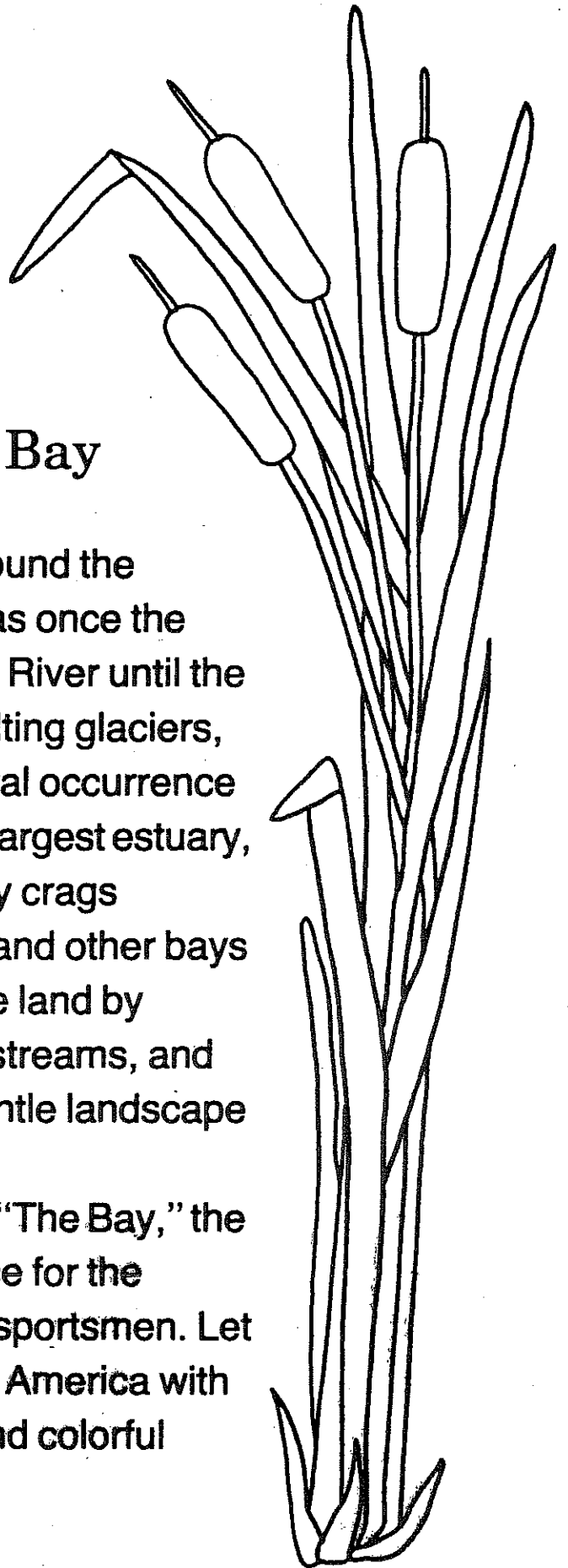


The Chesapeake Bay

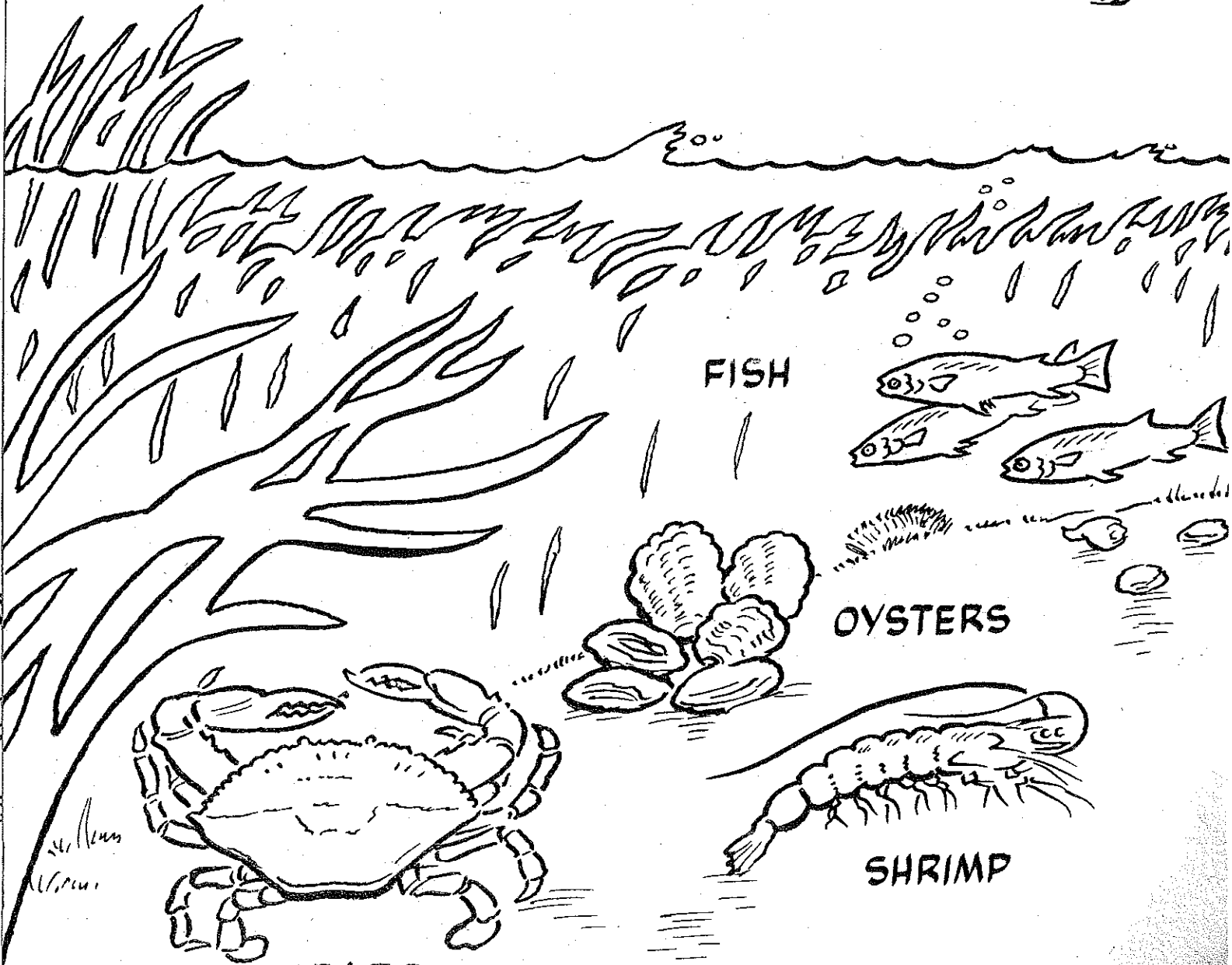
Come with us as we travel around the Chesapeake Bay. This region was once the lower valley of the Susquehanna River until the Atlantic Ocean, swollen from melting glaciers, flooded this land. From this natural occurrence the Chesapeake Bay, America's largest estuary, was born. We won't see the rocky crags common to the fiords of Norway and other bays that were harshly carved from the land by glaciers. Instead, we see rivers, streams, and creeks meandering through a gentle landscape of tidal marshes and tilled fields.

