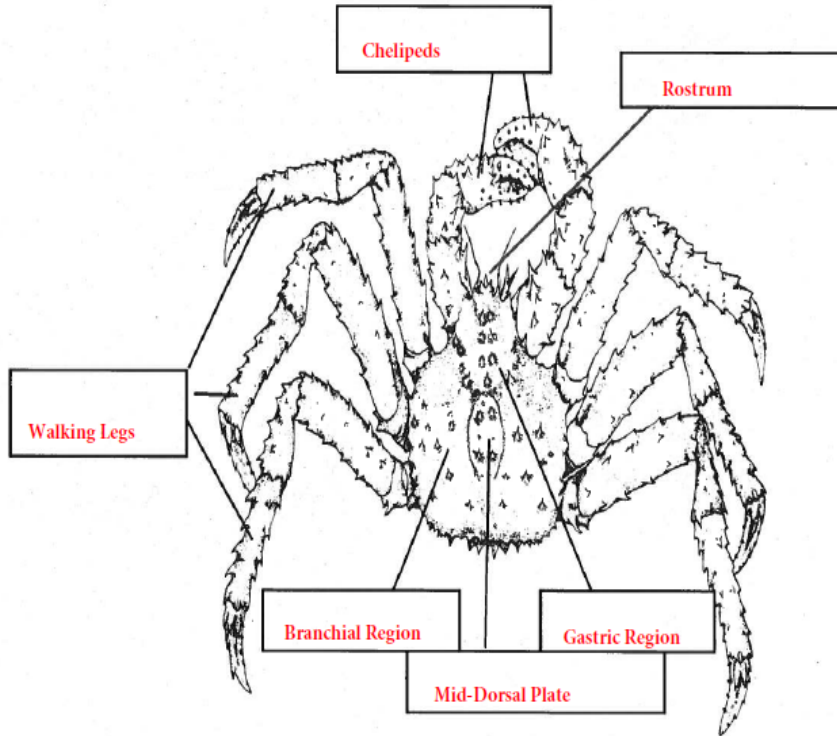
1) Please label the anatomical parts of this crab. Use all of your crab ID guide to find the answers.



_____ Second Abdominal Segment _____

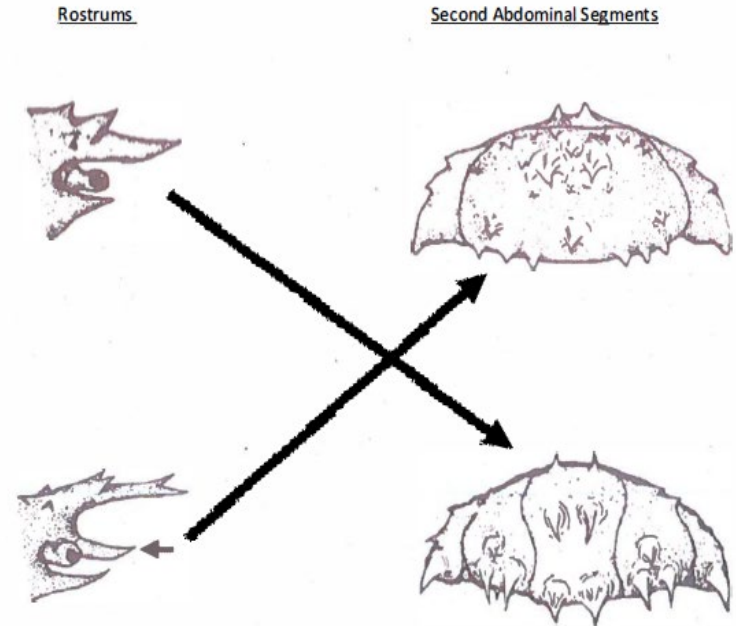
Crab Anatomy Homework Key

2) Please label the anatomical parts of this crab. Use all of your crab ID guide to find the answers.



3) How many walking legs does a king crab have? Three pairs

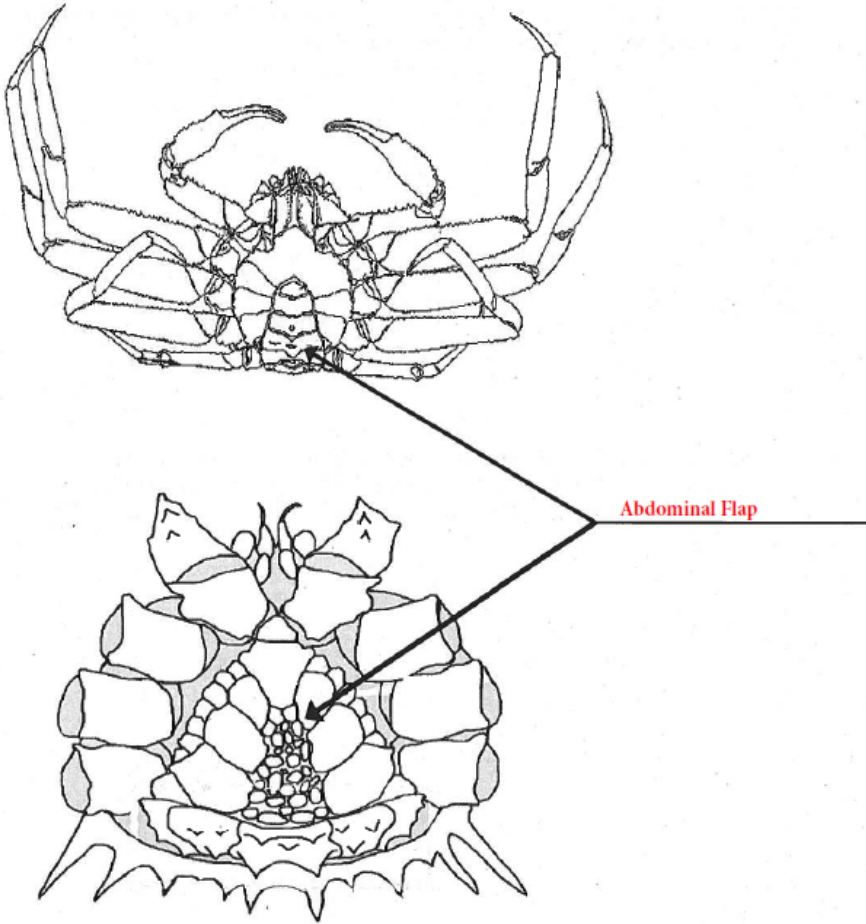
4) Match the correct rostrum with the correct second abdominal segment.



Crab Anatomy Homework Key

Part 3: Tanner and King Anatomy

1) Please label the anatomical part of these crabs. Use all of your crab ID guide to find the answers.



