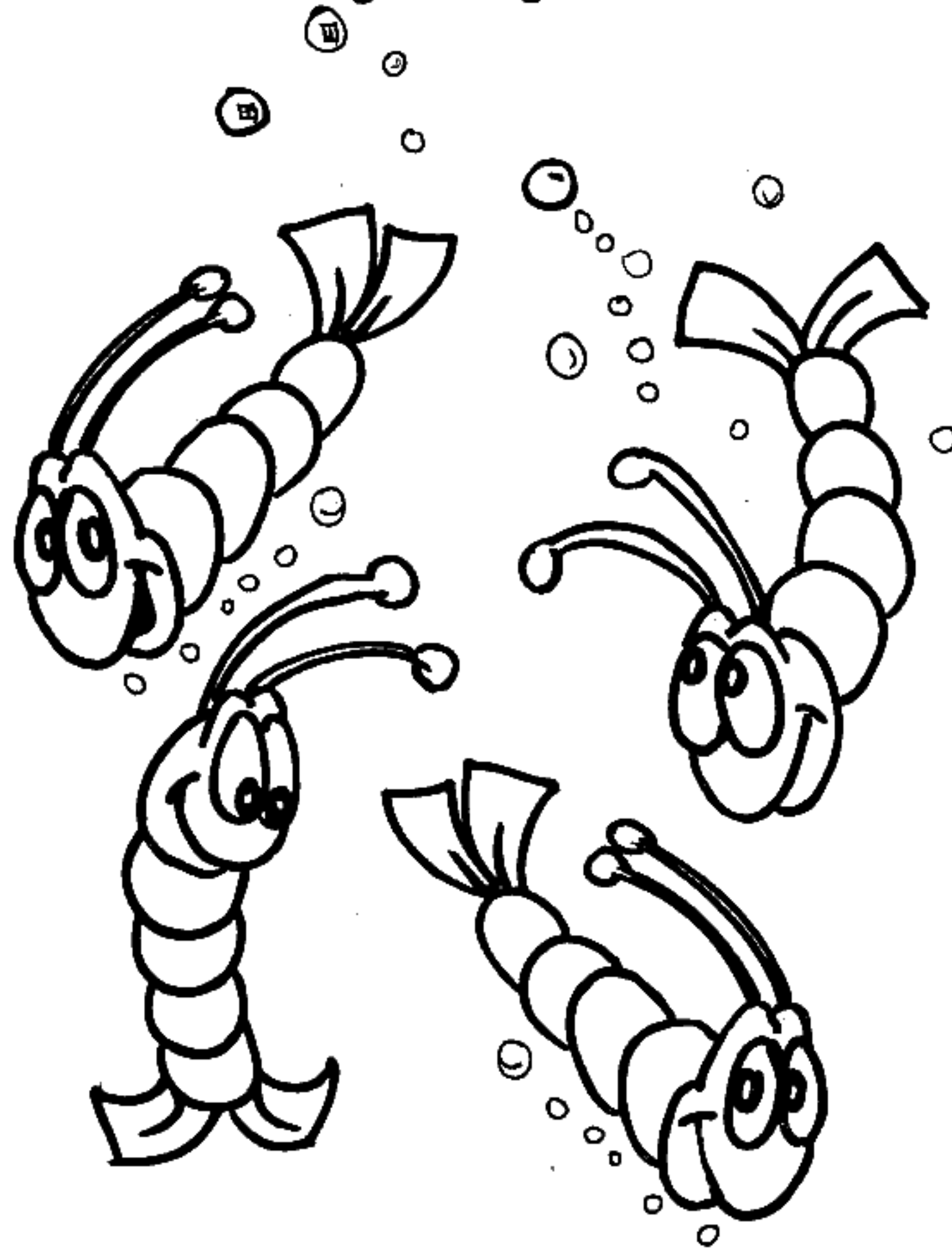


Shrimply Fun!



The Shrimp Fishery in the Gulf of Mexico: Activity and Coloring Book



U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE
Southeast Fisheries Science Center
Galveston Laboratory
4700 Avenue U
Galveston, TX 77551-5997

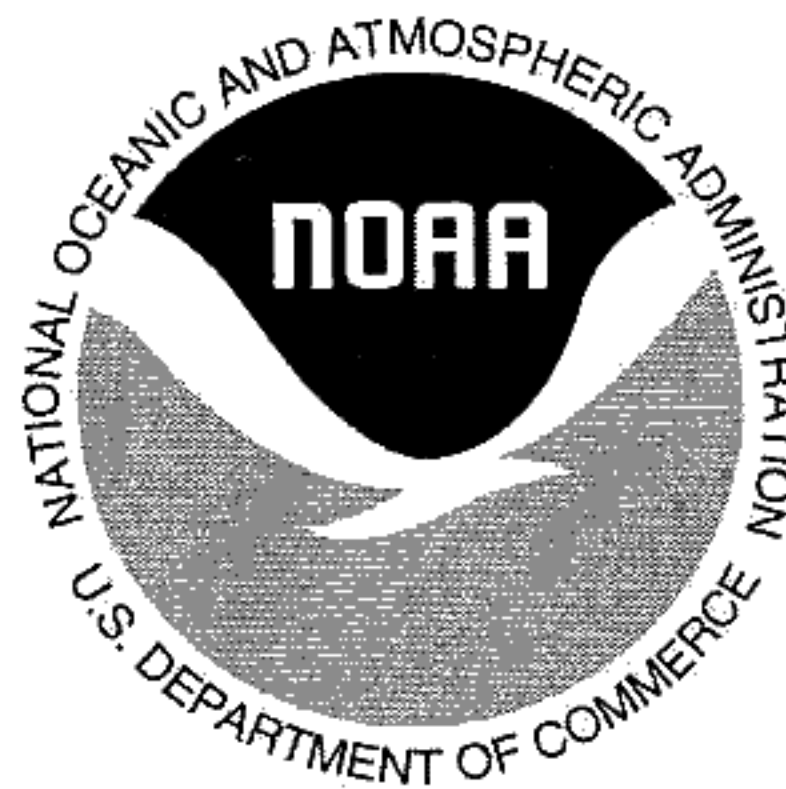


TEXAS SEAPORT MUSEUM
a Project of Galveston Historical Foundation
Pier 21, Number 8
Galveston, TX 77550

SHRIMPPLY FUN!

The Shrimp Fishery in the Gulf of Mexico

Activity and Coloring Book



by
Jo A. Williams

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September 2002

Note From the Author

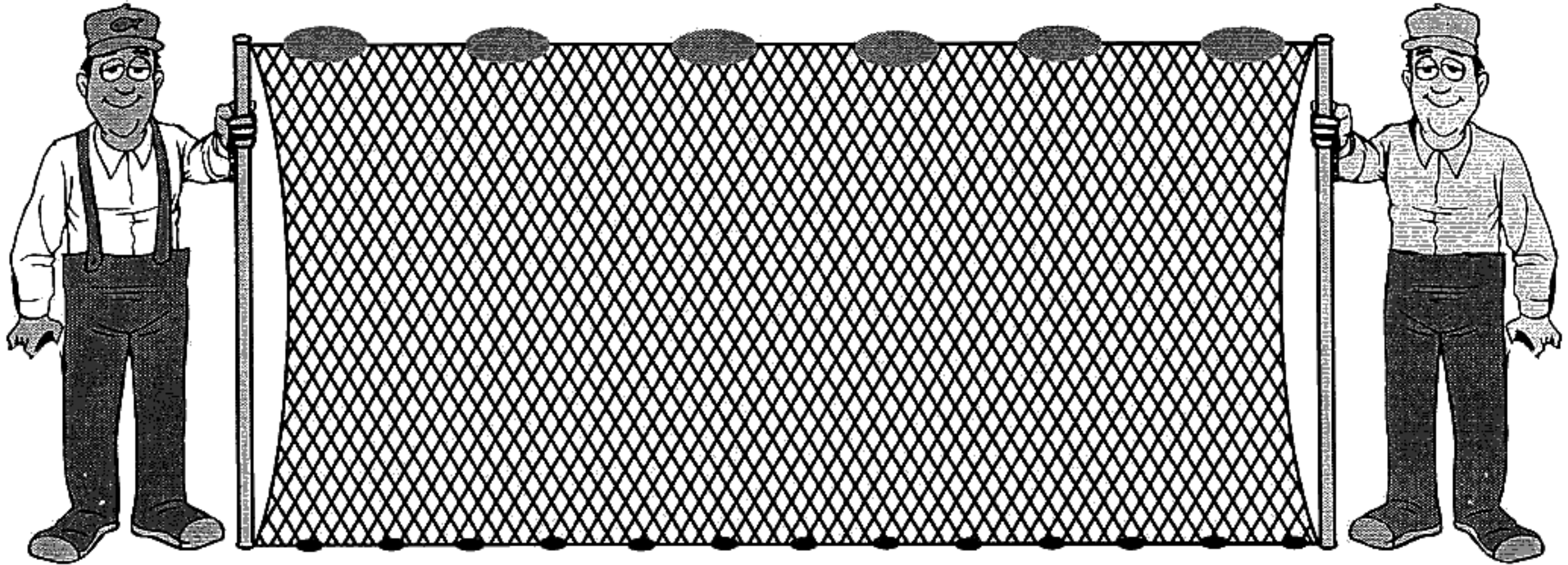
This coloring and activity book is meant for children of all ages. Some puzzles may be too difficult for younger children, but they can still enjoy coloring the pictures. Older children (and adults) who may think that they have outgrown coloring can still learn a lot about the Gulf of Mexico shrimp fishery by reading the text.

I would like to extend special thanks to the following people who assisted in the preparation and review of this booklet: Jake Indelicato, Katy Denton, Becky Benoit and Jim Nance.

The Gulf of Mexico Shrimp Fishery

How It All Began!

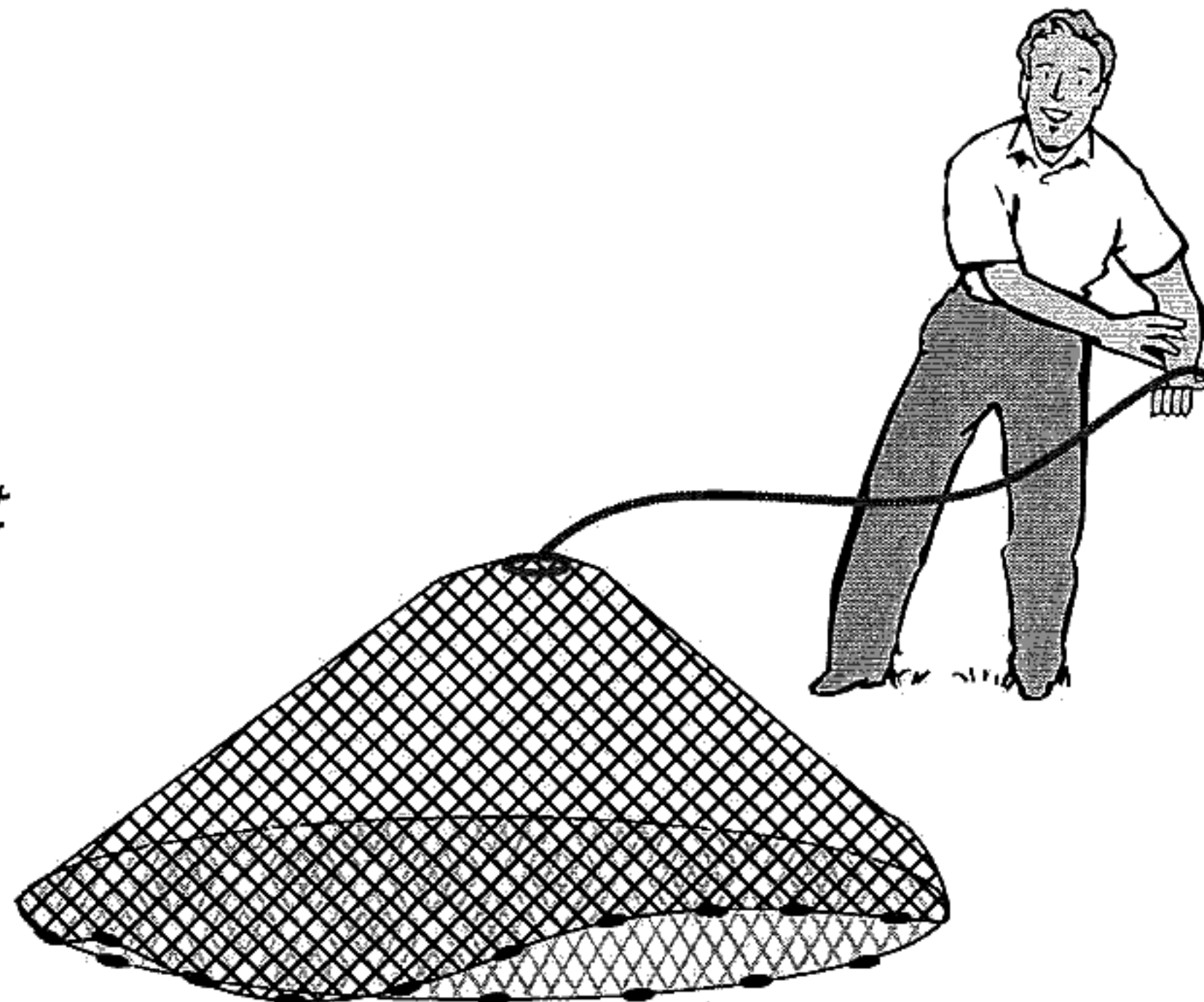
Many people like to eat shrimp, but they do not think about where they come from. People have been catching shrimp to eat for hundreds of years.



