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Long ago, there was a sandpiper bird who was searching for a home. Some sandpipers have short, stubby wings, sharp, pointed beaks for digging up squdjums and squeakers along the water's edge and big feet so it doesn't sink into the mud. And this sandpiper was named for his feet; "MUDTOES".



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He was looking for a habitat and a passing seagull told him of a distant place called "**King's Town**". The seagull said there was plenty of squeakers and mud. It was a long flight. Or actually, many, many short flights over streams, woods and water. Finally the sandpiper bird arrived in a clearing in a forest. He landed, and spotting a crow in a nearby fir tree, called out;

"Hello there, crow. I'm looking for King's Town. Is it nearby?"

"Caa, caa" She croaked back. "This is King's Town."

"Oh," Mudtoes paused. "Well, I'm hungry. Where's the best place to find some squdjums and squeakers to eat?"

The crow gazed down from its perch. "That would be on the **Carpenter's** land, where the best mud is."

"But," and she tipped her head towards Mudtoes,

"No one goes there now."

"Why not?" asked Mudtoes.

"Because of the *great water snake*." The crow's voice grew quieter. "It is enormous. It lies with its tail in the lake, its body coils through the forest, and its head is in the bay. Little fish used to go to school, and herons deposited their nest eggs, while snails and beetles crawled through the marsh grass. Now they are afraid. It is so big, it breathes in and out just twice a day."

ESTU-
ARY.

Well, you can bet Mudtoes was scared too. But he needed a home and food and felt sorry for the animals who had been frightened away. In a few quick flaps, he was over the beach. There he landed, and after looking around, began to stick his sharp beak into the sand, poking around for some lunch. And then he saw it - the **GREAT WATER SNAKE!**

The crow hadn't exaggerated. It was **awesome**. Mudtoes could see the gigantic head and body *disappearing* into the dark green forest. As Mudtoes looked, the snake raised its head, and *hissed*, "Who dares to land on my beach?"

"I, I, I do..."

"Who are you and what do you want?"

"I am Mudtoes, the sandpiper, and I'm looking for something to eat."

"So am I!" and with that, the snake struck at Mudtoes. But, quick as a wink, the bird hopped to one side and grabbed the long flickering tongue, splitting it and giving it a new sound.

"Et go! Et go! Ou got my ongue!" cried the snake.

"Only if you give this land back to the carpenter, and leave here **forever**" said Mudtoes.

"Ok, I'm oing, I'm oing."



So Mudtoes let go of the snake's tongue and the snake slithered back into the forest. When the snake disappeared, the carpenter's land grew bright with the noise of birds and the snails and beetles returned. Where the snake had lain, they saw a deep trough leading from the lake to the shore which slowly filled with water. And if you go there today, where the fresh and salt water mix, you'll see that the young fish have opened their nursery school again, and the herons are carefully depositing their nest eggs. Many of Mudtoes' relations call the place home and spend their days hunting for squidjums and squeakers.

And the great water snake? Well, we remember him in two ways. First, the name of these kinds of places, where fresh and saltwater mix, begins with his hiss... "*E s s s-tuary*". And, second, if you are very patient, you will see that it still breathes in and out just twice a day.



Another fun art project; these designs were made from carved potatoes and imprints of found objects.

ESTUARIES: WHERE THE RIVERS MEET THE SEA.

Estuaries are rich environments where rivers meet the sea. Puget Sound is actually a large estuary where fresh water and salt water mix. Fresh water from ten major rivers and countless streams flows into Puget Sound, making its water on average less salty than the open sea.

Marginal at Its Best!

The richness of the estuary is a result of its, shall we say, marginal character. Not only is an estuary the margin between fresh and salt water, but it is also a margin between land and water. These margins of different environments provide a diverse habitat used by an enormous number of plant and animal species. Estuaries provide food, shelter and spawning habitat for many of the region's fish, shellfish, birds and mammals during all parts of their lives. Take a look at some of the critters that you might find in a local estuary: salmon, herring, crabs, shrimp, clams, oysters, ducks, geese, loons, herons, kingfishers, eagles, hawks, raccoons, foxes, otters and seals. Can you add any others? Visit a local estuary at low tide and then again at high tide. Make a list of the animals you see there each time. Try different seasons, both night and day. Compare the lists and see how they differ.

Maintaining the Balance

The fact that estuaries are such rich and diverse habitats used by so many animals and home to so many plants, make them particularly at risk to pollution resulting from human activities. Also, since many species of animals use estuaries as nursery areas eventually living in other habitats as adults, pollution that effects their survival while in the estuaries may have broad ecological consequences. The natural process of estuaries can lead to accumulation of pollutants in the environment. Often contaminants carried in water entering an estuary will settle out of the water and collect in the sediments. So, by keeping our waters clean throughout the watershed, we help to protect some of Kitsap County's and Puget Sound's most important environment--the estuaries.

Geography Activity:

On a map of western Washington, locate the ten major rivers that empty into the Puget Sound.

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|--------------------------------|---|
| 1. Nooksack | 6. Duwamish/Green |
| 2. Skagit | 7. Puyallup |
| 3. Snohomish | 8. Nisqually |
| 4. Stillaquamish | 9. Skokomish |
| 5. Cedar/Lake Washington Canal | 10. Elwha (into Strait of Juan de Fuca) |

On your map, see if you can name the streams that flow into an estuary near your home or school.