Part 4: Bonus Critical thinking question

Based on the knowledge you have gained use your species identification manual to answer the following questions (written text and/or sketches may be accepted):

- 1) What are the **two tanner crabs that occur at the deepest depths**? What are the anatomical characteristics you have just reviewed that sets these deeper tanner species apart from the two other tanner species in your key?

Tanneri tanner crab (20-1500m)
Angulatus tanner crab (75-1500m)

***Lower lateral margin of carapace NOT protruding beyond margin of branchial region**

- 2) What are the **two king crabs that occur in the deepest depths**? What are the anatomical characteristics you have just reviewed that sets these deeper king species apart from the two other king species in your key?

Golden/Brown king crab (50-700m)
Couesi king crab (200-1500m)

***Rostrum forked**
***Second abdominal segment covered by 3 plates**

North Pacific Observer Program

A photograph of a fishing vessel named "NORTHWESTERN" docked at a pier. The vessel is white with a blue stripe and has the name "NORTHWESTERN" written on its side. To the right of the vessel, there are several large, stacked metal crab traps. The traps are filled with red and blue buoys. In the foreground, two white seagulls are perched on a white railing. The background shows a body of water and a range of mountains under a clear sky. The overall scene is captured in a soft, golden light, suggesting either sunrise or sunset.

CRAB IDENTIFICATION

The Key Contains 20 Species or Species Groups

- ▶ Eight Prohibited Species of Crab
 - ▶ Must be measured and sexed by observers if found in species composition sample
- ▶ Twelve Non-Prohibited Species
- ▶ May not be consumed or retained on vessel

Prohibited Crab Species

Tanner Crabs

Shallow Water Tanner Crabs

- Bairdi Tanner crab
- Opilio Tanner crab

Deep Water Tanner Crabs

- Tanneri Tanner crab
- Angulatus Tanner crab

King Crabs

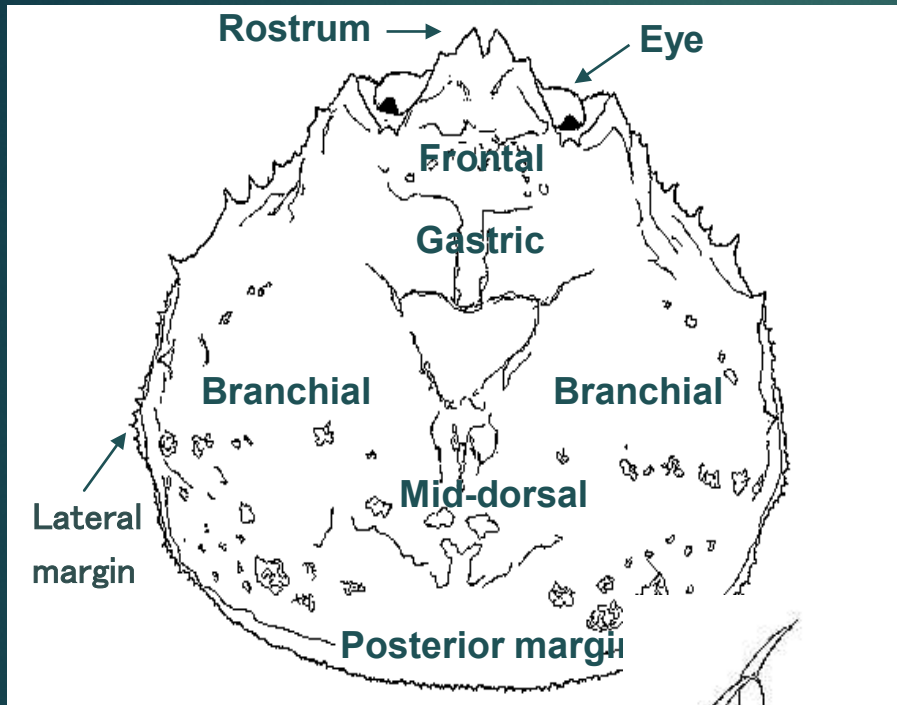
Shallow Water King Crabs

- Red King crab
- Blue King crab

Deep Water King Crabs

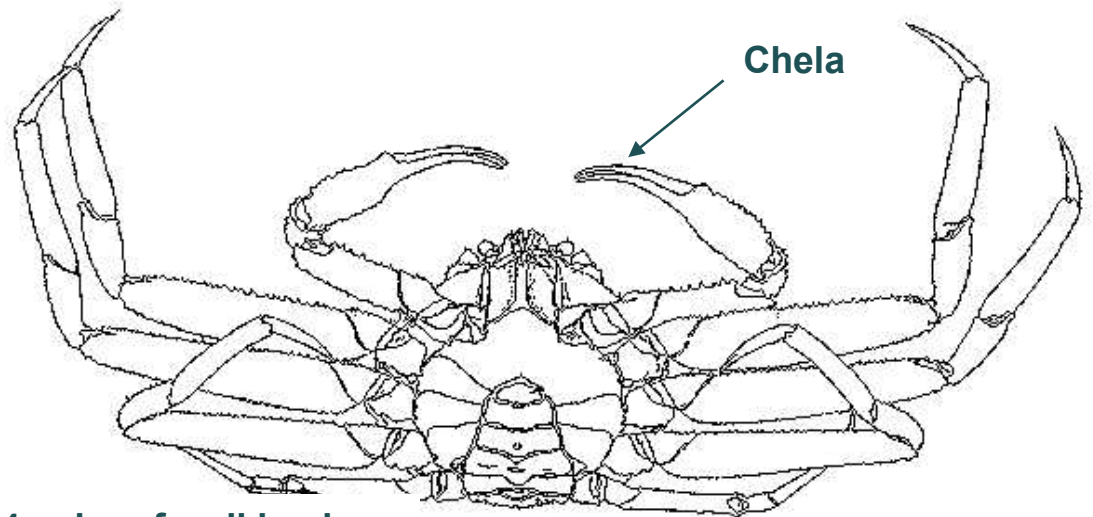
- Brown King crab
- Couesi King crab

Anatomy of the Tanner Crab



(L.S. Jademec)