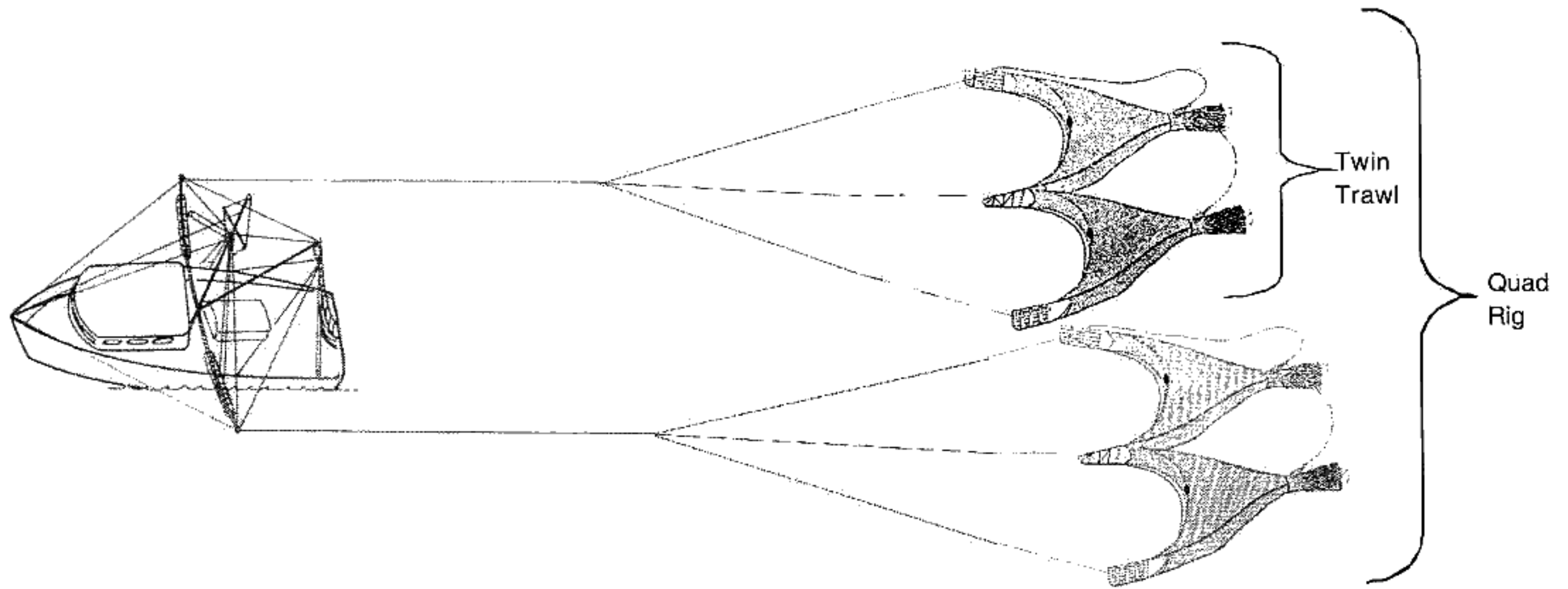
Haul Seine

At first, they used cast nets and haul seines to catch shrimp. Cast nets are large round nets that are thrown or cast out into the water. Haul seines are large nets that are pulled through the water by two or more men. These nets had to be used in shallow water near the shore. Most of the shrimp that were caught were sold fresh, canned or dried.

Cast Net



In the early 1900's, men began using large nets, called otter trawls that were pulled from the back of a boat. Engine powered boats allowed the fishermen to travel further away from the shore and into deeper waters where they could catch different kinds of shrimp that were not found in the shallow water near the beach.



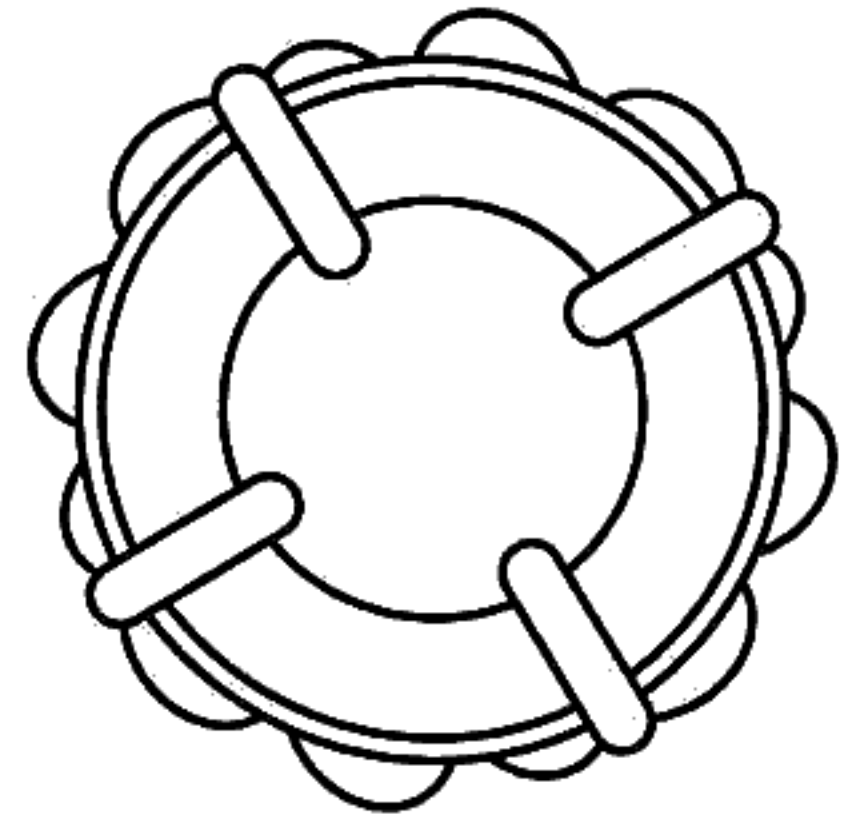
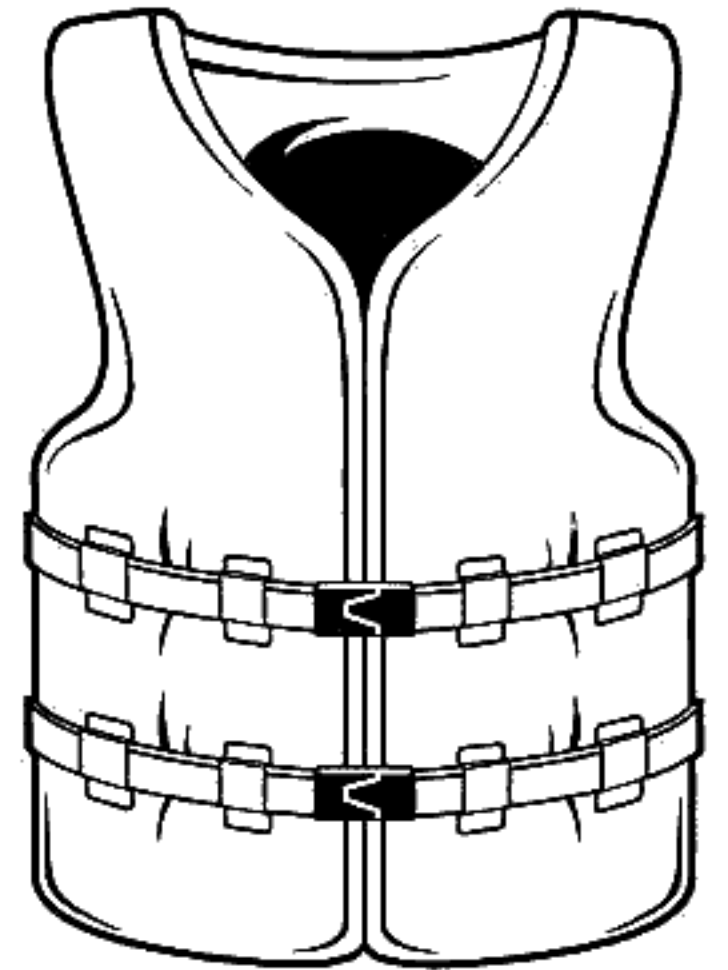
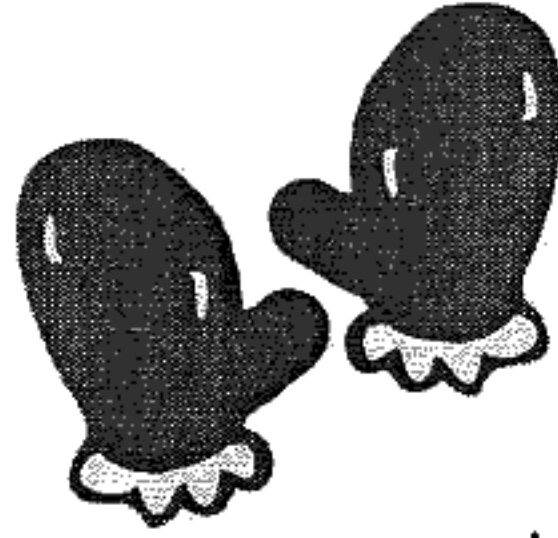
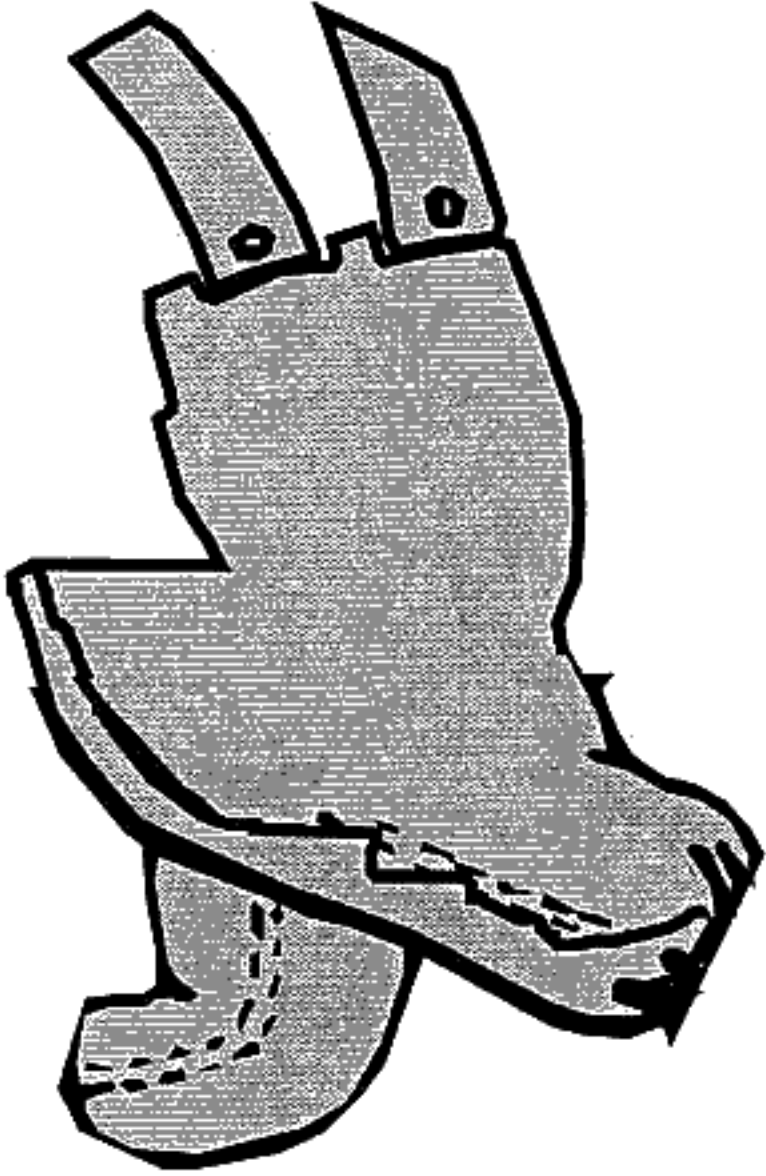
Shrimp Boat Pulling 4 Otter Trawls

There are many different kinds of shrimp in the world, but fishermen in the southeastern United States catch mostly Brown Shrimp, White Shrimp or Pink Shrimp. The shrimp fishermen work very hard to catch the shrimp. By using ice or freezers on their boats to keep the shrimp catch fresh, they can stay at sea for many weeks at a time. They can pull up to four nets on their boats and often work throughout the day and night, so that we can have fresh shrimp to eat!



Fishing Fashions!

