

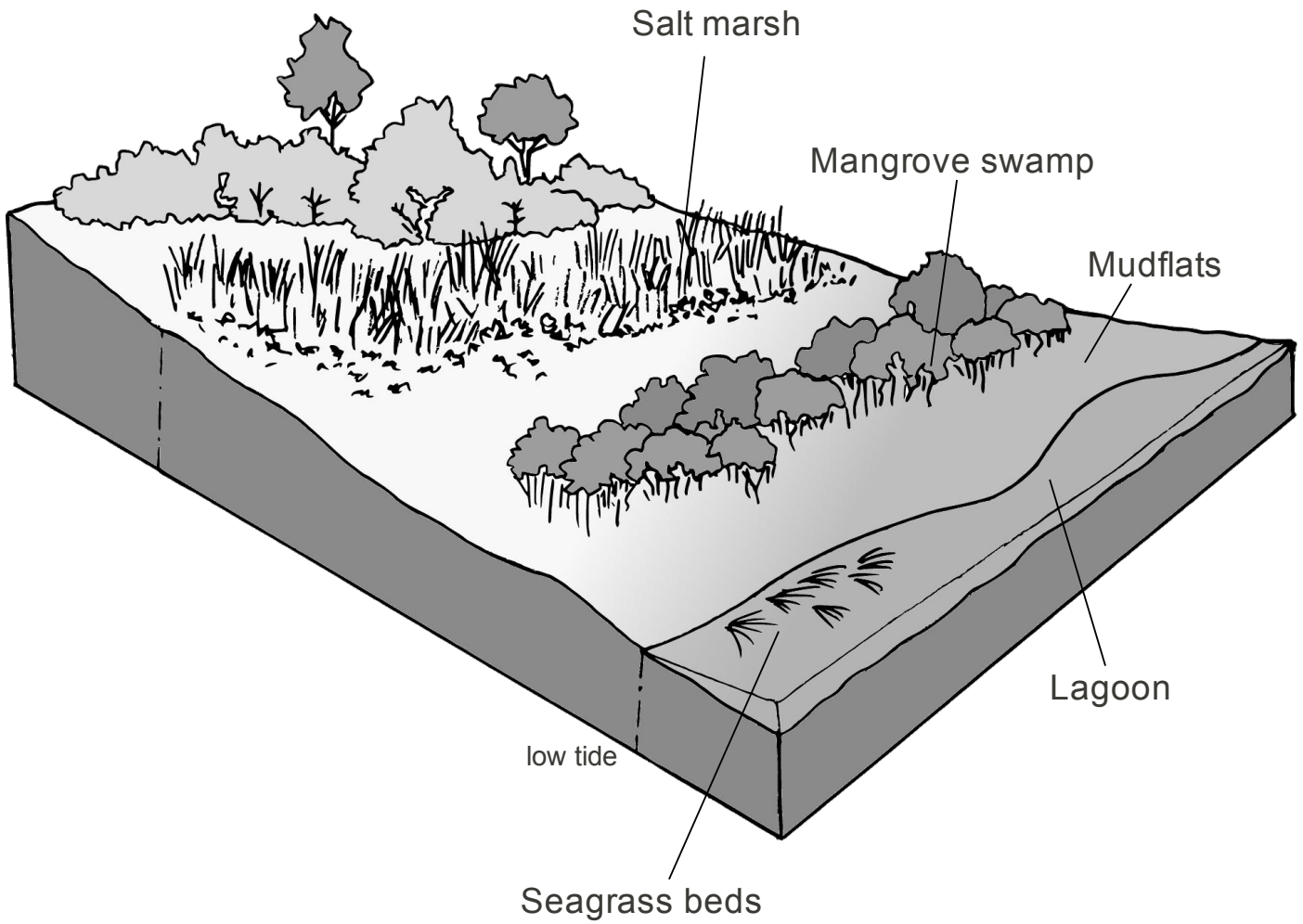
TEACHER MASTER

Estuary Bird Cards

 <p>A Great Blue Heron stands in shallow water, its long neck extended and legs visible.</p>	 <p>An Osprey is shown in flight, with its wings spread wide, revealing dark feathers on the upper wings and lighter feathers on the lower wings.</p>	 <p>A Willet stands on a muddy or sandy shore, facing left. It has a long, straight bill and dark plumage.</p>	 <p>A Roseate Spoonbill stands in shallow water, its long, flat bill and pinkish-red feathers clearly visible.</p>
 <p>Several Great Egrets are gathered in a marshy area, their white feathers and long necks prominent.</p>	 <p>A Glossy Ibis stands in shallow water, its long, downward-curved bill and dark, iridescent feathers are the main features.</p>	 <p>A Marsh Wren is perched on a thin branch, holding a small insect in its beak.</p>	 <p>A Tern is perched on a rock or log, showing its white body, black cap, and long, sharp beak.</p>
 <p>A close-up of a Brown Pelican's head and neck, highlighting its large, hooked bill.</p>	 <p>A Whooping Crane stands in a field, its long neck and white feathers are the primary characteristics.</p>	 <p>A Sandpiper is shown in profile, standing in shallow water and looking down.</p>	 <p>An Avocet stands in shallow water, its long, thin, upturned bill and long legs are distinctive.</p>
 <p>A Woodstork stands in a field, its long, straight bill and white feathers are clearly visible.</p>	 <p>A Snowy Egret stands in a field, its white feathers and long, thin legs are the main features.</p>	 <p>A Black Skimmer is perched on a rock, showing its black body and long, red-tipped bill.</p>	 <p>A Crested Cormorant is perched on a wooden post, its dark feathers and long, hooked bill are prominent.</p>