■ Note: Look at Branchial Ridge vs. Branchial Region



4 pairs of walking legs

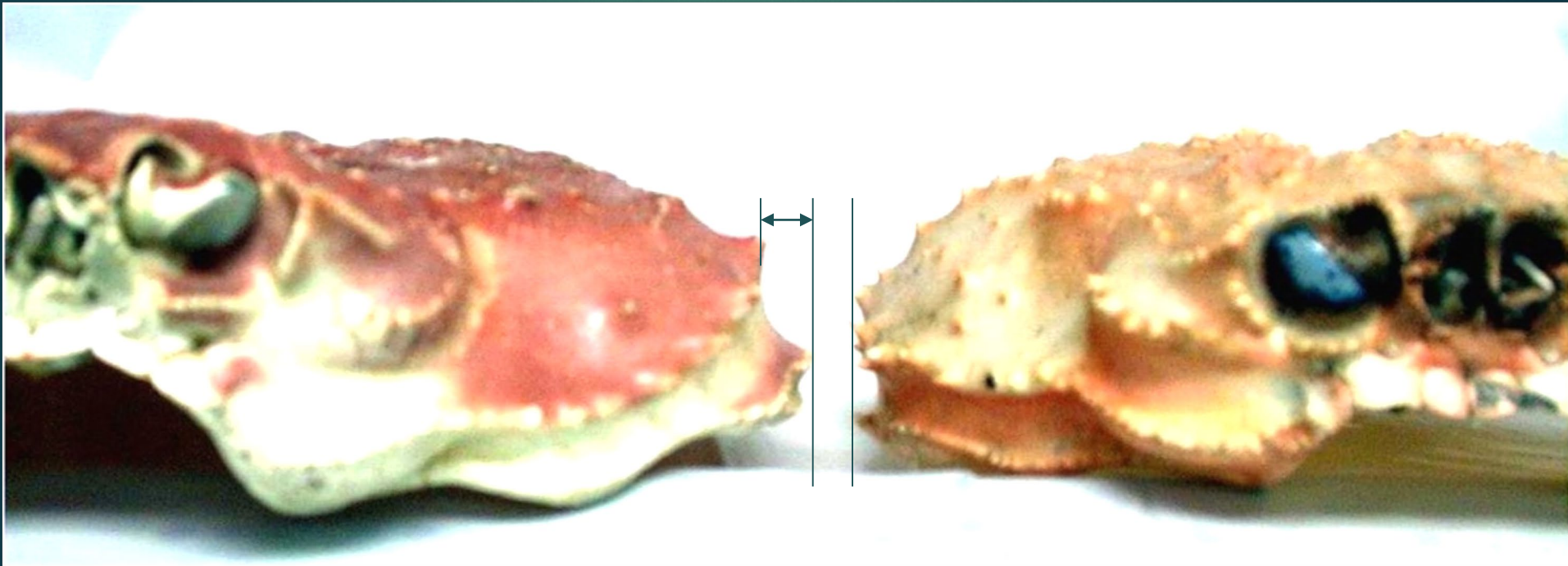
Shallow Vs. Deep Water Tanner Crab

	<u>Lower Lateral Margin</u>	<u>Branchial Ridges</u>	<u>Coloration</u>
Shallow Water	DOES protrude beyond Branchial region	Not Prominent	Ventral coloration light
Deep Water	Does NOT Protrude beyond Branchial region	Prominent Branchial ridge	Coloration uniform

Lower Lateral Margins

Shallow Water

Deep Water



Branchial Regions & Ridges

Shallow Water

Deep Water



Shallow Water Tanner Crab



Bairdi Tanner Crab

- 4 pairs of walking legs
- Lower lateral margin protrudes beyond branchial region



- Carapace wider than it is long



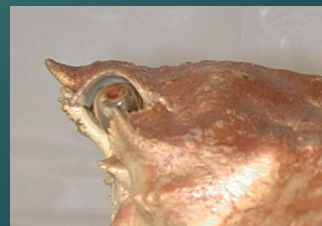
- Epistome "M" Shaped



- Tips of rostrum sharply pointed and tilted upward



- Eyes usually **RED**

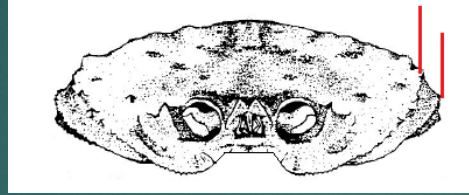


Bairdi Tanner Crab

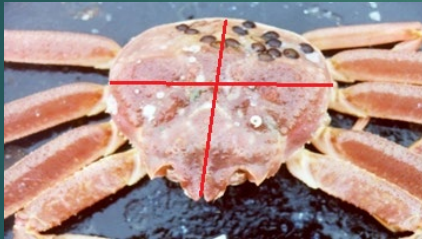


Opilio Tanner Crab

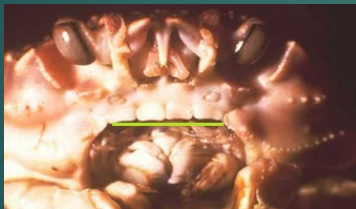
- 4 pairs of walking legs
- Lower lateral margin protrudes beyond branchial region



- Width and length of carapace about equal



- Epistome margin fairly straight & even



- Tips of rostrum rounded and almost horizontal



- Eyes usually **GREEN**



Opilio Tanner Crab



Opilio or Bairdi ???

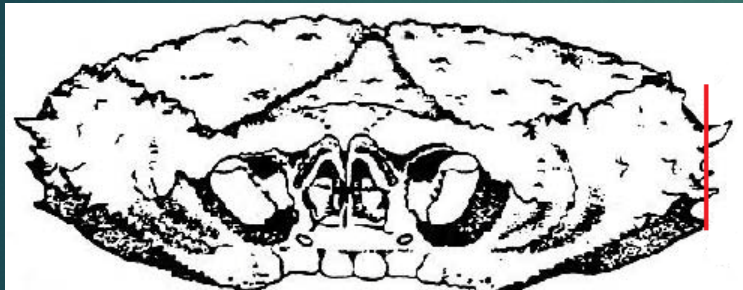


Deep Water Tanner Crab



Tanneri Tanner crab

- 4 pairs of walking legs
- Lateral Margin does NOT protrude beyond branchial region



- Branchial region swollen with deep groove at mid line
- Prominent branchial ridges form a “U” with 2 spines at intersection



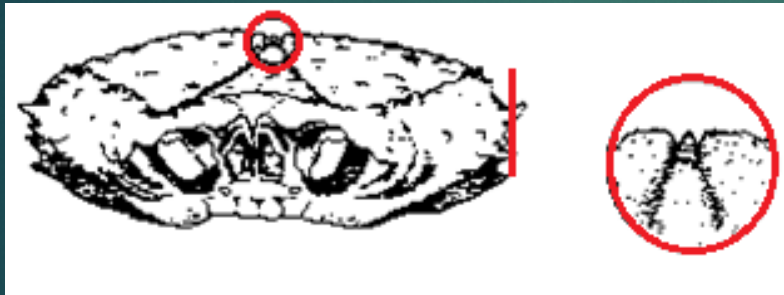
- Tips of rostrum sharply pointed and tilted upward