Called simply by Marylanders "The Bay," the Chesapeake provides sustenance for the watermen and recreation for the sportsmen. Let us explore together this region of America with its rich history, diverse wildlife, and colorful folklore.





PELICANS



FISH

OYSTERS

SHRIMP

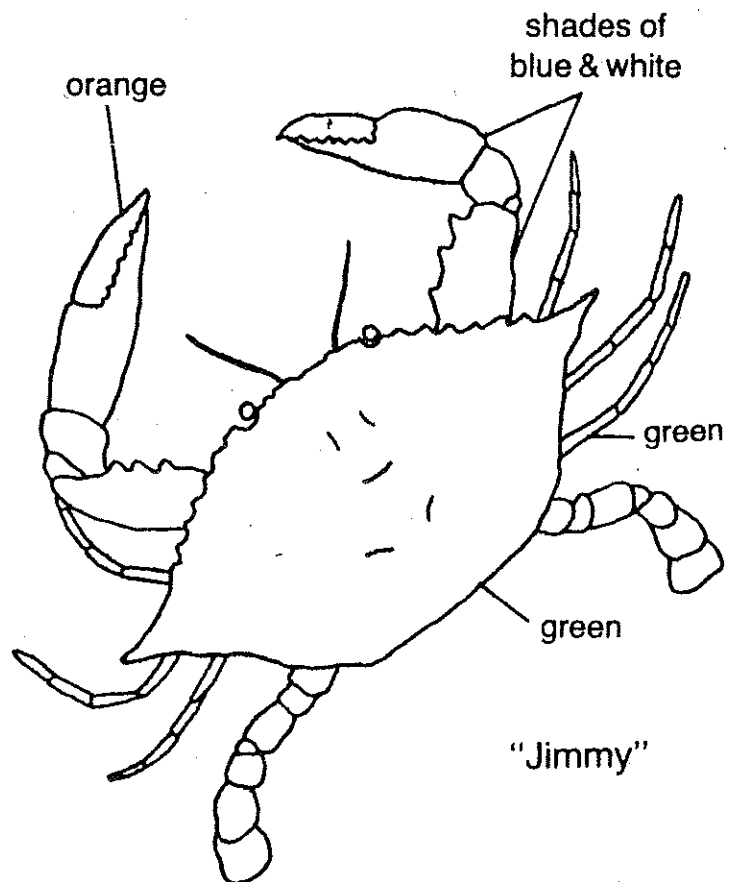
CRABS

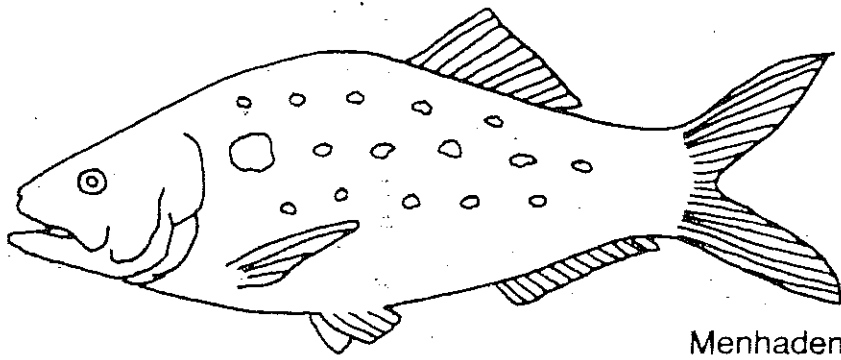
TIDAL MARSHES ARE ALSO WETLANDS AND ARE THE HOMES OF CRABS, SHRIMP, OYSTERS, AND MANY KINDS OF FISH AND SEA LIFE. LITTLE FISH FEED AND HIDE AMONG THE MARSH GRASSES UNTIL THEY ARE BIG ENOUGH TO SWIM OUT TO SEA.

The Blue Crab

The Blue Crab is a seafood delicacy from the Chesapeake Bay. It is caught commercially, as well as from backyard piers up and down the bay. This shellfish has five pairs of legs. The largest pair are pincer claws. The middle three pair are for walking and the last for swimming. You can see its two black eyes at the top of its shell. Whether swimming or running, crabs are speedy creatures. The male is called a "jimmy" and the female a "sook."

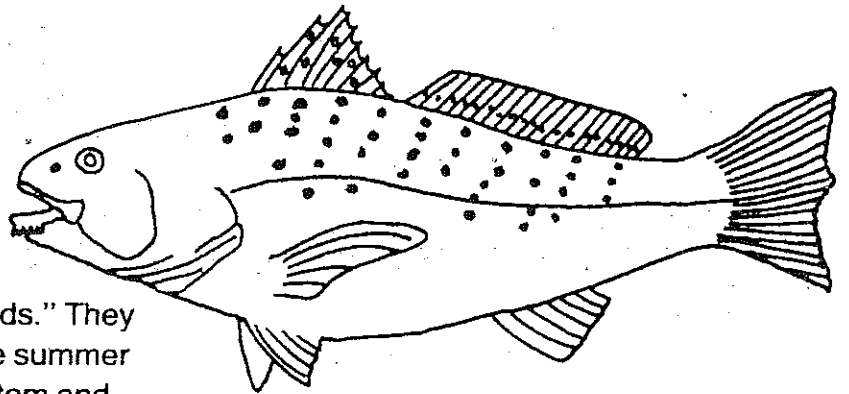
The crab begins as an egg carried on the underside of the sook. After the egg hatches, it passes through various stages until it resembles a crab. Although it is extremely small, the crab continues to grow larger by shedding its hard outer shell. Having shed its shell, the crab is now soft all over and is sold as a soft shell crab. The crab doesn't stay soft for long, for within hours its shell starts to harden. It repeats this cycle around twenty times.