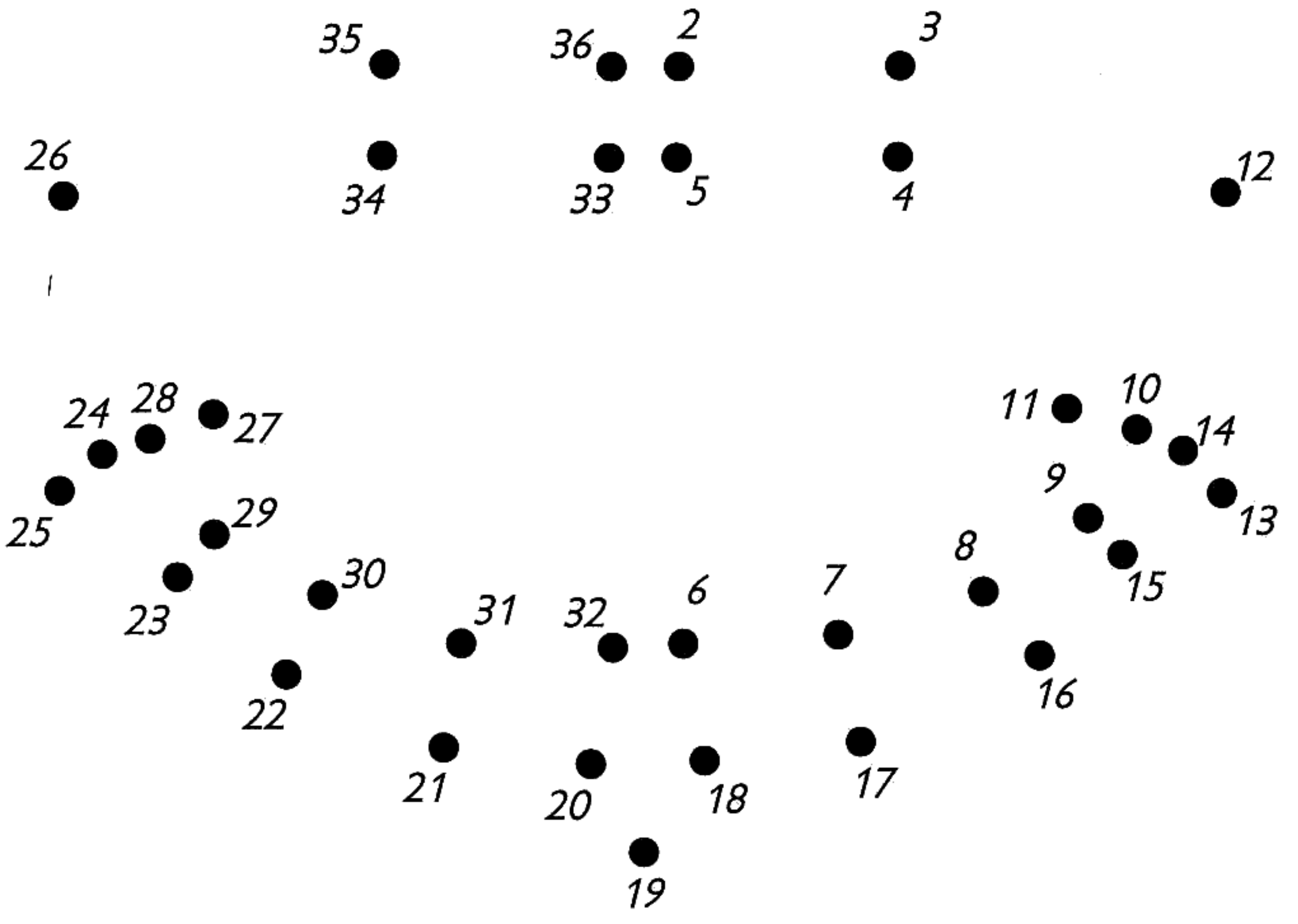
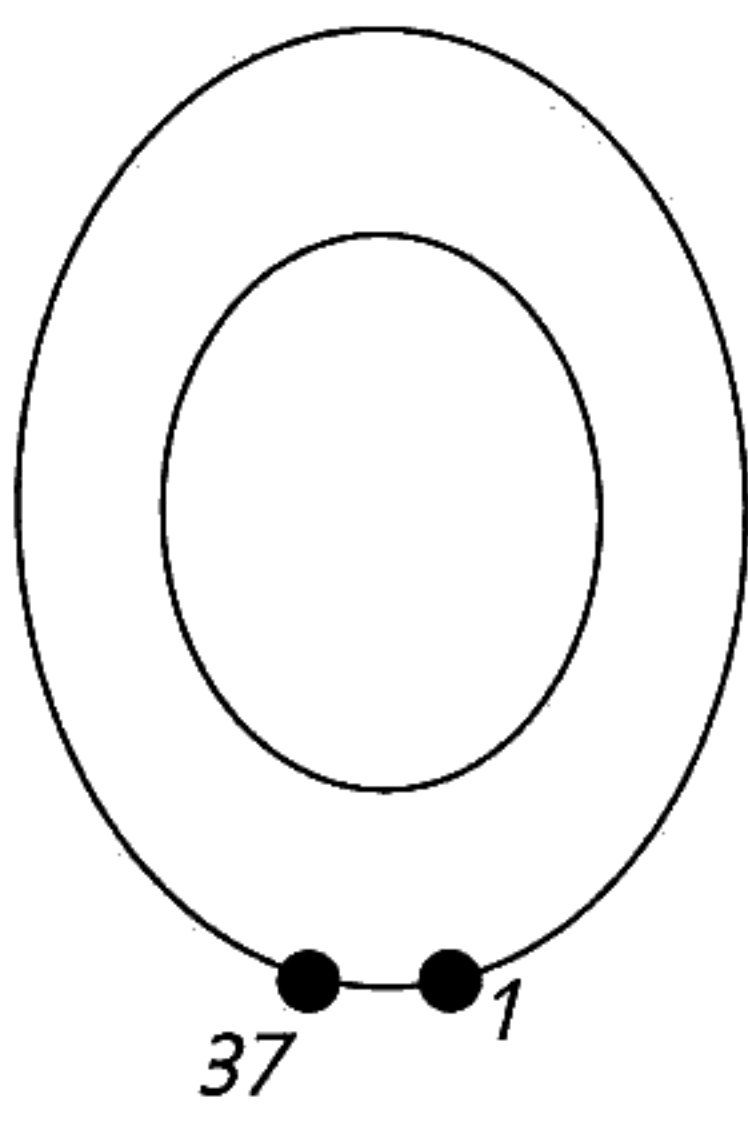
Sam the Shrimp Fisherman has to get dressed for work. He has to pick out the clothes that will protect him and help him do his job. Can you circle the items that he needs and put an "X" through the ones that he doesn't? Do you know why he needs to wear this clothing?



ANSWER: 1. Slicker Suit - keeps him dry while handling the wet net and catch on the deck - also when working in the rain. 2. Life jacket - helps him float if he falls overboard! 3. Rubber Boots - keeps his feet dry and helps him stand on the slippery, wet deck. 4. Rubber Gloves - protects his hands from crab claws and fish spines when he is sorting the catch. 5. Life Preserver - helps him float if he falls overboard!

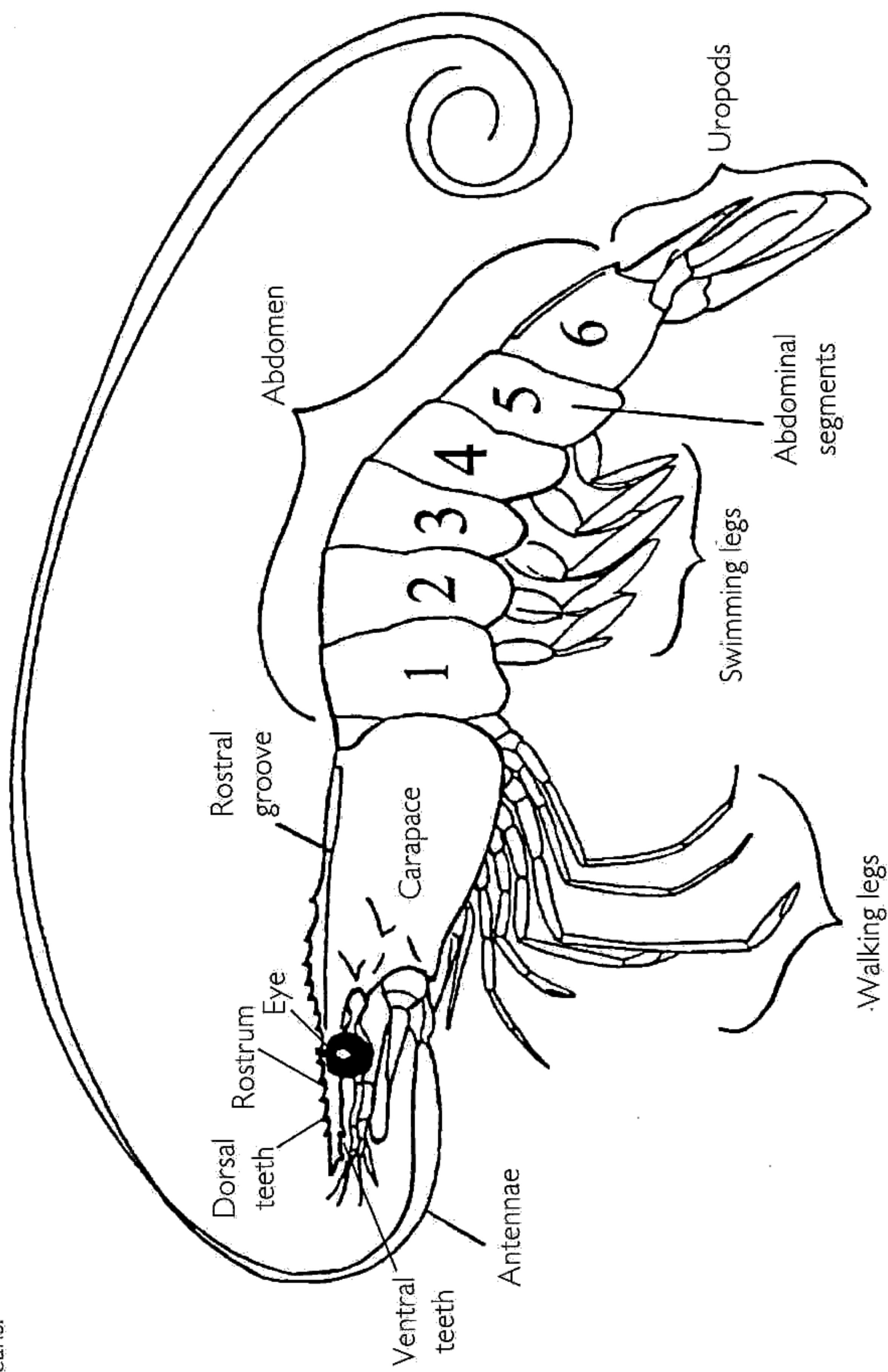
Connect the Dots!

Connect the dots to draw an important piece of equipment that every fisherman needs to carry on their boat!



Shrimp the Meat. Meet the shrimp.

There's much more to a shrimp than what you see on your dinner plate. Biologists classify them as "decapod crustaceans" which is a fancy way of saying that they are creatures with 10 legs (in Latin, "deca" means 10 and "pod" means foot). Crustaceans are animals with whose bodies are divided into segments covered by a hard outer shell (called an "exoskeleton"). Crabs, lobsters and crawfish are also decapod crustaceans.

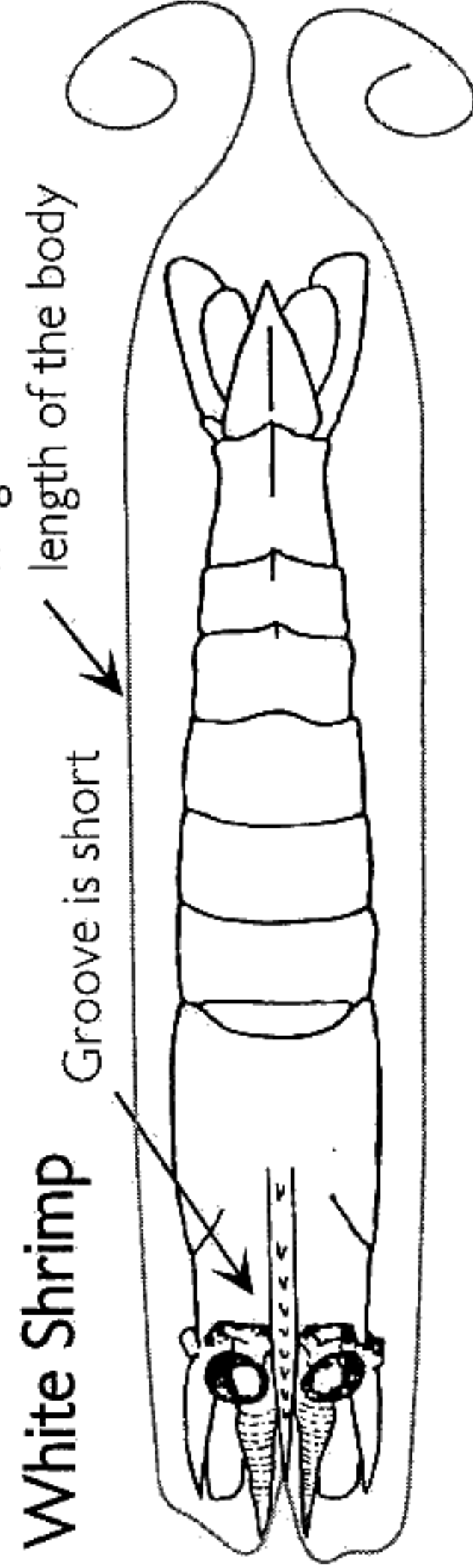


SIDE VIEW OF A SHRIMP

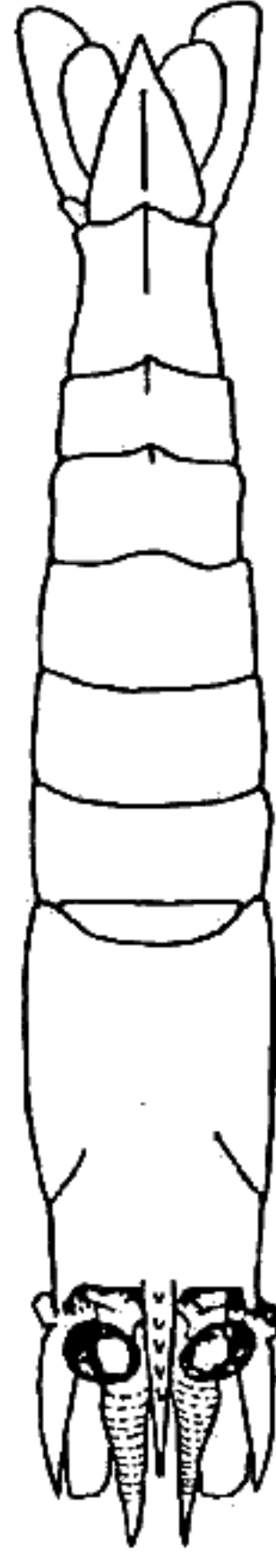
Brown, White and Pink (but they don't taste like chocolate, vanilla and strawberry)!