Tanneri Tanner crab



Angulatus Tanner Crab

- 4 pairs of walking legs
- Lateral Margin does NOT protrude beyond branchial region
- Branchial region slightly swollen with shallow groove and central ridge at mid line



- Prominent branchial ridges form triangular point or “V” with a single spine at the intersection



- Tips of rostrum rounded and usually horizontal

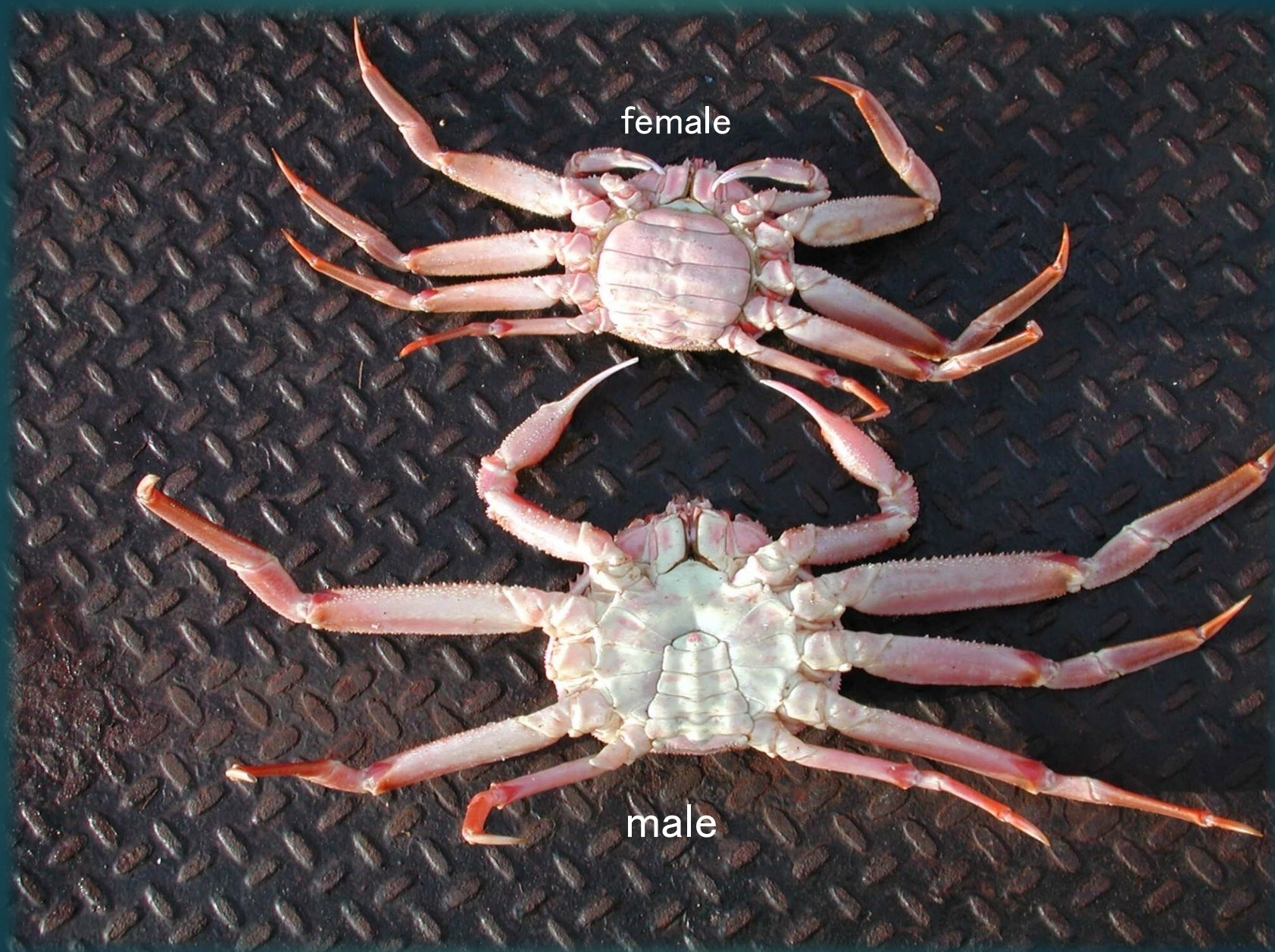
Angulatus Tanner Crab



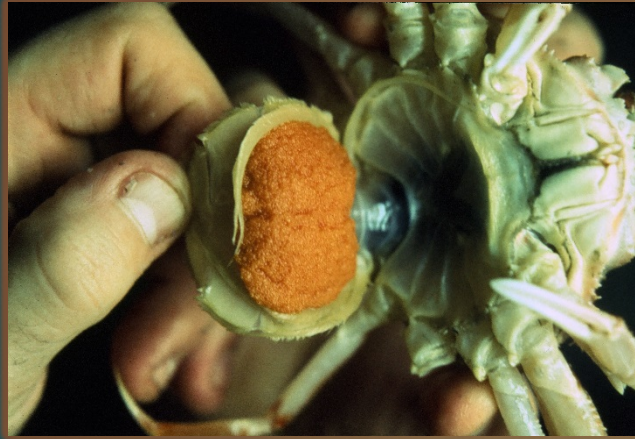
Tanneri or Angulatus?