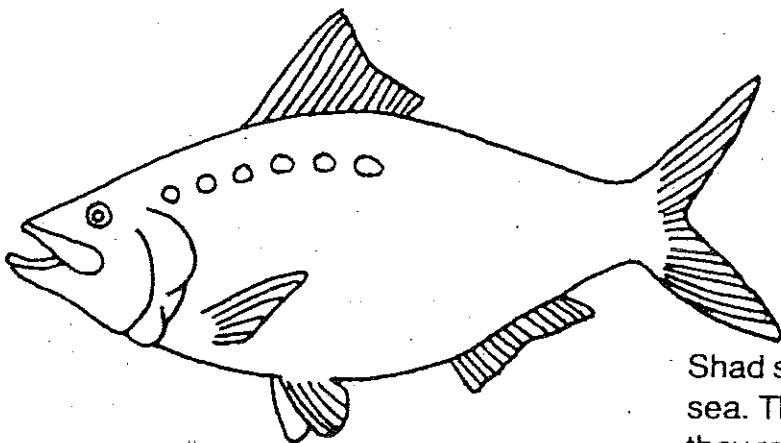
Menhaden

Menhaden are not caught commercially in Maryland. Indians used them as fertilizer when planting corn. Today, they are used for bait. The back and sides are tan with a silvery cast. Color the fins a pale yellow.



Croaker

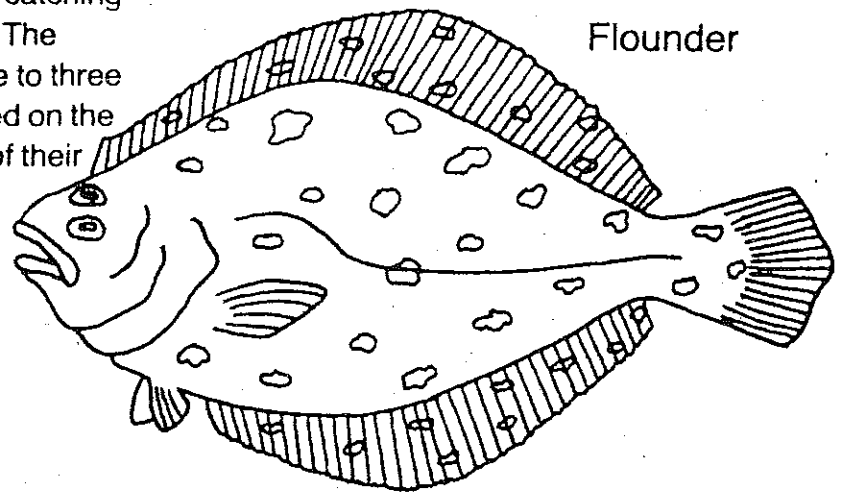
Croakers are nicknamed, "Hardheads." They are caught in the bay only during the summer months. Croakers feed near the bottom and live in eelgrass. Notice the barbels below the mouth and the slight point on the tail. Croakers are a pinkish color. Their average weight is one to three pounds.



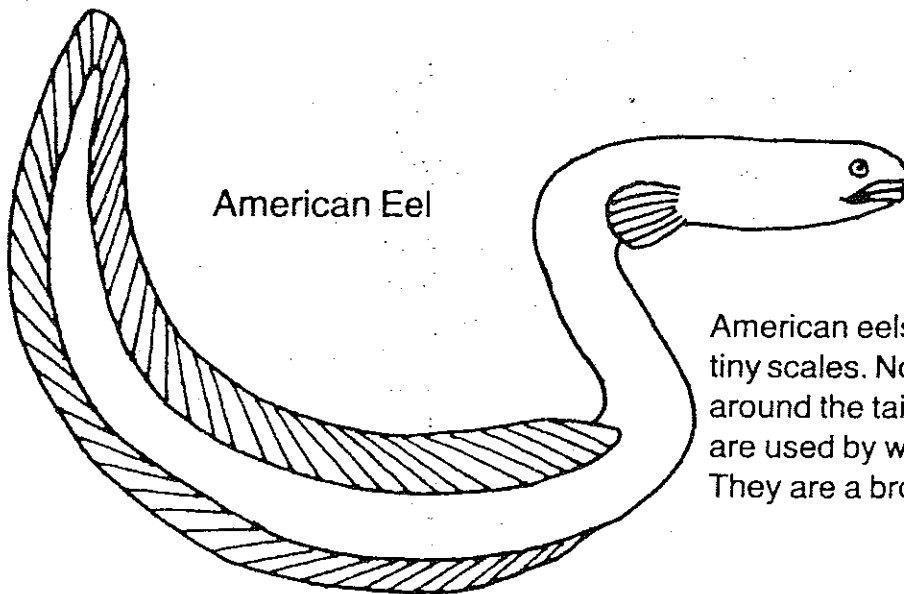
Shad
(American)

Shad spawn in fresh water, then move to the sea. They are commercially harvested when they return to fresh water to spawn. Notice how the lower jaw is extended. Shad are a silvery color with five or six spots behind the gill.

Flounders are flat fish which swim in from the ocean to feed in the Chesapeake Bay. They live on the bottom. Sportsmen enjoy catching them, for they are a good fish to eat. The average weight of the flounder is one to three pounds. Notice the large eyes located on the left side. These fish adopt the color of their surroundings.



Flounder



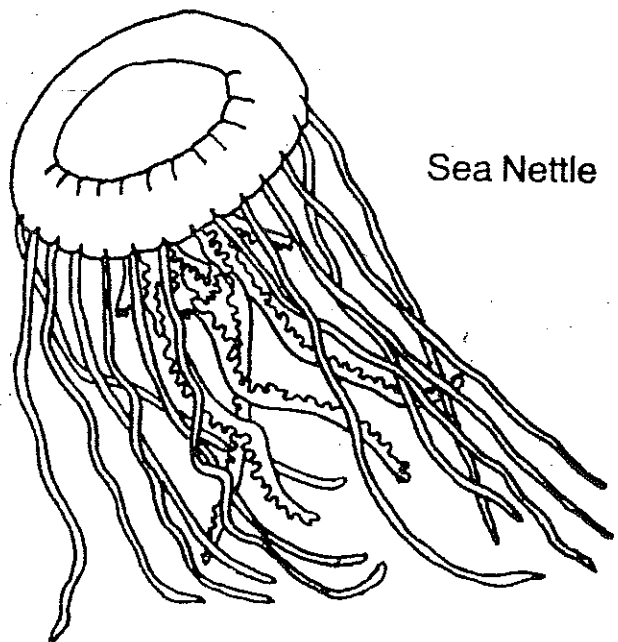
American Eel

American eels are snakelike looking fish with tiny scales. Notice the long fin which continues around the tail and onto the belly. These eels are used by watermen as bait on trotlines. They are a brown color.

Sea nettles are one species of jellyfish found in the bay.