There are over 2000 species (different kinds) of shrimp in the world. The most commercially important (the ones that are caught, sold and eaten most often) shrimp in the Gulf of Mexico are brown shrimp, white shrimp and pink shrimp. You can tell them apart by looking at the length of the rostral groove, the length of the antennae and whether or not they have a spot on the sides of their abdomen (stomach).

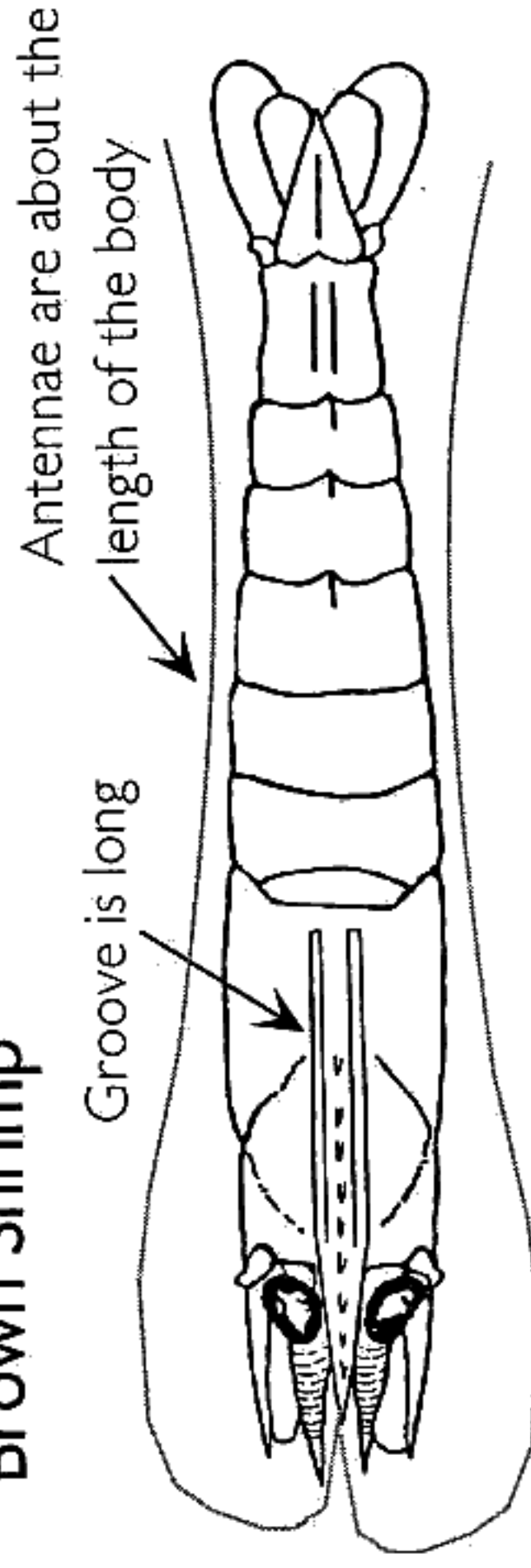
DRAW THE MISSING PARTS TO MAKE A WHITE, BROWN AND PINK SHRIMP.



White Shrimp



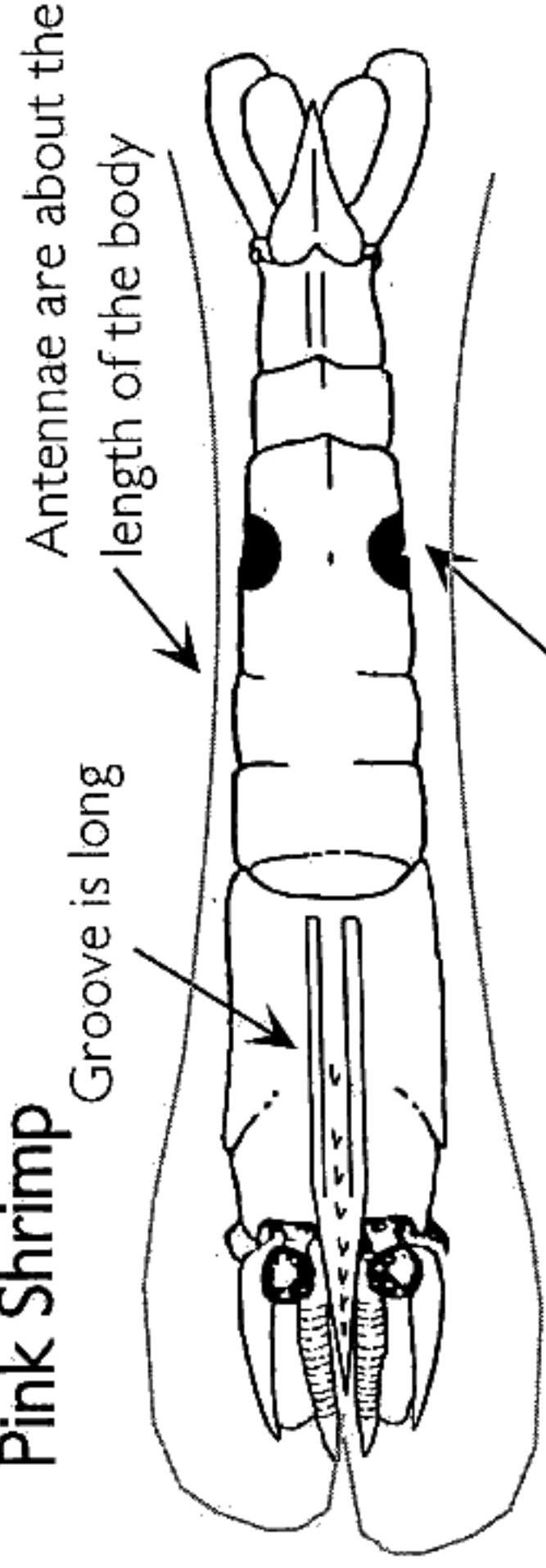
Brown Shrimp



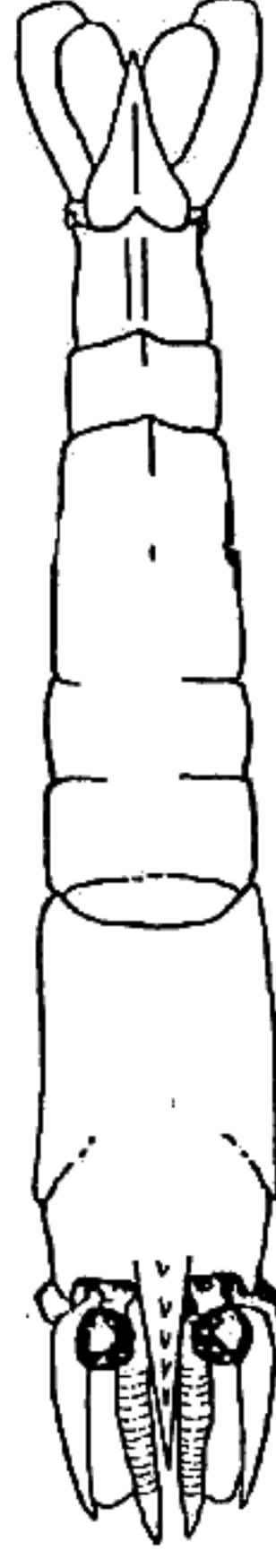
Brown Shrimp



Pink Shrimp



Pink Shrimp

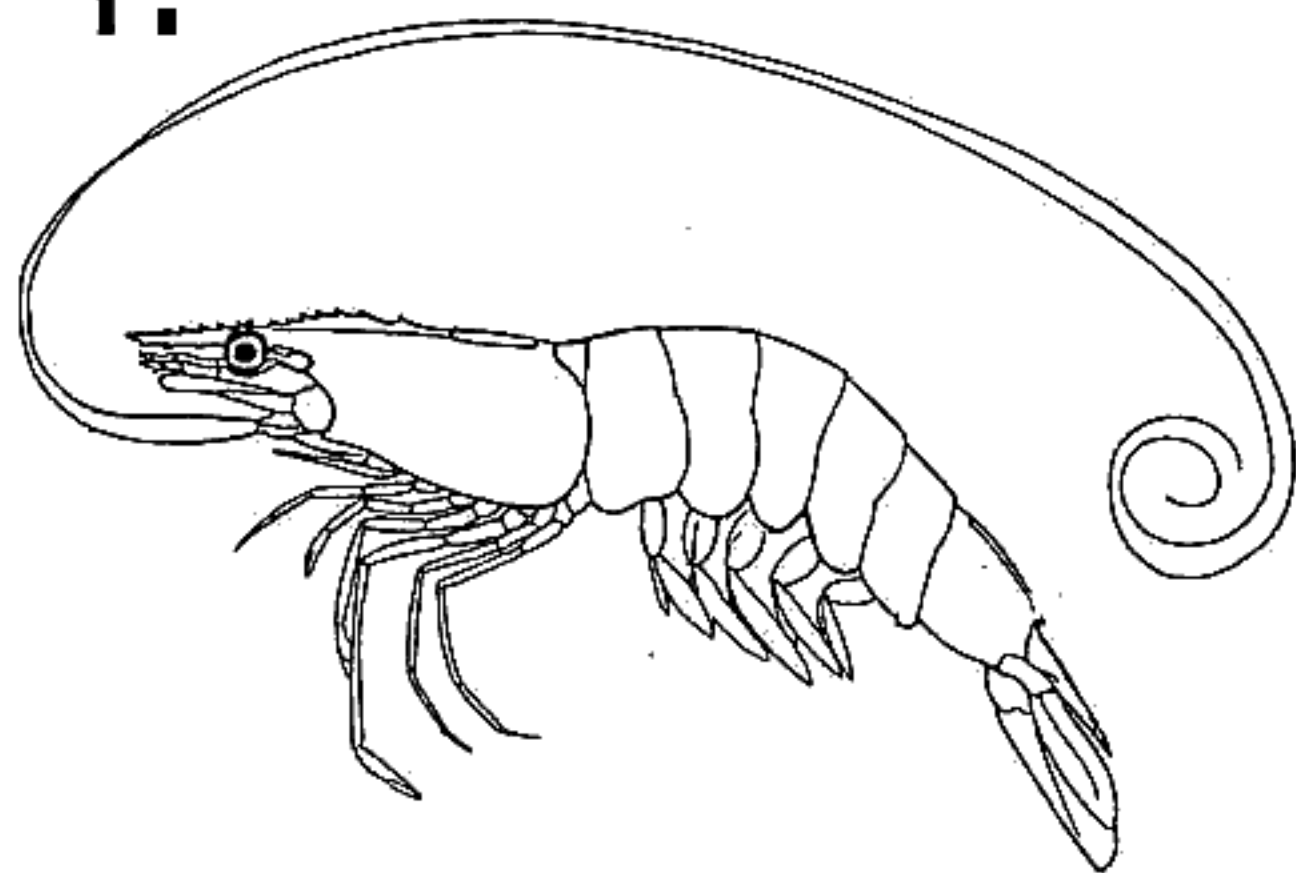


TOP VIEW OF A SHRIMP

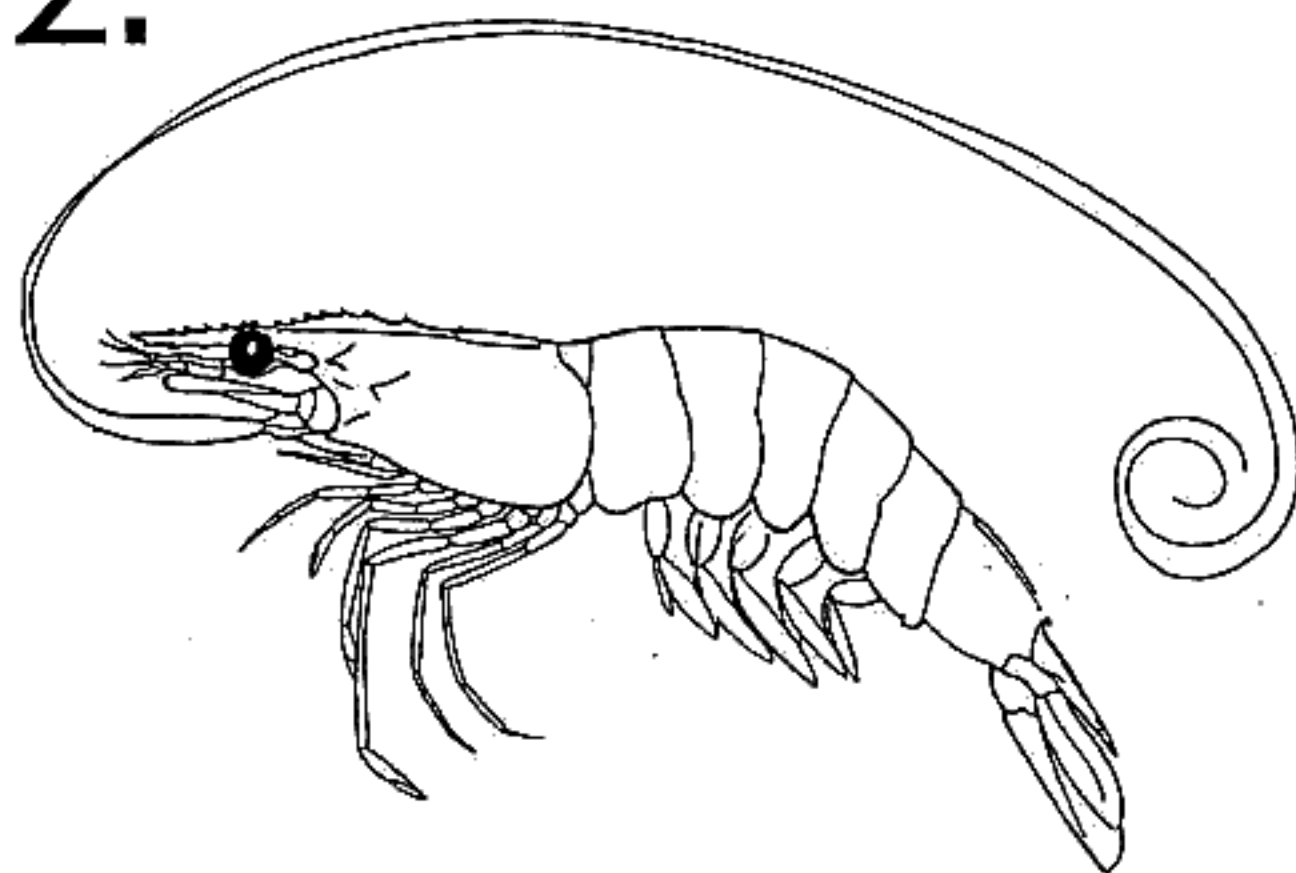
Twin Trawls!