Determining the Sex of Tanner crabs



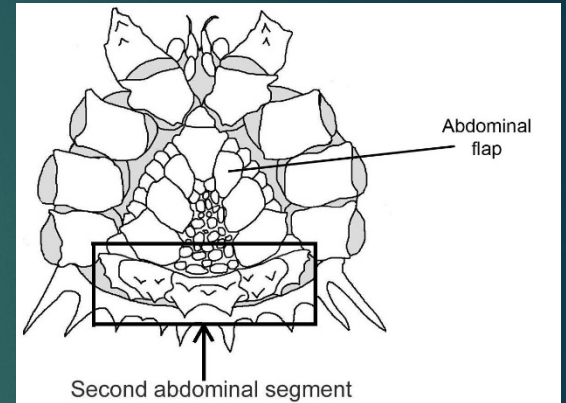
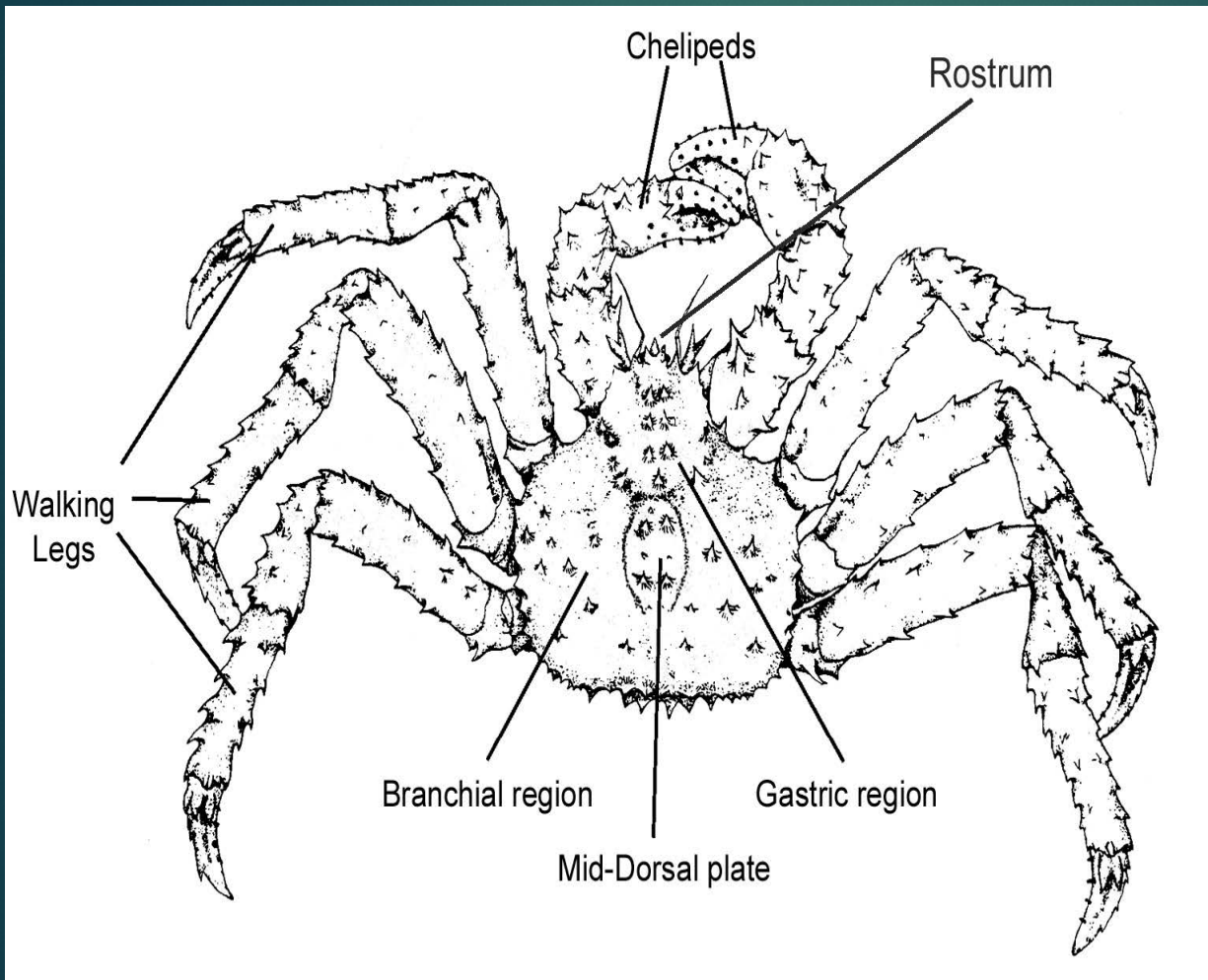
Female Tanner with Eggs