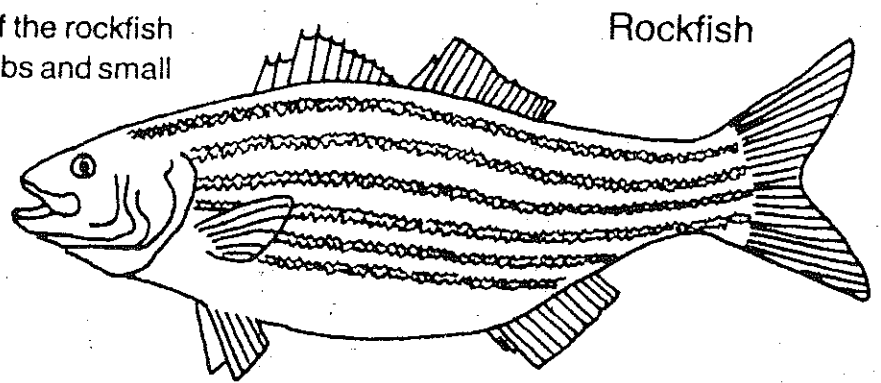
As you can see from the picture, these gelatinous creatures are composed of a dome and many tentacles. Located on the tentacles are thousands of minute stinging cells which they use to shoot poison into their prey. Swimmers in the bay are familiar with the sting of sea nettles.

Sea nettles are a whitish color.

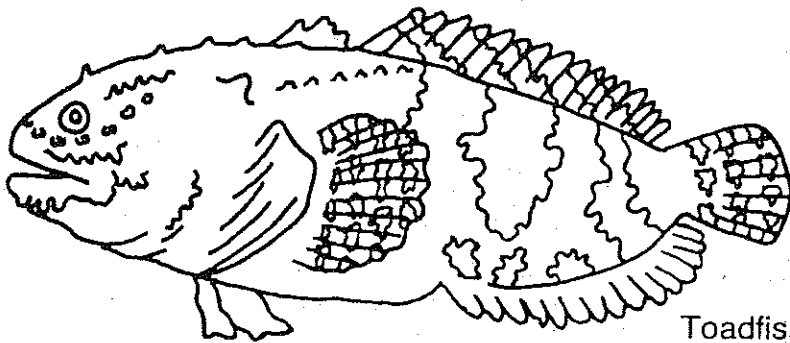


Sea Nettle

Striped bass, silvery gray with black lines running down their sides, are Maryland's state fish. They are known to Marylanders as "rockfish." The average weight of the rockfish is two to five pounds. They eat crabs and small fish.

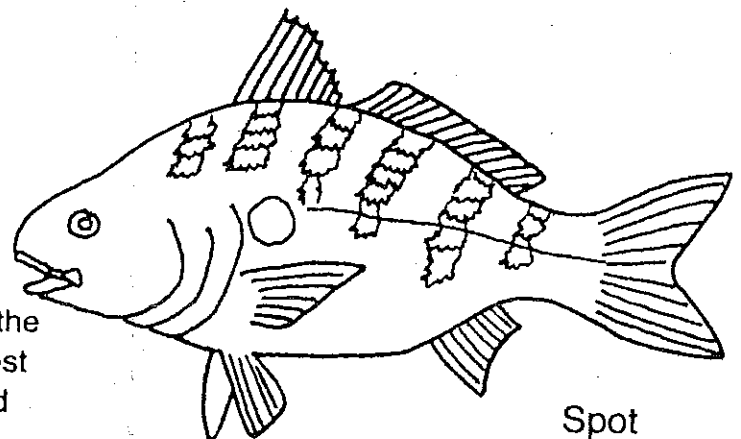


Rockfish



Toadfish

Toadfish are found on muddy bottoms. Edible, but, oh, are they ugly! They are a brown color.

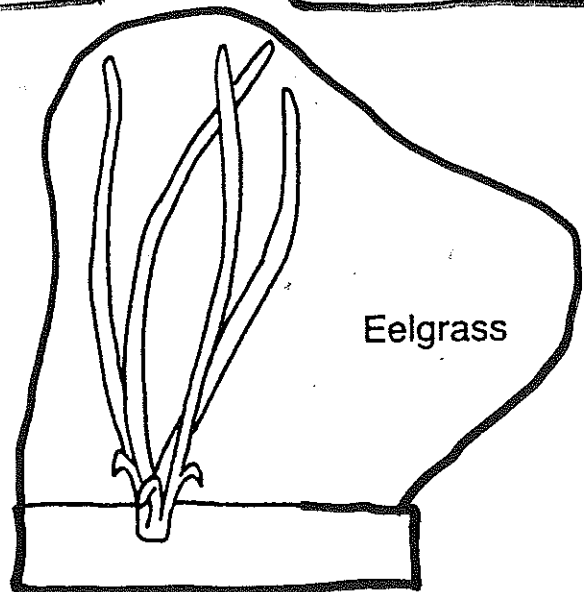
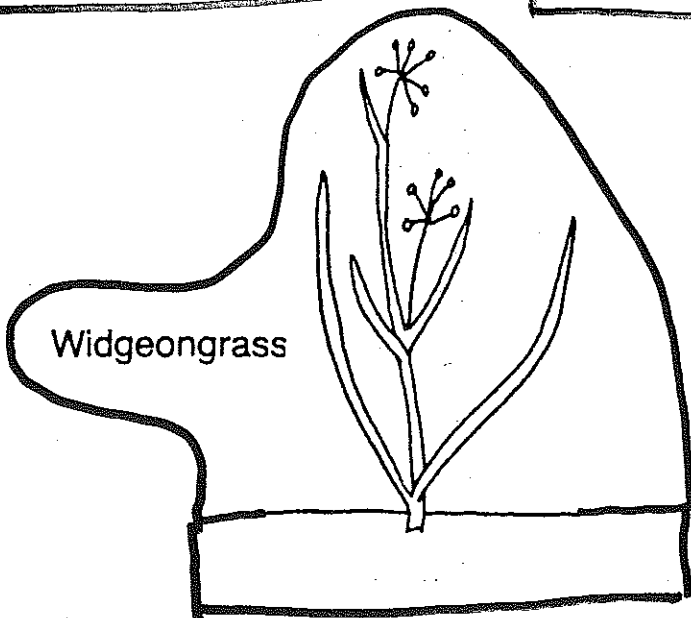
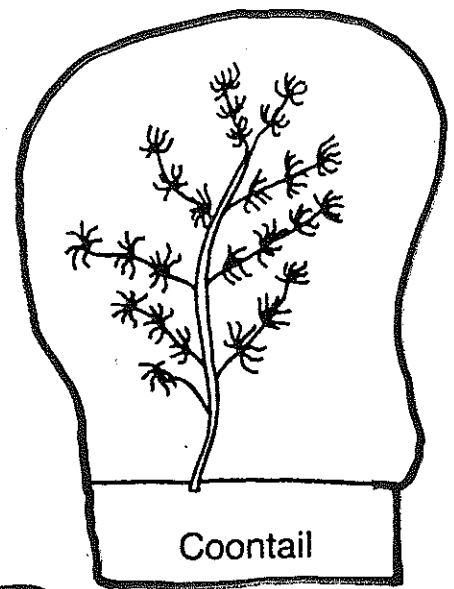
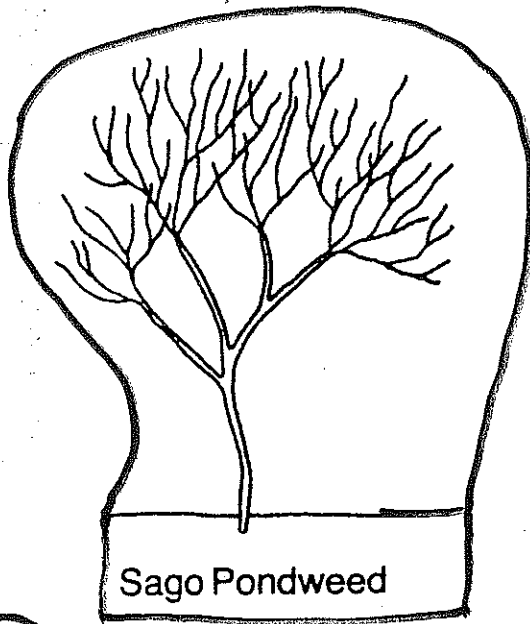
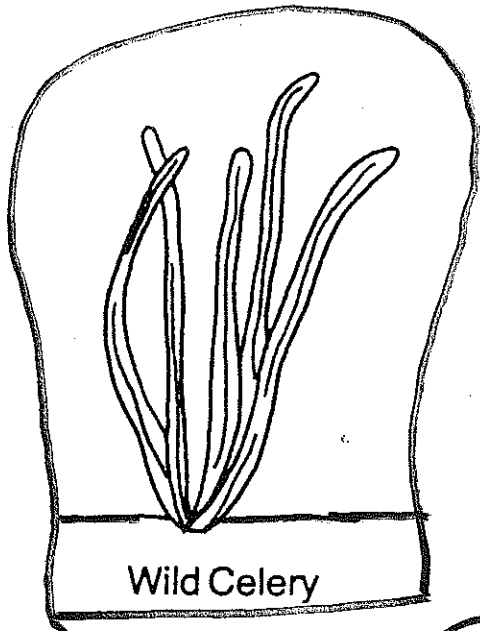