Which two shrimp are exactly alike?

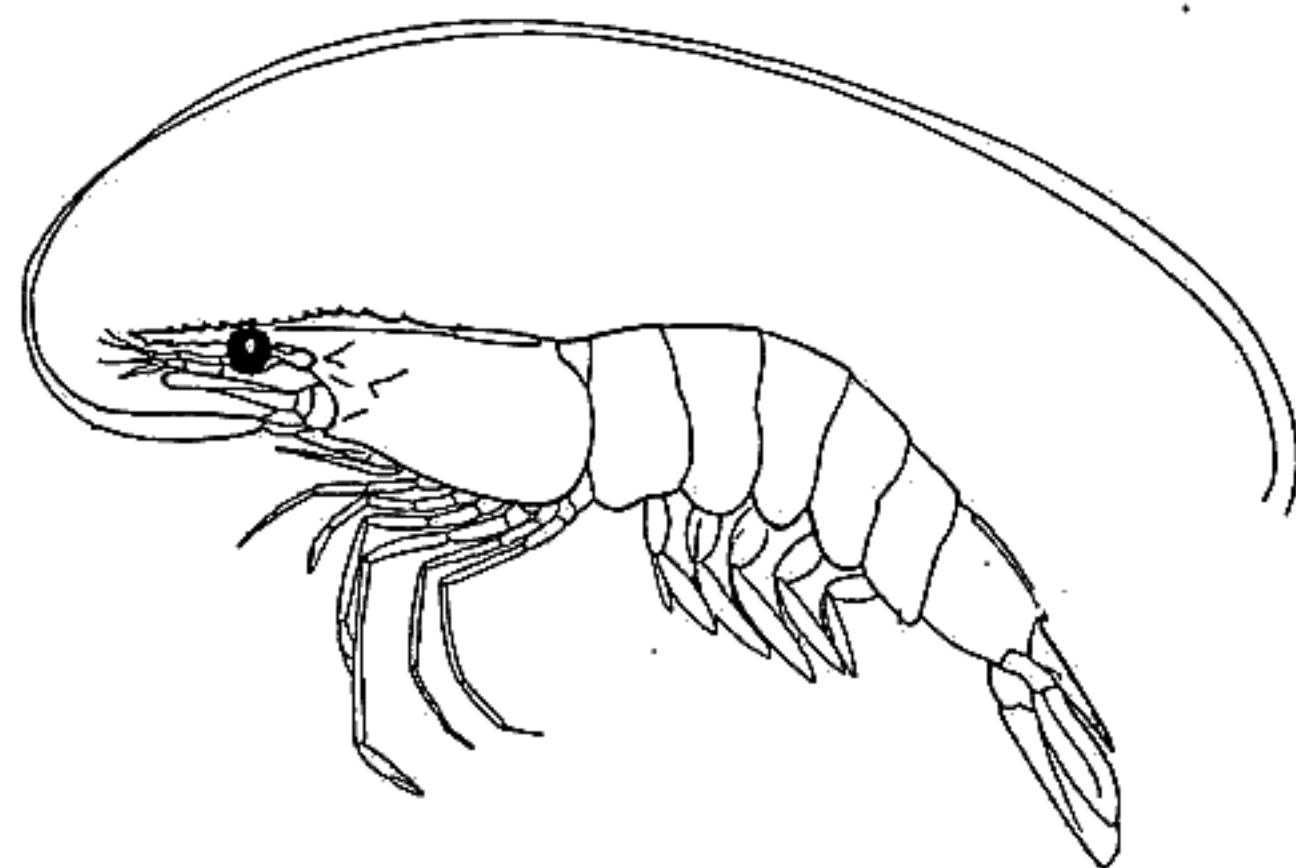
1.



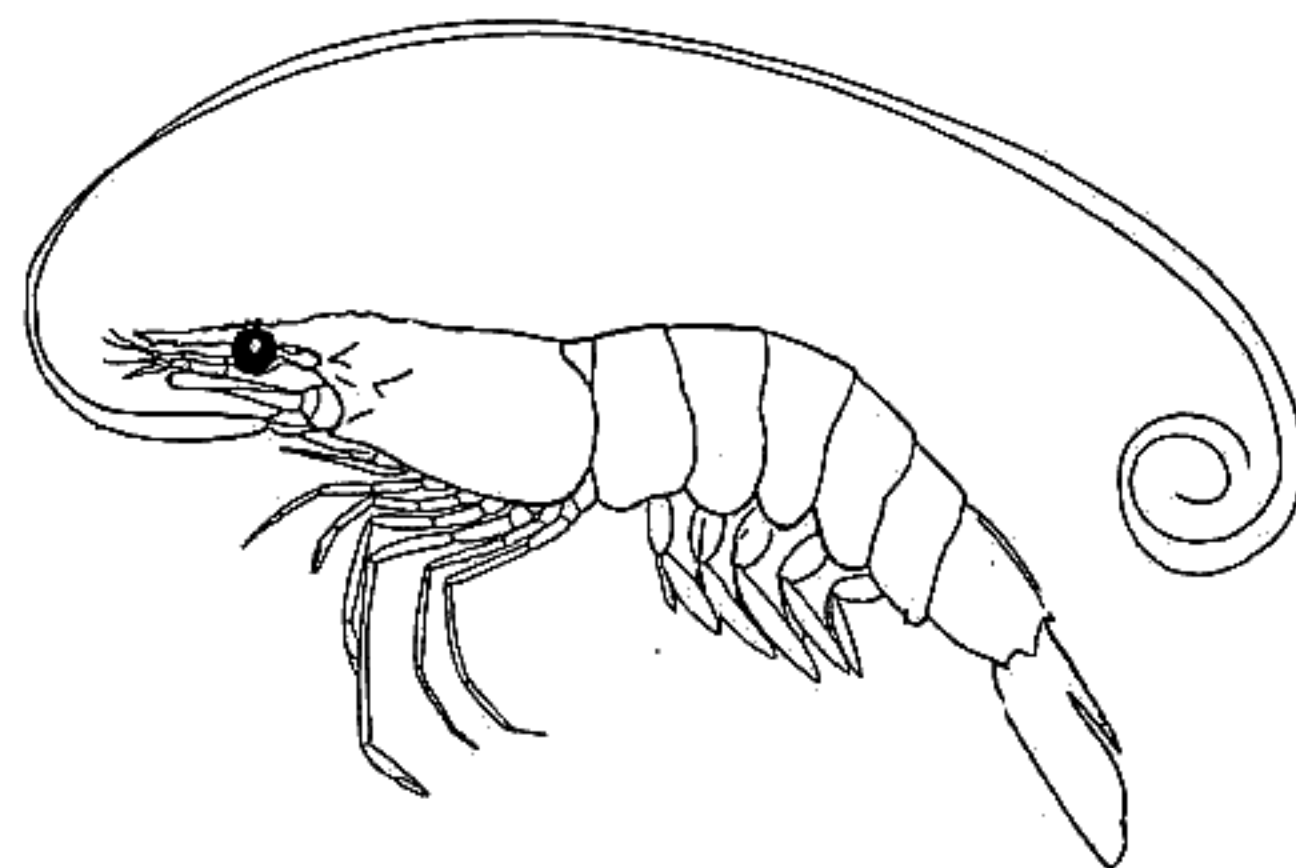
2.



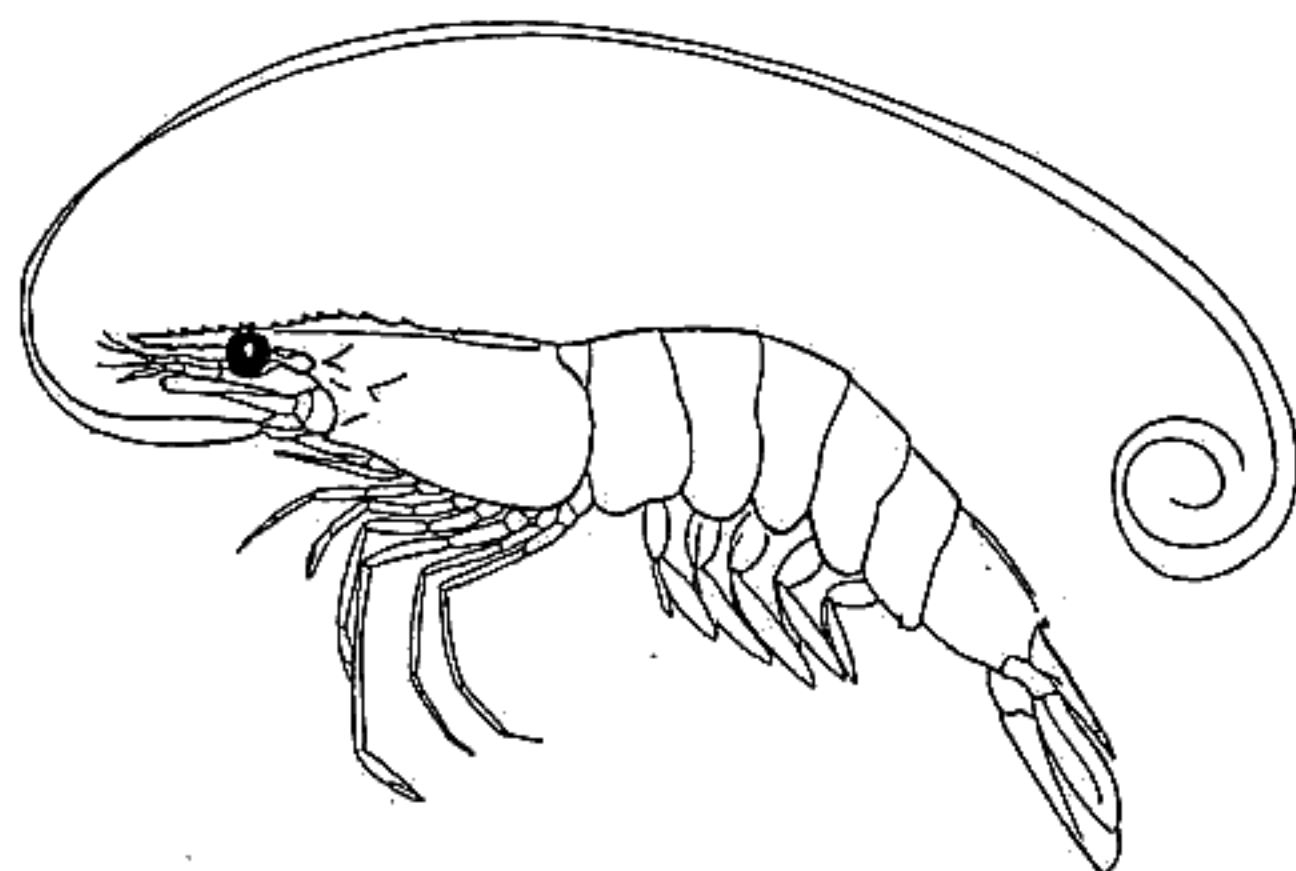
3.