King Crab



King Crab Anatomy



■ Note: Second abdominal segment is on back of crab not bottom

Shallow Vs. Deep Water King Crab

Shallow Water

5 Abdominal plates
on 2nd abdominal
segment

Rostrum ending in a
single thorn-like
spine

NO ventral
rostrum spine

Light ventral
side

Deep Water

3 Abdominal plates
on 2nd abdominal
segment

Rostrum forked

Ventral
rostrum spine

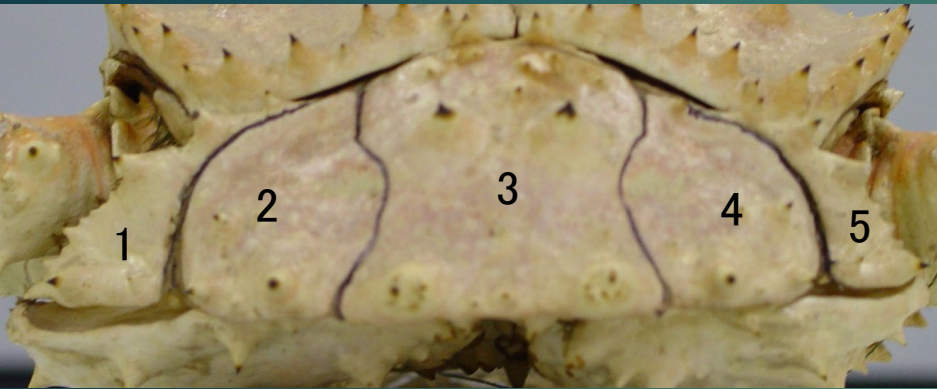
Dark ventral
side

King Crab

2nd Abdominal Segment

Shallow Water

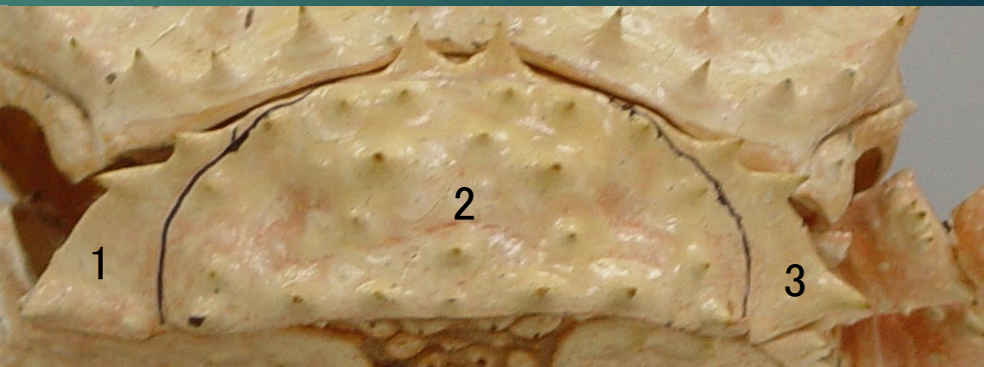
Deep Water



5 plates



3 plates



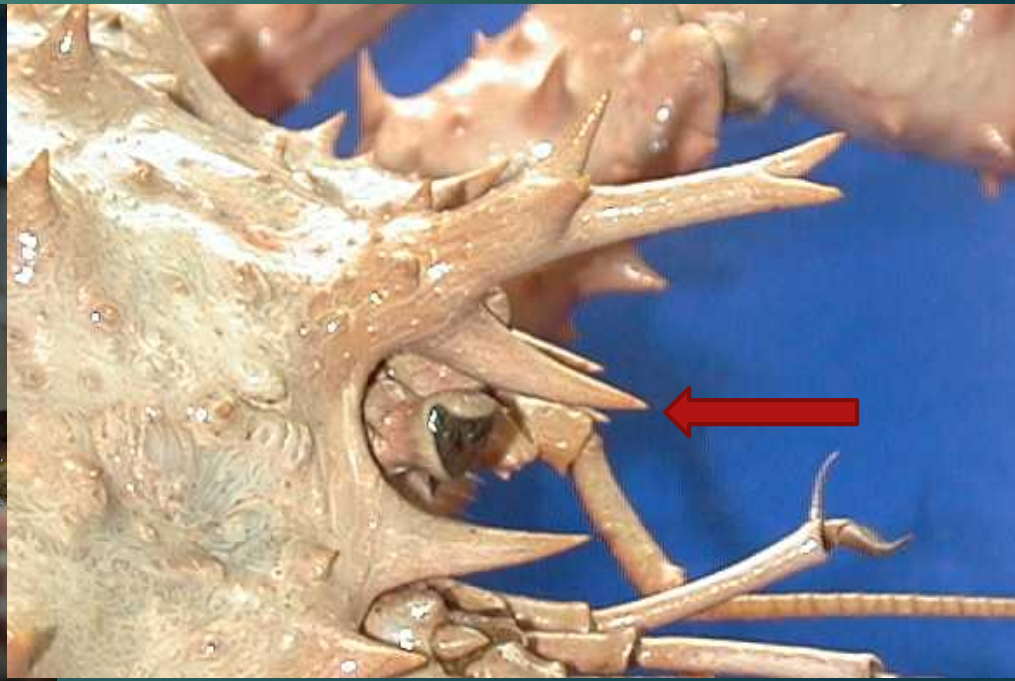
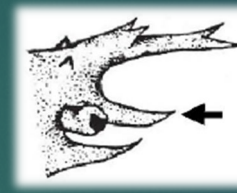
King Crab

Rostrum

Shallow Water



Deep Water



Shallow Water Kings

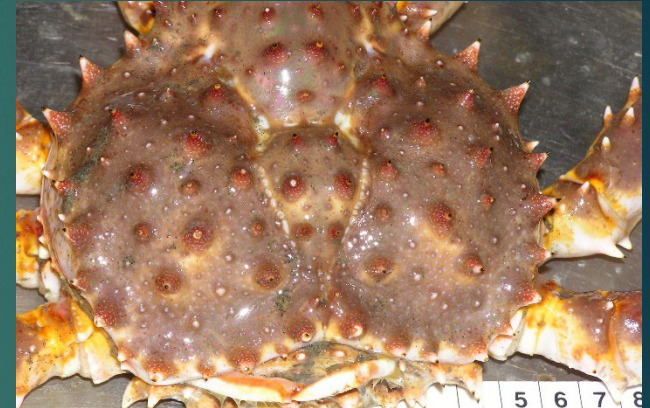
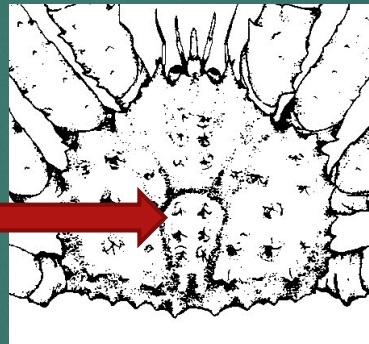