Spot

Spot are named for the black spot found on the side of their head. They are found in greatest numbers in the bay during late summer and early fall. The northern regions of the Chesapeake Bay are important nurseries for this fish. They are a silvery color with black diagonal stripes.

Aquatic Plants

Aquatic plants flourish in the Chesapeake Bay since much of the bay is shallow, allowing sunlight to penetrate. These rooted plants are an important part of the bay's ecosystem. They provide food and breeding grounds for the fish and shellfish, and then shelter in which the young fish and shellfish may grow. Aquatic plants are important waterfowl food. They help to keep the water clear and prevent erosion.

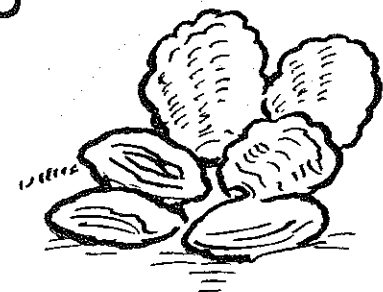
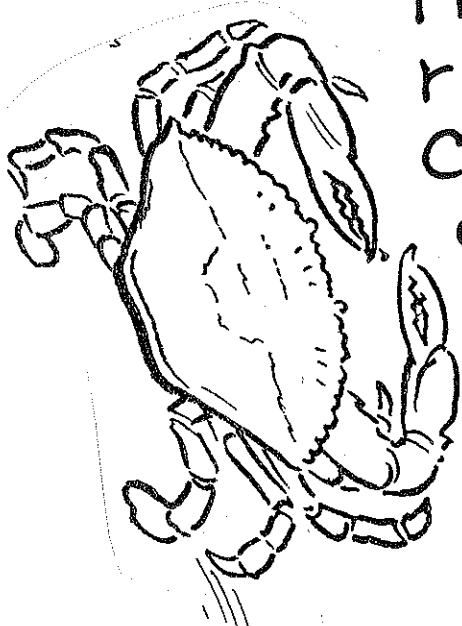
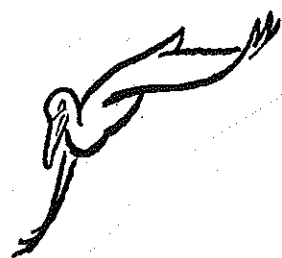


name

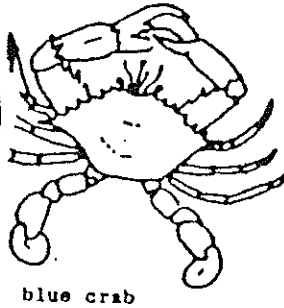
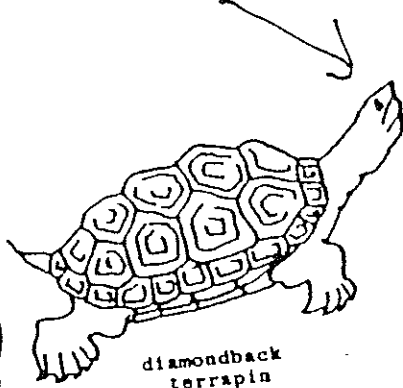
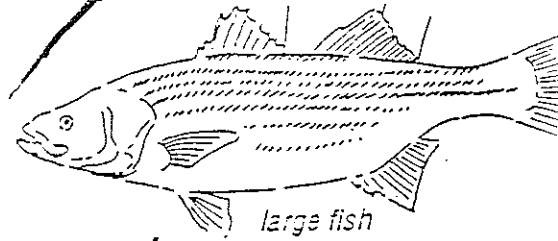
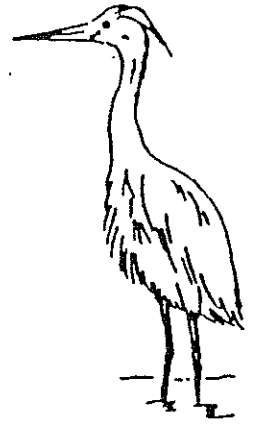
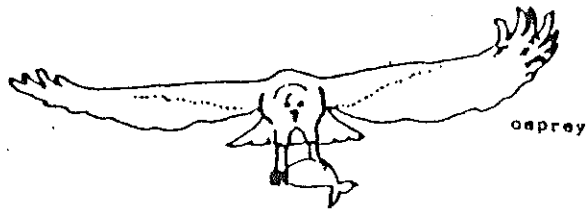
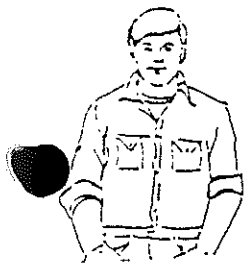
Chesapeake Critters

c	r	a	b	c	a	b	s	p	o	t
o	o	c	d	l	f	e	g	h	s	o
s	c	r	o	a	k	e	r	s	e	a
p	k	i	j	m	k	l	m	l	a	d
r	f	l	o	u	n	d	e	r	n	f
e	i	m	h	e	r	o	n	g	e	i
y	s	h	a	d	n	o	h	o	t	s
p	h	g	u	l	l	s	a	o	t	h
m	u	s	s	e	l	l	s	e	e	t
o	y	s	t	e	r	s	e	e	e	t
t	e	r	r	a	p	i	n	u	v	w

crab menhaden spot
 flounder toadfish eel
 rockfish shad sea nettle
 croakers oyster mussel
 clam terrapin heron
 osprey gulls goose