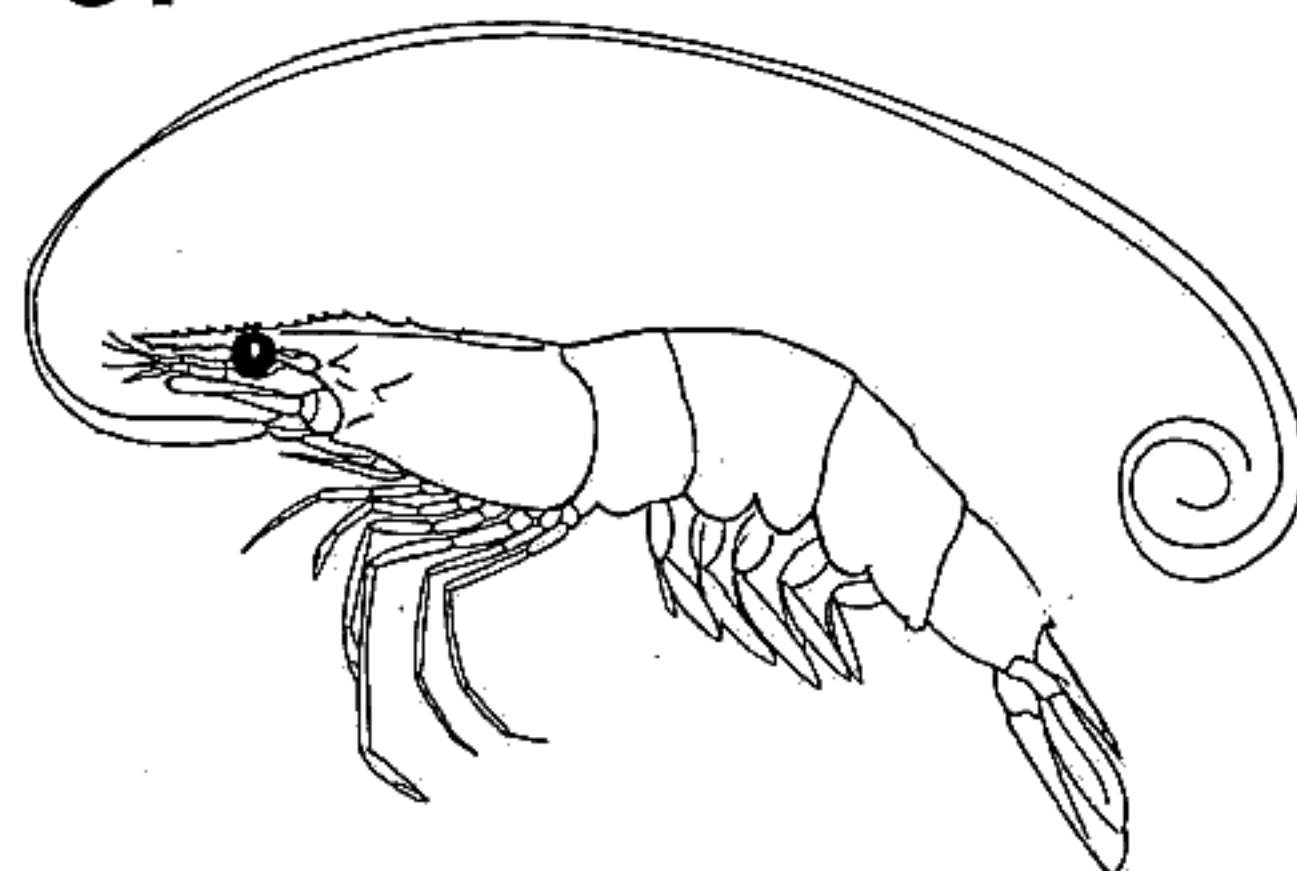
4.



5.



6.

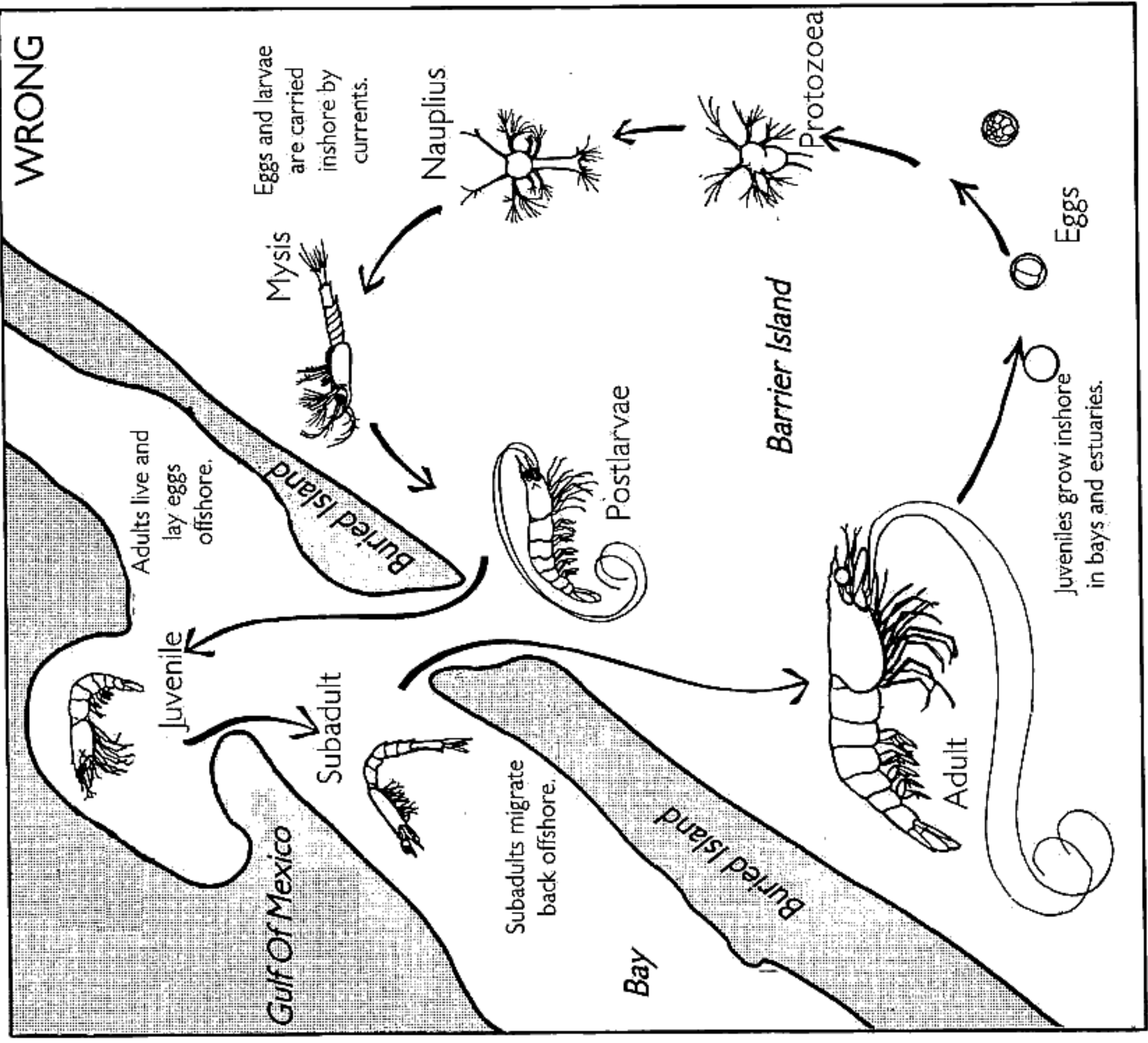
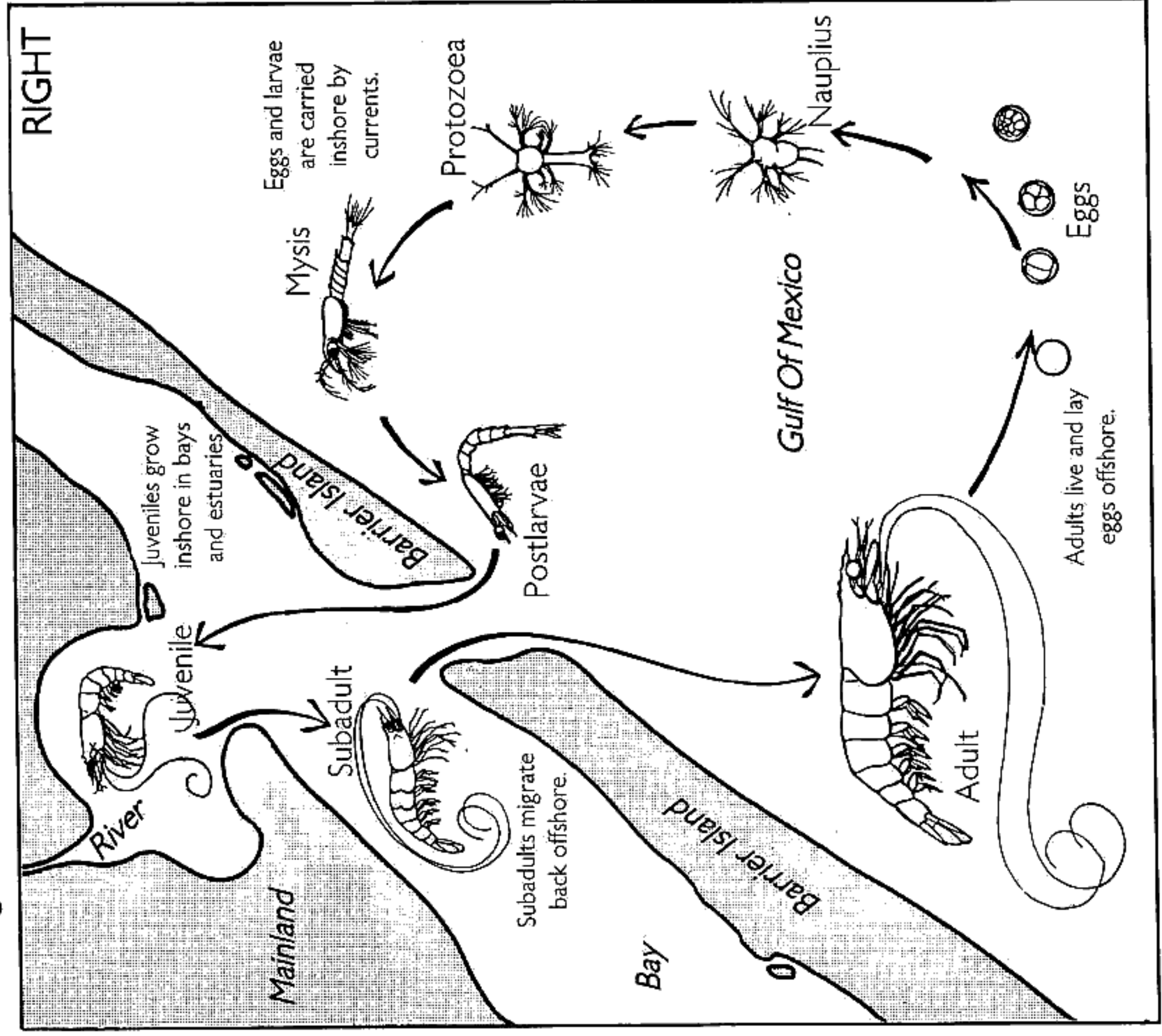


ANSWER: Number 2 and Number 5.

The Circle of Life!

Shrimp lay up to a half-million eggs. It takes 6 to 9 months for the larval shrimp to grow to be adults. They go through many different stages (some with strange sounding names!) that look very different from the adult shrimp. Each different stage requires a different habitat or place to live in order to grow into the next stage. It is very important to protect these habitats so that there will always be plenty of shrimp.

The drawing on the left shows the correct life cycle for the shrimp. The drawing on the right is wrong. Circle all the mistakes in the picture on the right.



ANSWERS: 1. Names for Protozoa and Nauplius are switched. 2. Mysis is upside down. 3. Juvenile doesn't have any antennae. 4. Drawings for Postlarvae and Subadult are switched. 5. One egg is missing. 6. Gulf of Mexico is labeled as a Barrier Island. 7. Mainland is labeled as Gulf of Mexico. 8. Description is switched for Adults and Juveniles. 9. The adult is missing its first pair of swimming legs. 10. Barrier Island is changed to Buried Island. 11. Label for River is missing. 12. River is gone. 13. Small Islands in bay are gone.

Where In the World is.....?

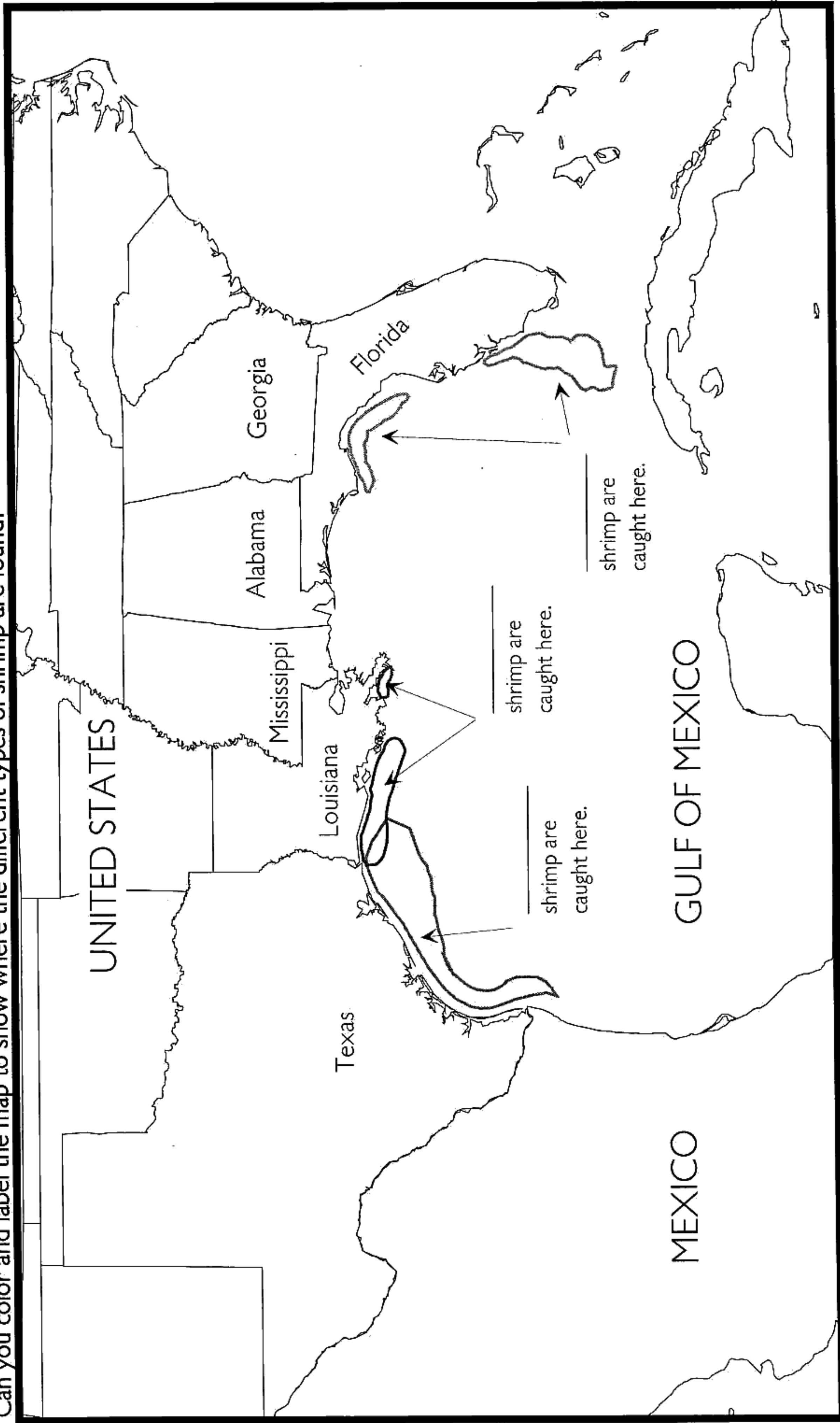
There are (many) different species of shrimp in the world. Most of the shrimp caught in the southeastern United States are either Brown Shrimp, White Shrimp or Pink Shrimp. They all are caught in different places.