Red King crab

- 3 pairs of walking legs
- 5 separate abdominal plates



- 3 paired prominent spines on mid-dorsal plate



- Rostrum long with 4 - 5 spines, ending in a single spine



Red King crab

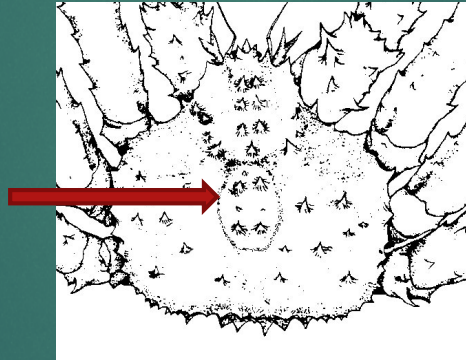


Blue King crab

- 3 pairs of walking legs
- 5 separate abdominal plates



- 2 pairs of prominent spines on mid-dorsal plate



- Rostrum: Short ending with a single spine

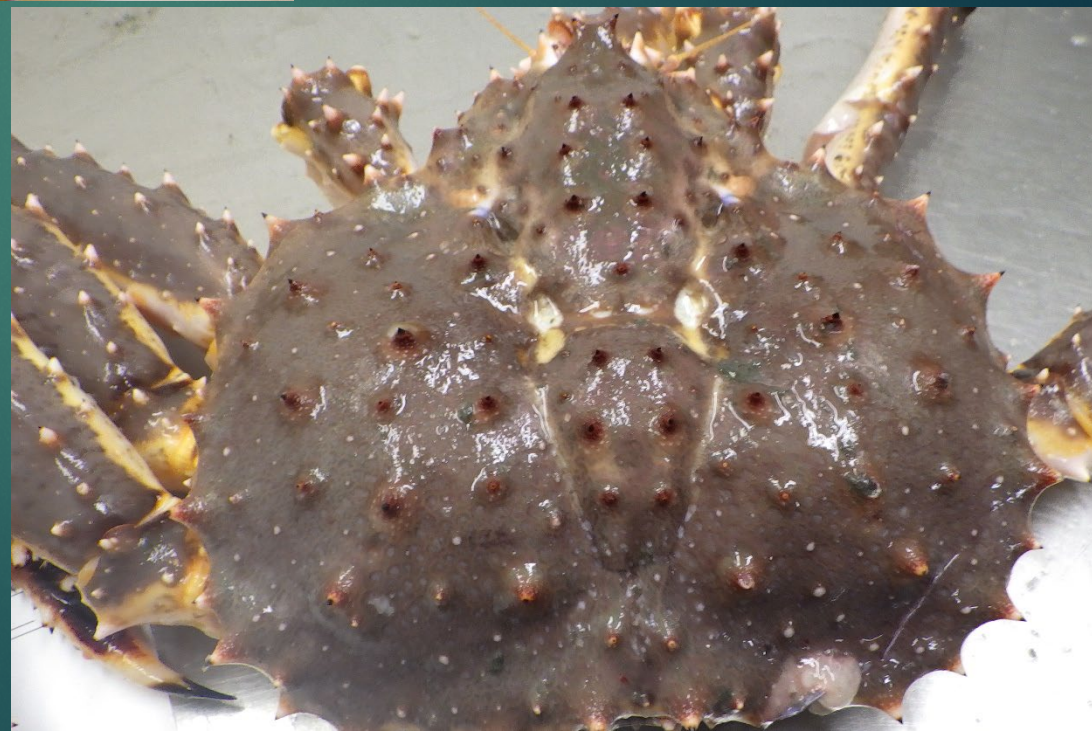
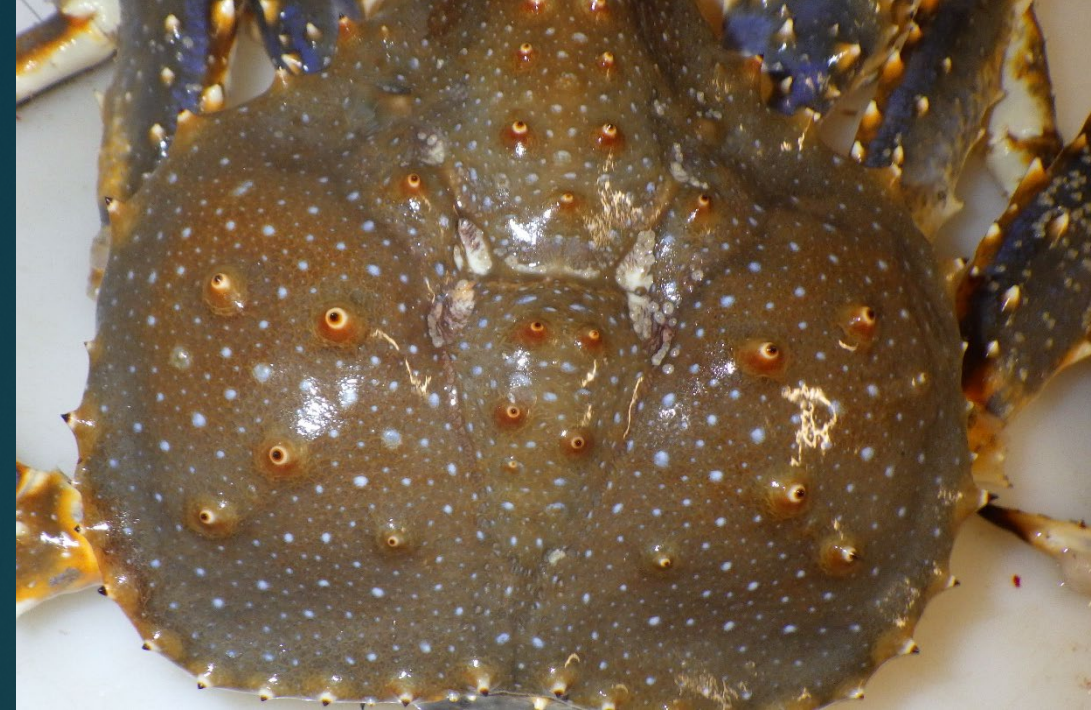


Blue King Crab



Blue King Crab

Color Variance



King crab... Red or Blue??



Deep Water Kings



Golden or Brown King crab

- 3 pairs of walking legs
- 3 separate abdominal plates
- Rostrum with 9-10 spines in a 2-1-2-1-2-1 configuration and a ventral rostrum spine



- Spines on lateral margin of carapace are about equal in length to those on carapace surface

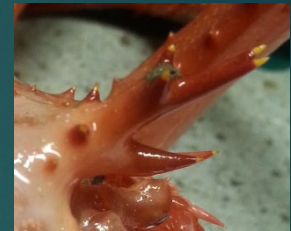


Golden or Brown King Crab

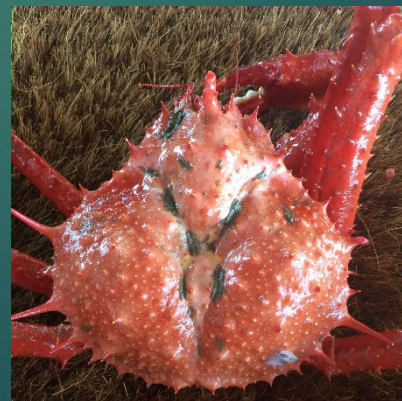


Couesi King crab

- 3 pairs of walking legs
- 3 separate abdominal plates
- 5-7 spines on rostrum, tip is usually double pointed, includes a ventral spine



- Long spines on lateral margin of carapace



Couesi King crab



Couesi

Color Variance

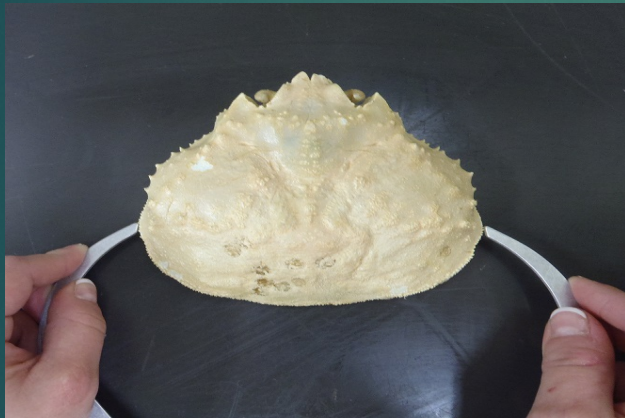


Determining the Sex of King crabs



Tanner Crab Width Measurement

Shallow Water



Deep Water



Manual
Instructions
p. 12-3 through
12-5

Crab Measurement Form

Species Name	Haul/Sample Number	Species Name	Haul/Sample Number
Males	Females	Males	Females
		208	
		203	
		198	
		193	
		188	
		183	
		178	
		173	
		168	
		163	
		158	
		153	
		148	
		143	
		138	
		133	
		128	
		123	
		118	
		113	
		108	
		103	
		98	
		93	
		88	
		83	
		78	
		73	
		68	
		63	
		58	
		53	
		48	
		43	
		38	
		33	
		28	
		23	
		18	
		13	
		08	
		03	

Start Date

Measured length is 113 mm.