Chesapeake Bay Food Chain



insect

diamondback terrapin

blue crab

small fish

jellyfish

zooplankton



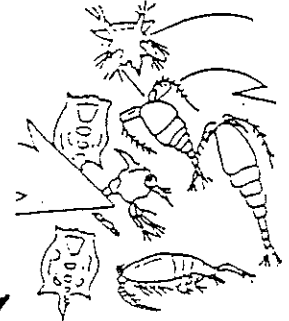
snail



barnacles

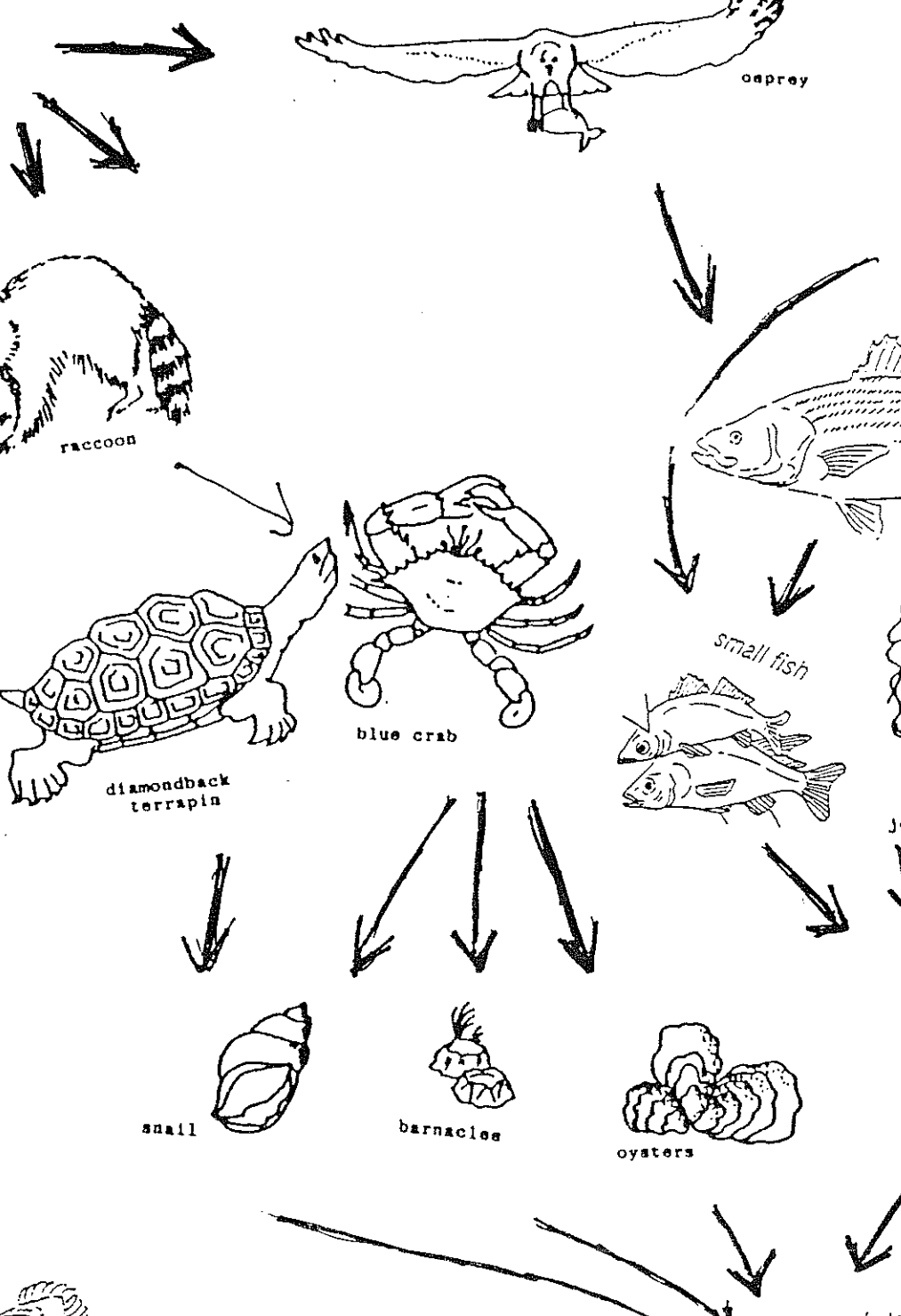
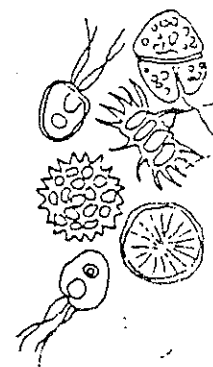
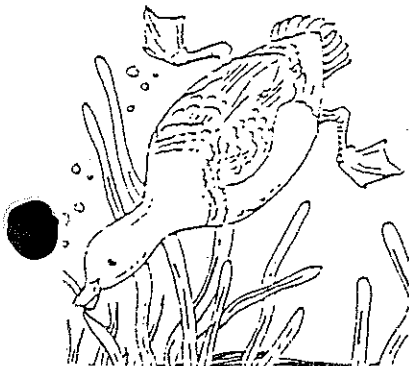


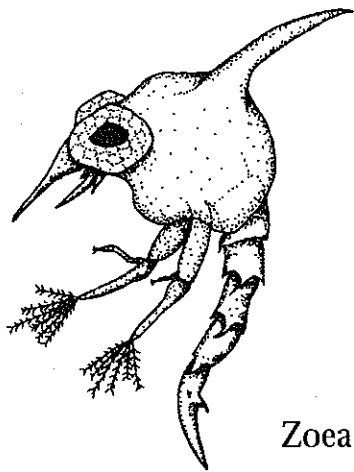
oysters



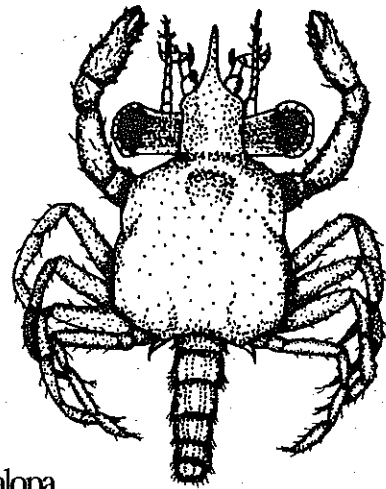
phytoplankton

(algae)