Brown shrimp are caught mostly in deeper waters off of the coast of Texas.

White shrimp are caught mostly in shallow waters (near shore) off of the coast of Louisiana.

Pink shrimp are caught mainly in Florida.

Can you color and label the map to show where the different types of shrimp are found?



From Head(rope) to Tow!

The Shrimp Fishery has a language of its own! Many of the words they use to name their gear are familiar, but they mean something totally different than what you would expect. Can you label them on the drawing below?

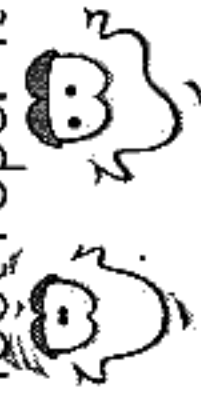
Otter Trawl: The type of net that the fishermen pull behind their boats to catch the shrimp. (It's NOT used to catch otters!)



Head Rope: A line that runs along the front and top of the net with floats attached to it that help keep the net open.

Foot Rope: Opposite of the head rope! The line at the front and bottom of the net. It has weights on it that help keep the net on the bottom.

Tickler Chain : A chain that is attached in front of the foot rope. It drags along the sea floor (where the shrimp live) and makes them jump up in front of the net so that they are caught in the net.

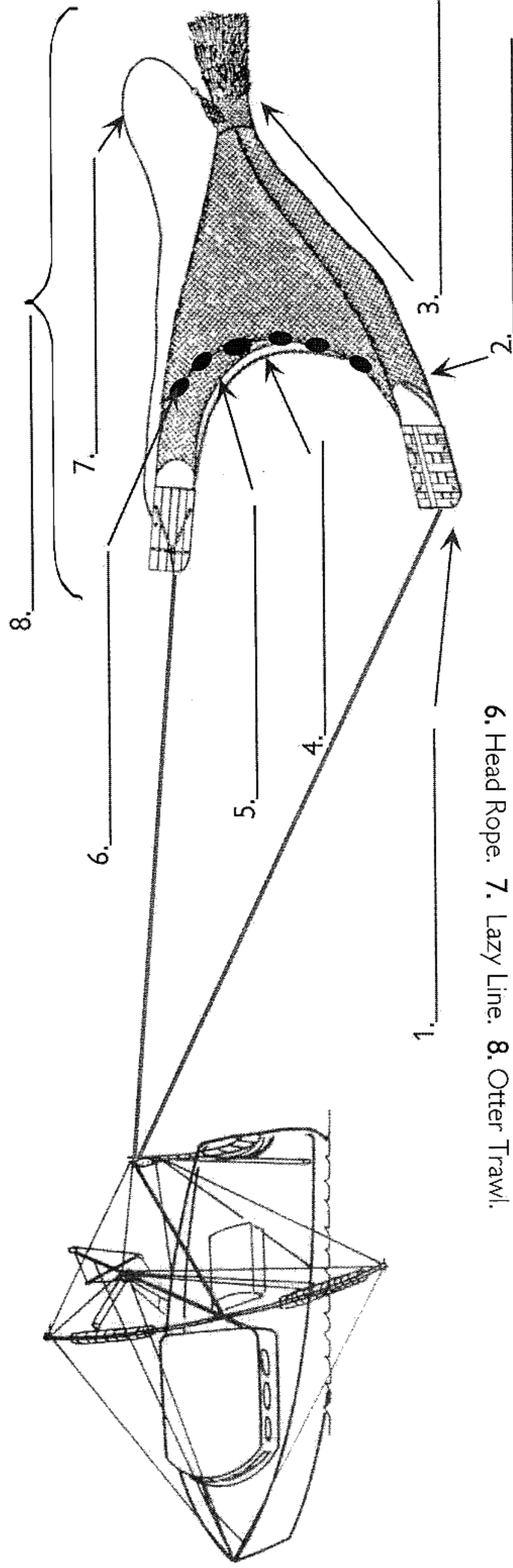


Doors: They don't open a house, but these large wooden panels do make the net spread open as it is pulled through the water.

Wings: The front sides of the net where the doors attach. They act like fences to guide the shrimp into the opening of the net.

Cod End: The bag at the end of the net where the shrimp (not cod!) are caught.

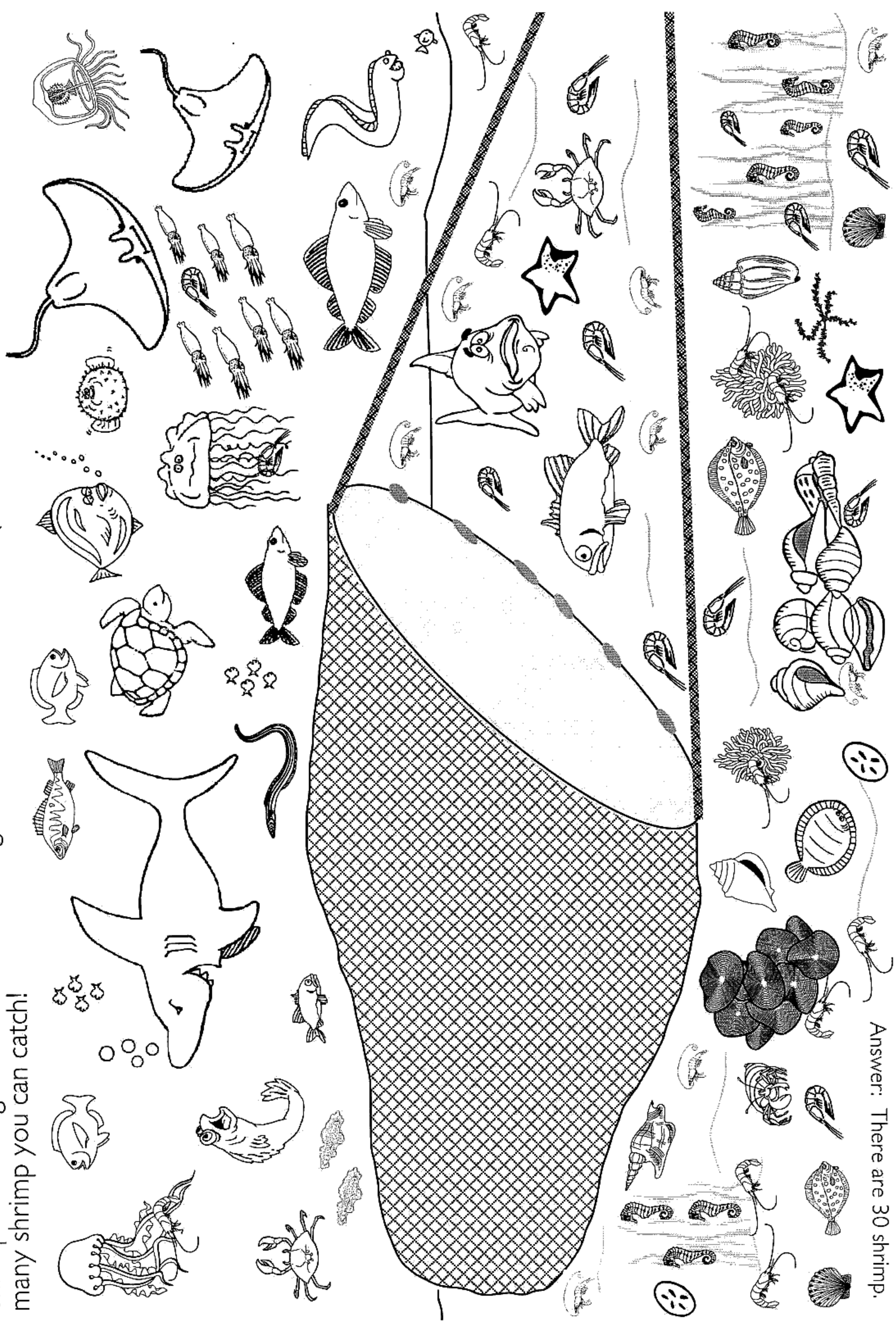
Lazy Line: A rope attached around the cod end of the net that helps the fisherman bring the net aboard the boat when it is full with the catch.



ANSWERS: 1. Door. 2. Wing 3. Cod End. 4. Tickler Chain. 5. Foot Rope.
6. Head Rope. 7. Lazy Line. 8. Otter Trawl.

Catch Me If You Can!

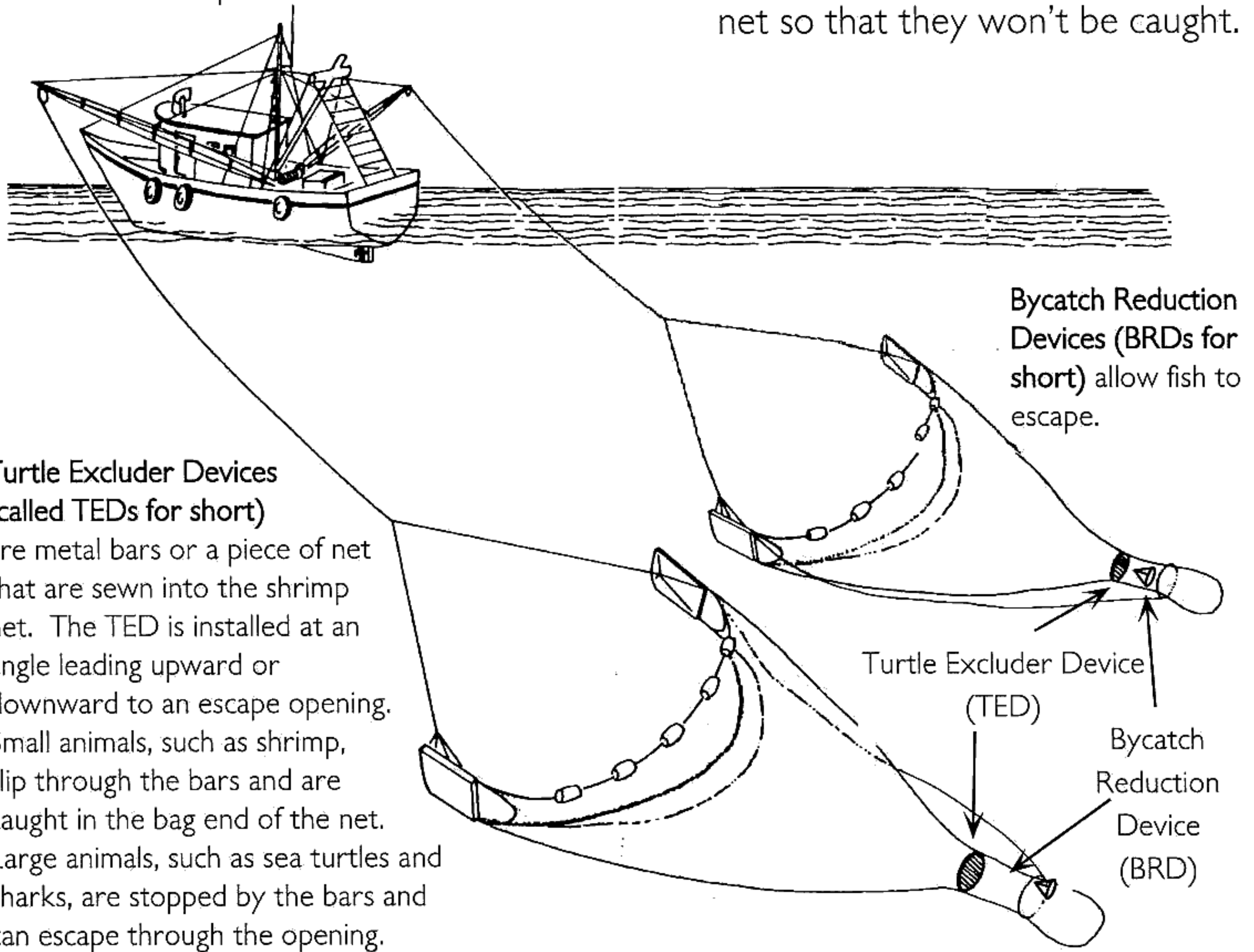
Shrimp boats drag from 1 to 4 nets along the bottom of the ocean (that's where the shrimp live!) See how many shrimp you can catch!