Non Prohibited Species of Crab Found in Your Key

- Hermit crab
- Scaled crab
- Box crab
- Fuzzy crab
- Rhinoceros crab
- *Paralomis multispina*
- *Paralomis verrilli*
- Dungeness crab
- Korean Horsehair crab
- Telmessus crab
- Lyre crabs
- Decorator crab

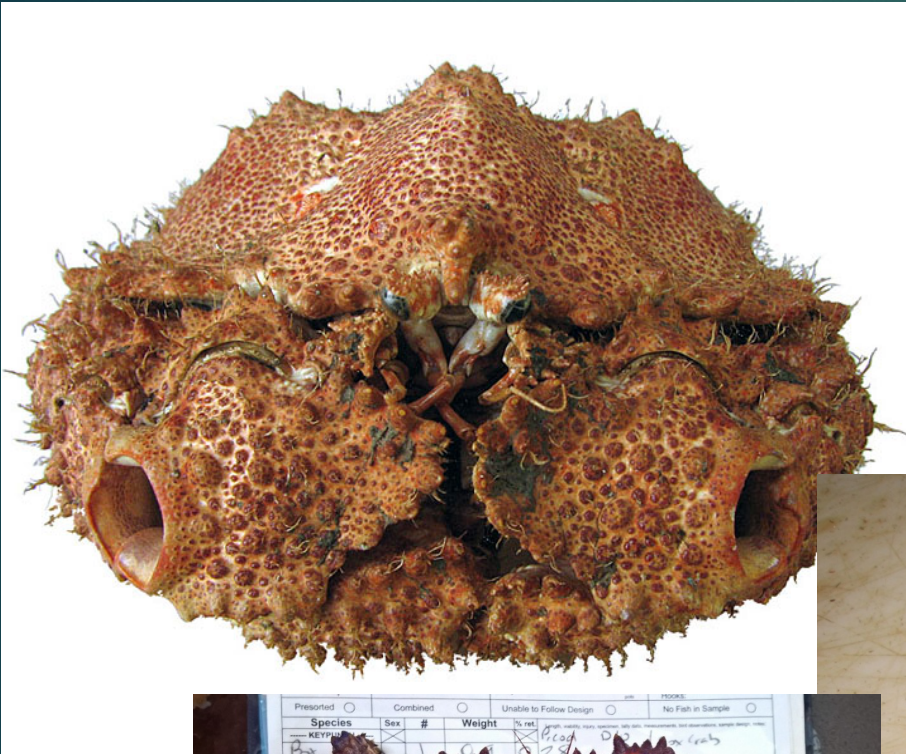
Hermit crab



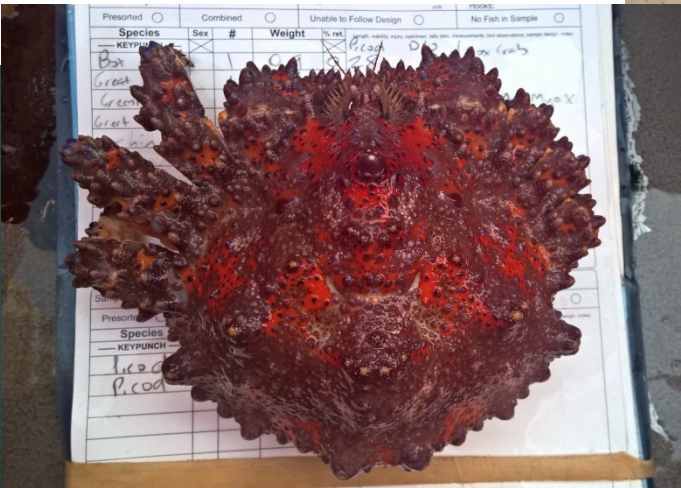
Scaled crab



Box crab



- Box shaped and heavily calcified carapace.
- Breathing ports on claws.



Fuzzy Crab vs Rhino Crab

Fuzzy



Fuzzy Crab

- Abdomen not segmented or calcified.
- Claws usually orange (but not always).

Rhino Crab

- Triangular carapace.
- Round ball surrounded by deep semicircular grooves



Rhino

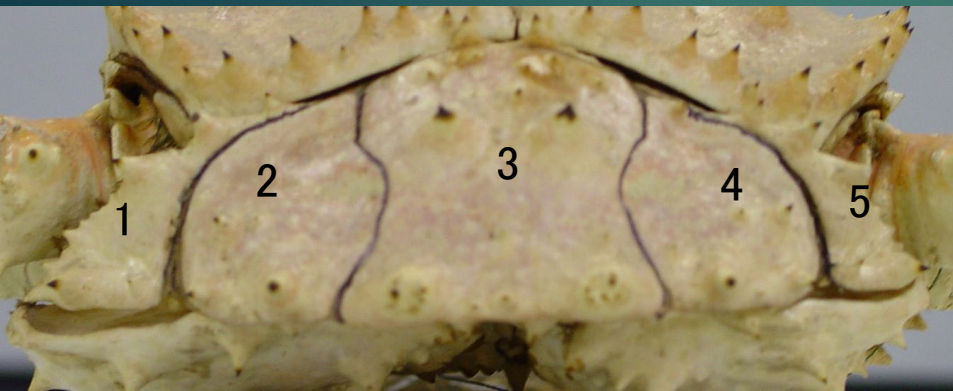


King Crab vs Paralomis spp.

2nd abdominal segment

Shallow King

5 plates



Paralomis *Multispina*

1 plate



Deep King

3 plates



Paralomis *verrilli*

1 plate



Paralomis *multispina* vs Paralmois *verrilli*



Dungeness vs Pygmy Crab



Dungeness Crab

- 10 spines on front margin of carapace.
- Carapace smooth and oval shaped.
- Mostly caught in SE Alaska.

Pygmy Crab

- Tiny crab.
- Black tipped claws.

*****NOTE- This species is to be recorded in data as Crab Unid**



Korean Horsehair vs Telmessus



Korean Horsehair

Korean Horsehair Crab

- White tipped claws.
- 7 spines posterior of eye that point forward.

Telmessus Crab

- Black tipped claws.
- 6 spines posterior of eye that point laterally.

Telmessus Crab



Lyre Crab vs Decorator Crab



Lyre Crab (Unidentified)



Decorator Crab



Crab Handling

- Grab from the back
- Carry them by at least two legs
- Place upside down to calm them



Crab ID Form

Crab Species Description Form

Vessel name: <u>Crab ID</u>	Vessel code: <u>Form</u>
Species common name: <u>Brown/Golden King Crab</u>	
Observer: <u>Monica Mearns</u>	Cruise: <u>112233</u>
Haul #: <u>123</u>	Carapace size: <u>98</u>
Specimen collected? <u>No</u>	Weight: <u>0.38 kg</u>

CRABS:

How many pairs of walking legs does the crab have? 3

*If 3 pairs of walking legs:

How many plates are on the 2nd abdominal segment? 1 3 5 NA

Rostrum shape: Single point Forked

Ventral rostrum: Present Absent

*If 4 pairs of walking legs:

Does the lateral margin extend past the brachial ridge? Yes No NA

Epistome shape: "M" shaped Straight

Rostrum (profile): Uprturned Flat

Draw the crab here, including a full view of the carapace as well as a detailed view of the rostrum:



Field characteristics important in recognizing this species (carapace shape, spines, bumps, hairs or decoration):

Spines all over relatively equal length. Rostrum w/ 9 spines in 1:2:1 configuration. Golden brown in color.