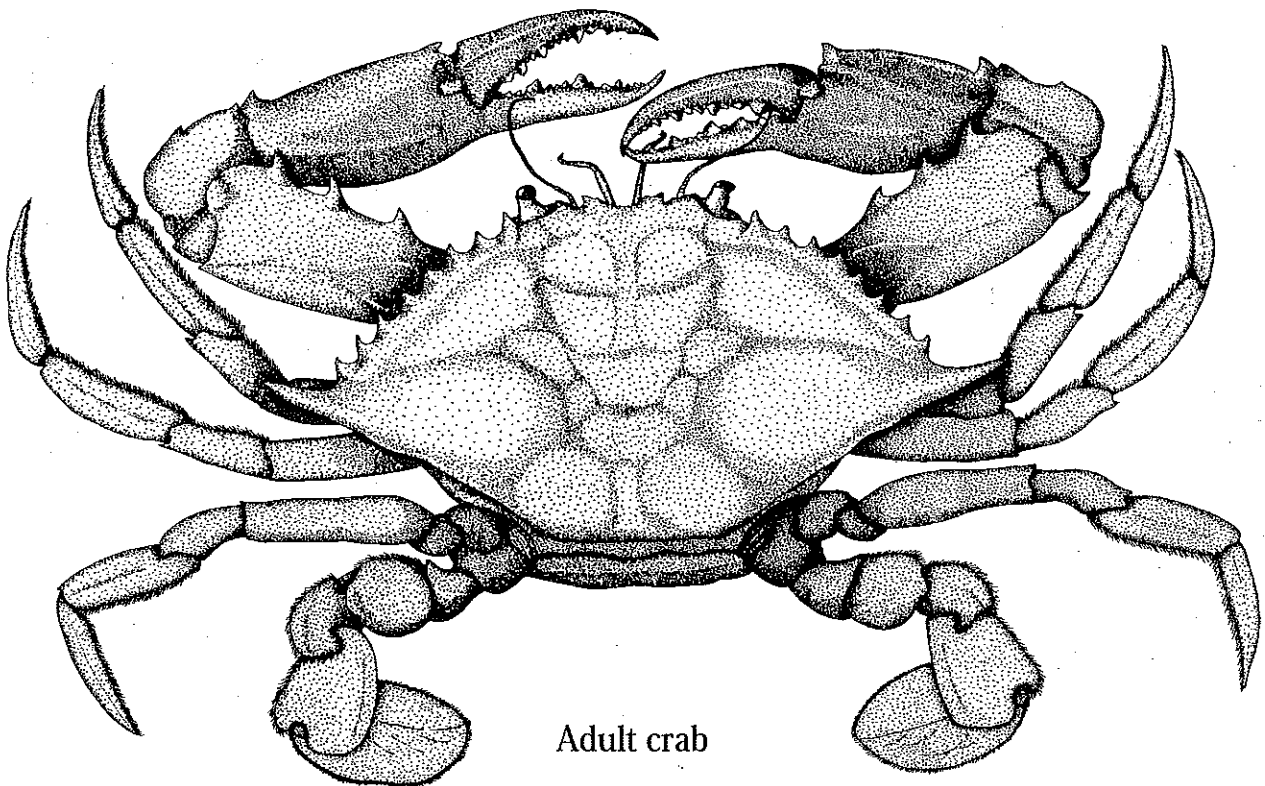




Zoea



Megalopa



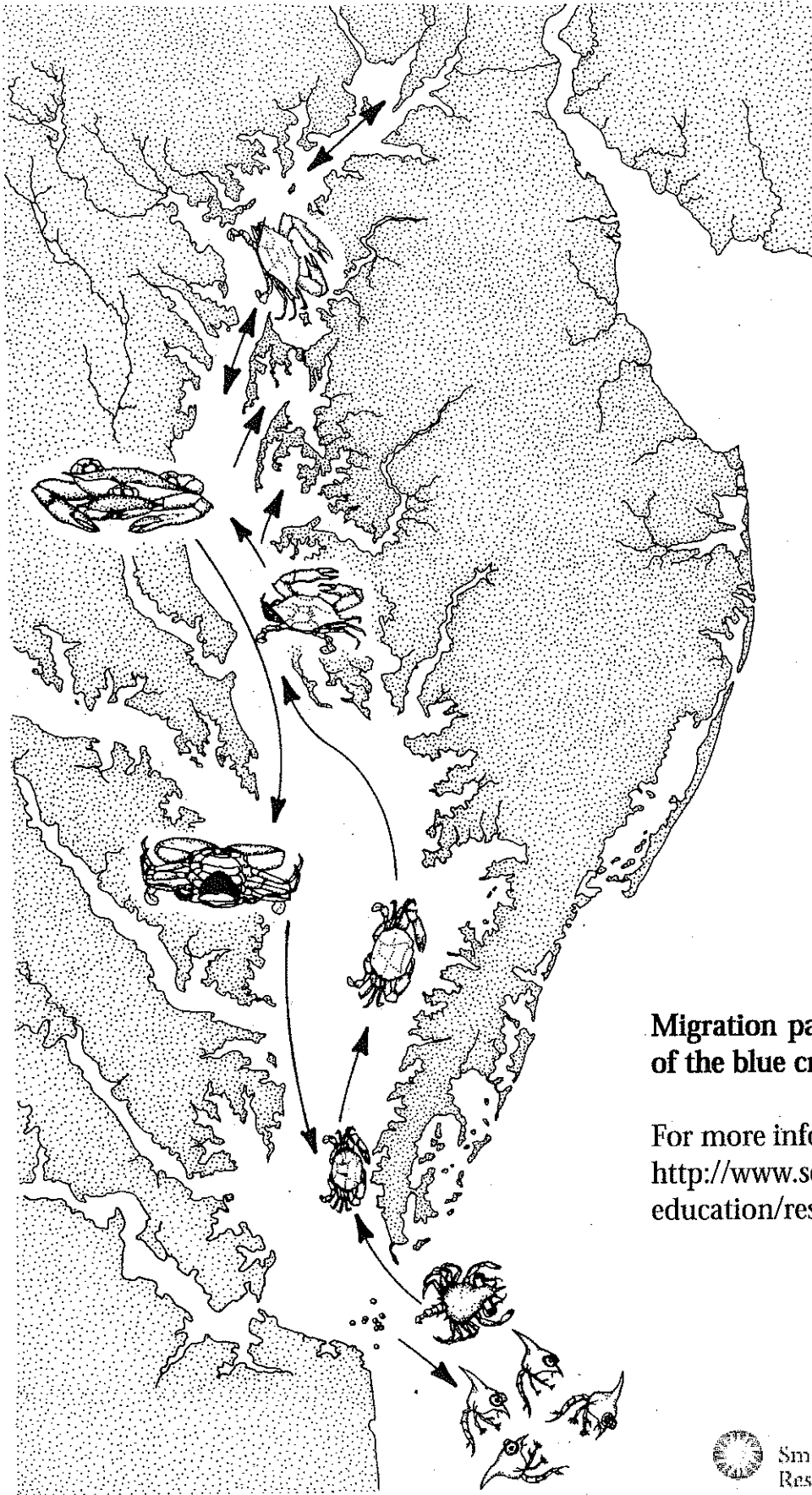
Adult crab

Blue crab: *Callinectes sapidus*

For more information about the blue crab, visit
<http://www.serc.si.edu/education/resources/bluecrab>