TEACHER MASTER

Estuary Habitats



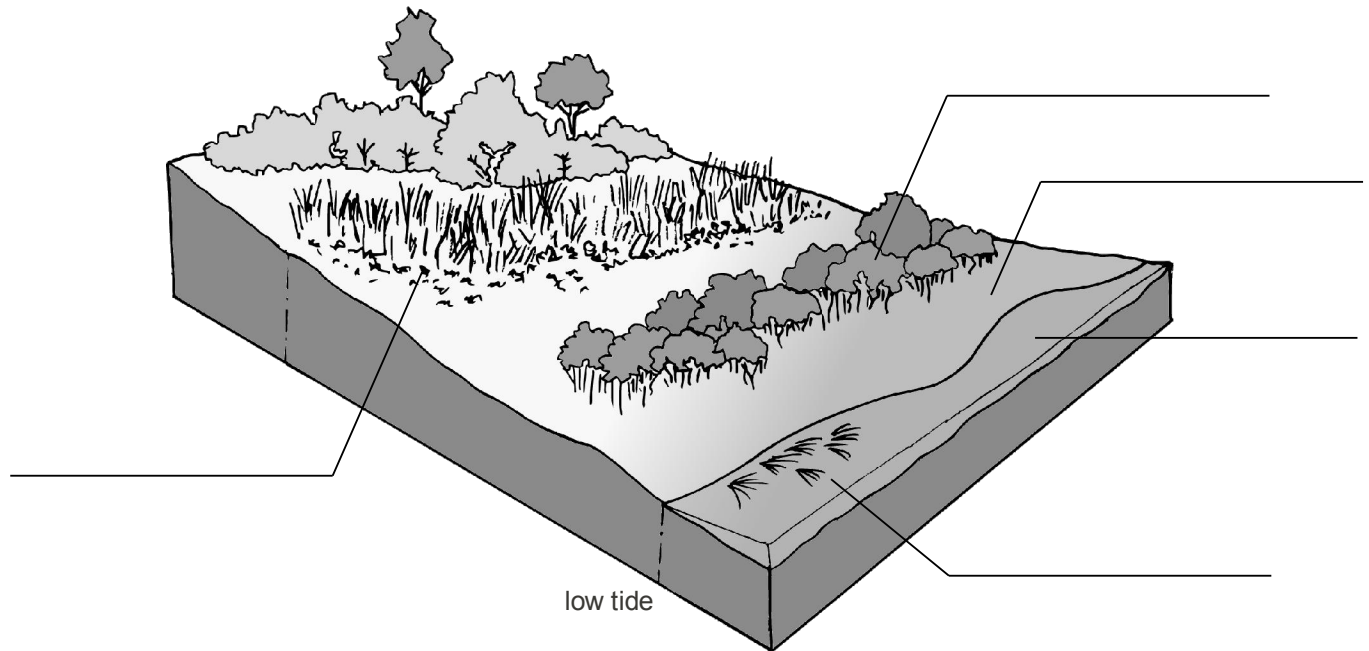
STUDENT MASTER

Great Birds of the Estuaries

Estuaries actually contain a number of different habitats, each better or worse suited for different species of birds, as well as other estuary animals and plants. Here are five of the main estuary habitats:

1. A **lagoon** is an area of shallow, open water, separated from the open ocean by some sort of barrier, such as a barrier island. The water in a lagoon can either be as salty as the ocean or brackish.
2. A **salt marsh** has non-tree plants (grasses, shrubs, etc.) whose roots grow in soil acted upon by tides, but the plants are mostly never submerged.
3. The woody trees that grow in a **mangrove swamp** grow in soil affected by tides. Mangrove trees only grow in estuaries that never freeze.
4. **Seagrass beds** are always submerged underwater. Seagrass is photosynthetic, so it grows in water that is shallow and clear enough for the grass to get sunlight. Seagrass is anchored to the muddy or sandy bottom.
5. **Mudflats** are sometimes also called tidal flats. They are broad, flat areas of extremely fine sediment (mud) that become exposed at low tide.

There are other estuary habitats. A beach or rocky shore can be part of the estuary. Salt ponds, oyster beds, and sand bars are also found within an estuary.



Use the estuary habitat descriptions to label the above image with the correct name of the habitat.

Now follow the procedures below to investigate some of the birds found in our nation's estuary habitats.

Procedure

1. Draw a random estuary bird card offered by your teacher. Use books or the Internet to do research about your bird.

2. At minimum, gather the following information:

Name of the estuary bird: _____

Characteristics of the estuary bird (e.g., size, beak shape, what it eats, etc.):

Where in the estuary (i.e., which estuary habitat) does the bird feed?

Does the bird nest in the estuary? If so, where?

What are examples of adaptations that make this bird suited to its preferred estuary habitat(s)?

3. Your team needs to prepare a three-minute presentation for your class that will tell about your estuary bird and its preferred habitat(s). Check with your teacher to see if there is a suggested presentation format.
4. When you are ready to give your presentation, have one of your team members tape the image of your estuary bird onto the large Estuary Habitat diagram your teacher has provided. Be sure to put your estuary bird in its preferred estuary feeding habitat!
5. Once you have heard all of the teams present their birds, answer the following questions.

Questions

Q1. Why do different types of birds feeding in the estuary habitats differ?

Q2. Why do certain birds live in the habitat you researched but not in others?