Answer: There are 30 shrimp.

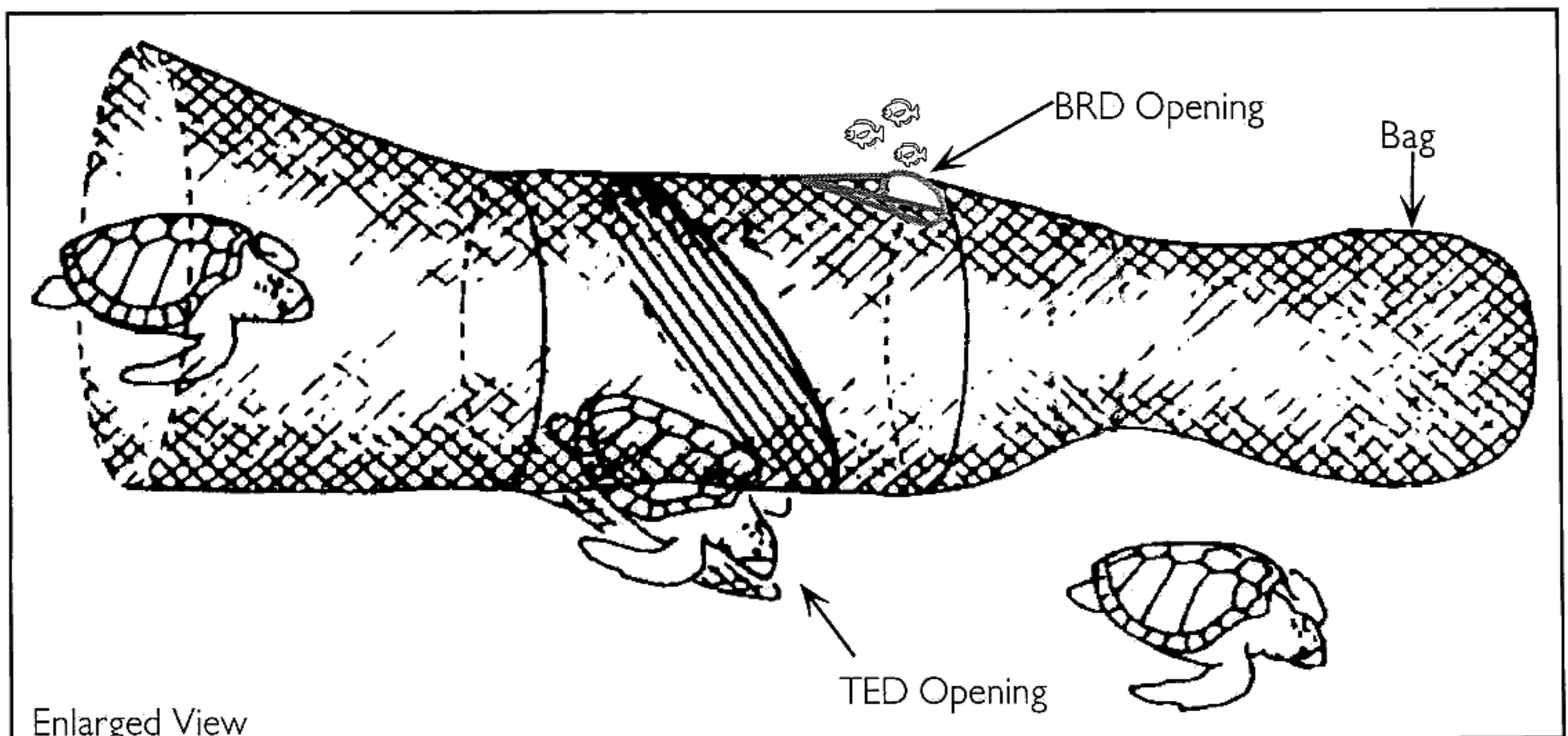
The Great Escape!

Shrimp fisherman often catch animals besides shrimp in their nets. These animals that they do not want to catch are called "bycatch". The fisherman use 2 escape hatches in their nets to let sea turtles and fish swim out of the net so that they won't be caught.

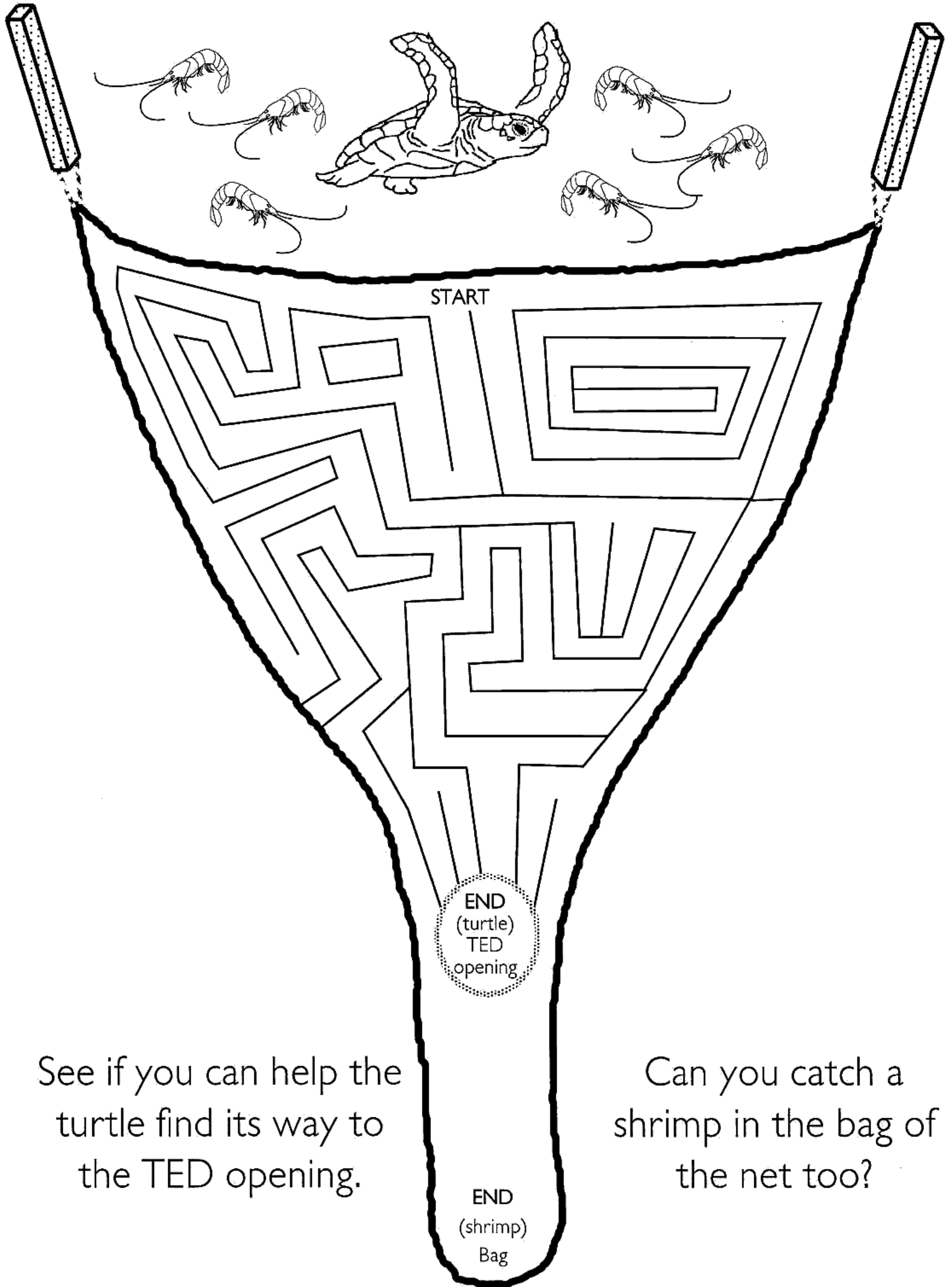


Turtle Excluder Devices (called TEDs for short)

are metal bars or a piece of net that are sewn into the shrimp net. The TED is installed at an angle leading upward or downward to an escape opening. Small animals, such as shrimp, slip through the bars and are caught in the bag end of the net. Large animals, such as sea turtles and sharks, are stopped by the bars and can escape through the opening.



A-Mazing Gear!

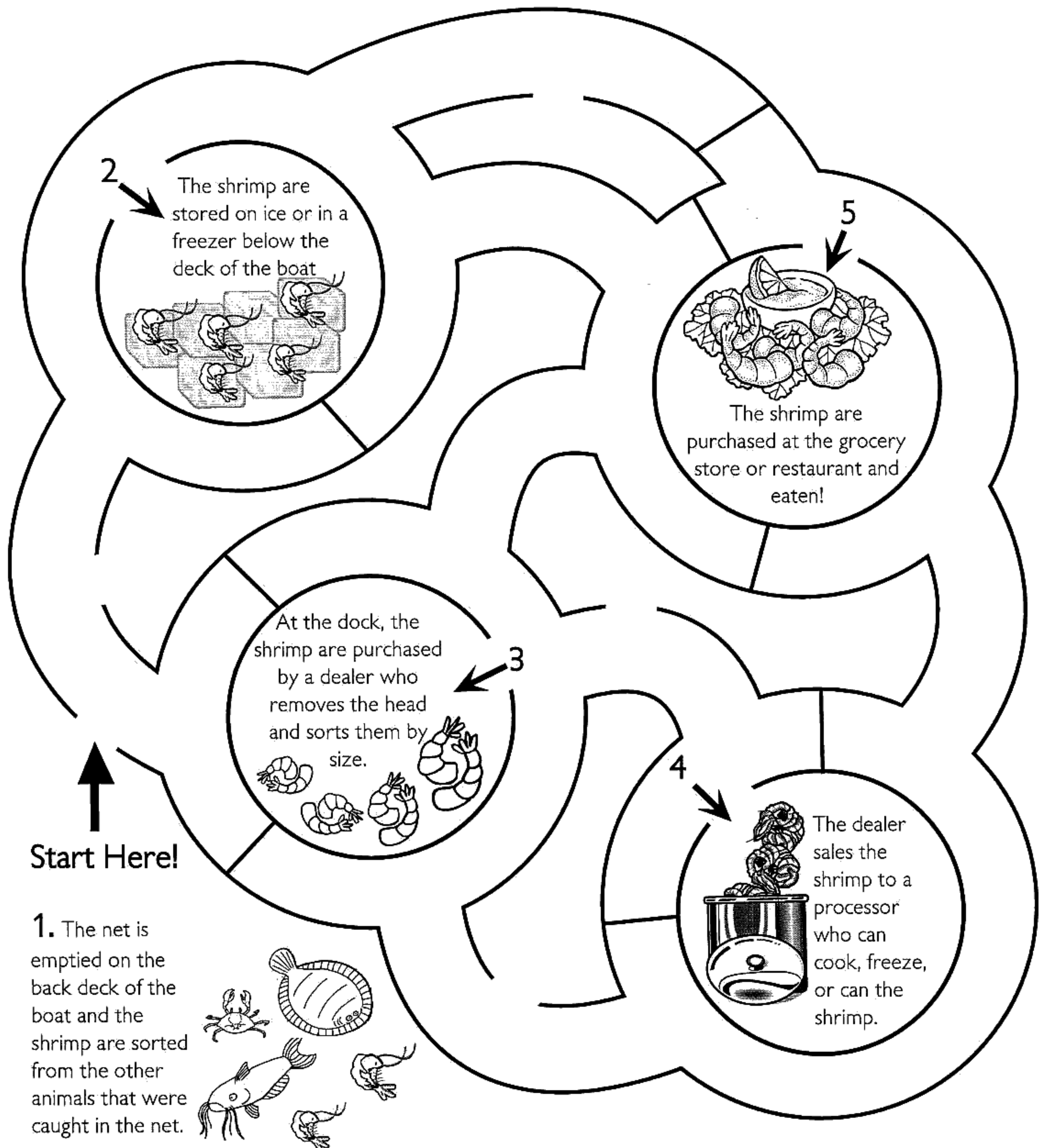


See if you can help the turtle find its way to the TED opening.

Can you catch a shrimp in the bag of the net too?

What's for Dinner?

We've learned about the life cycle of the shrimp, how they are caught, now all that's left is to learn how they make it to the table so that they can be eaten. Trace the path that the shrimp follows from the boat to your plate!



Word Search

Can you find all the words in the list below? They can be found in straight lines running forward, backward, up, down or diagonally.

N R L S D H A T C H A B I T A T
A I B B O N A M F G O A K L Y F
U O L O O F S H R I M P L V E D
P H M A R S H K I P G D I E W S
L W E T L G I P K C O D E N D E
I O T T E R T R A W L L K O K L
U L R U I K T R F O A T U R O I
S W H I T E S F D R D B E O P V
E N R U B B E R B O O T S P F I
S M G G P A B C G R B R O W N N
J U V E N I L E X L Y R D S H G
G U L F O F M E X I C O Y K A T
L F N B K I L X S A A E B T C A
O G I S D T E P R O T O Z O E A
V R E P O R D A E H C N E T Q D
E X T I C K L E R C H A I N E G

Word List:

BYCATCH
TED
OTTER TRAWL
NET
DOOR
BOAT
BRD
HABITAT

RUBBER BOOTS
HEADROPE
SHRIMP
BROWN
PINK
WHITE
MARSH
GULF OF MEXICO

COD END
GLOVE
NAUPLIUS
PROTOZOEAE
TICKLER CHAIN
JUVENILE