Smithsonian Environmental
Research Center



**Migration pattern
of the blue crab**

For more information, visit
[http://www.serc.si.edu/
education/resources/bluecrab](http://www.serc.si.edu/education/resources/bluecrab)



Smithsonian Environmental
Research Center

Chesapeake Bay Unit: History

Subject: Science

Grade: Second

Materials: Chesapeake Bay Activity Book, Map of Maryland, Plain Paper

Objective: Students will create a tourism advertisement after learning about the history of the Chesapeake Bay and why it is important to the environment and to people. Students' work will show that students understand how tourism, boating, and fishing benefit people.

Motivation/Warm Up

- Ask students who has heard of the Chesapeake Bay. Build prior knowledge by talking about crossing the bay bridge to get to the beach. Talk about places on bay and ask if they have been there. (5 min discussion. Let them talk)
- Make a quick list of things to do there.

Instructional Procedures

Clock Time:

1. Read "Welcome to the Chesapeake Bay" on page 2-3 of Bay Activity Book. Ask questions to class as article is read.
2. Show map of Maryland and Chesapeake Bay. Show map on the back.
3. Turn to Page 4: Discuss Marine Life and Fishing. Read and discuss with students. Find out who has ever been fishing and how hard it was.
4. Turn to Page 9: Read "Fossils." Ask students what they know about fossils. Show them some fossils from the bay area. Pass them around CAREFULLY.
5. Read Page 12: "Annapolis-Severn River" and "Boating". Discuss how Boating was important to settlers in Captain John's time as well as today.
6. Have students make a poster advertisement telling folks to visit the Chesapeake Bay because of its rich history, fishing, and boating.

Closure: Have a couple students share their advertisements. Talk about how tomorrow we will start to learn about the habitat and environment of the bay.

Homework: Shoebox

Modifications: All need wrap Anthony and Isabel.

Chesapeake Bay Unit: Day 2

Subject: Science

Grade: Second

Estimated Time: 20/25 (1 hour)

Materials: Shoe Boxes for Each Student, Fish Printout, Note Cards, Highlighters, Colored Pencils, Colored Paper, Scissors, Glue, Fishing String, Metal Rings for Student Note Card Books.

Objective: Students will identify many plants and animals that inhabit the Chesapeake Bay and how they interact after guided instruction and independent work. Students will be assessed at the end of the unit by completing a diorama of the Chesapeake Bay habitat.

Motivation/Warm Up:

Clock Time: 9:20-9:25am

1. Briefly discuss my last trip to Chincoteague Island and the tidal marshes of the bay area (Real life example). Talk about different habitats within the Chesapeake Bay region: Marsh areas, Bay areas, above the water and under the water.

Instructional Procedures:

Clock Time: 9:25-10:00pm

1. Pass out fish/animal life worksheets. Read each paragraph on the worksheet. Have students number the paragraph and the matching animal. Next have students highlight parts of the paragraph that describes what color they should color the animal. Discuss the animal and any special features as the class reads along.
2. After the class has read through each paragraph, have students color their animals. Whatever is left uncolored will be taken home for homework.
3. If students have completed the fish and other animal worksheets, they may pick out the construction paper they want to line the inside of their shoe boxes for their dioramas. Model this prior to having students do it. Stop students who may still be working on animals and draw their attention to teacher instruction. Discuss what color paper is to be used and why.

Closure: Ask students what they have learned about life in the Chesapeake Bay.

Homework: Have students take home uncolored work to complete at home and return tomorrow.

Modifications: Help students as needed. Read aloud information and have them track.

Chesapeake Bay Unit: Day 5

Subject: Science

Grade: Second

Materials: Shoebox for Each Student, Fish Printout, Note Cards, Highlighters, Colored Pencils, Colored Paper, Scissors, Glue, Fishing Wire, Metal Rings for their Note Card Books, Food Chain Activity

Objective: Students will identify many plants and animals that inhabit the Chesapeake Bay and how they interact after guided instruction and independent work. Students will be assessed at the end of the unit by completing a diorama of the Chesapeake Bay habitat.

Students will also identify a food chain and web of the Chesapeake Bay.

Motivation/Warm Up:

Clock Time: 9:20-9:25am

1. Review what we learned about animal life yesterday. State objective. Set clear expectations that they must have their dioramas completed today. Discuss how the different animals interact within the Chesapeake Bay habitat. Talk about how part of this includes who eats who, or a food chain.

Instructional Procedures:

Clock Time: 9:25-10:00am

1. As a class, look at a food web of different animal life within the Chesapeake Bay habitat. Use overhead of food web.
2. Pass out a food web worksheet and have students draw arrows to indicate who eats what. Students must complete at least 8 correctly. Give students about 10 min to do this.
3. Give the students the remaining time to complete their dioramas.
4. As students finish, walk around the class and ask them to use their books to tell you about what they have made and explain the habitat. Take anecdotal notes on students' explanations.

Closure: Tie it all together. Ask students how the different plants and animals interact. Discuss the importance of the food chain, food web, etc. Ask students questions to informally assess their knowledge of the Chesapeake Bay.

Homework: None

Modifications: Help students as needed. Read aloud information and have them track.

Extensions: For early finishers, give the option of completing one of the following activities:

1. Re-read pages 2-3: "Welcome to the Chesapeake Bay". Write a letter To Captain John Smith and tell him what to expect on his journey through the Chesapeake Bay (i.e. "Dear Captain Smith, The Chesapeake Bay is full of animal and plant life. It's a great place to boat and fish for food. There are lots of.....")

NAME _____ # _____

Share about your trip to the Chesapeake Bay.

1. Make a list of some of the seafood that you and your family like to eat.

2. What activities have you done at the Chesapeake Bay? If you have not been there, what activities would you like to do?

3. Why is the Chesapeake Bay so important to you? Think about what we have learned this week.

4. Predict the thing, or things, that you think are the most harmful to Chesapeake Bay when they run off the land and into the water.
