

Q&A between AHB and DNR staff, July 2009

Why should I care about the fate of HSCs?

Because your life has probably been saved by HSCs. All pharmaceuticals (vaccines, IV fluids, etc) or devices such as dialysis equipment, artificial joints, heart-lung machines, etc are tested for the presence of endotoxins using a reagent made from the blood of HSCs. Endotoxins are produced by certain bacteria, and if they get into the human bloodstream can be fatal. The crabs are not killed by being bled and are returned to the water where they were caught.

Why are the Herring Bay beaches a good place for HSC's to lay eggs?

Probably because they have the right conditions – correct slope, correct sand diameter, correct salinity and low wave action Horseshoe crabs prefer to spawn in sheltered coves and bays because the wave action is less.

How does the slope and/or shallowness of the water affect their breeding?

They prefer a beach slope of 3-7%. If the slope is too great, they have a hard time getting above the tide line.

How small can the beach be and still be a spawning area (e.g., < 100 feet)?

Yes, the beach can be < 100 feet.

Will they lay eggs if there are a lot of small rocks/shell fragments?

They prefer coarse sand with no peat, so it depends on the size of the rocks or shell fragments.

What is the breeding season?

It depends on the water temperature; temp should be 58° F or higher, usually mid-May through June

Do the tides affect their breeding?

Spawn on the high tide, preferably at night

Does the moon's cycle affect their breeding?

Yes; they spawn on the full and new moon (or a few days after the full and new moon) because that's when the tides are highest (called spring tides)

Does wave action affect their breeding (e.g., calm vs rough waters)?

They spawn when wave action is less than one foot. If the wave action is higher, they risk getting flipped over.

How do they know to come to our beaches?

No one really knows

Do they return to the same beaches each year?

The same crabs do not necessarily return to the same beach. They are not "nest faithful" like sea turtles.

How do males locate egg-laying females?

Combination of pheromones (chemical scents) and vision

How deeply are the eggs buried?

6-10 inches below the surface, just above the high tide line.

What do the eggs look like?

Small green balls about the size of BBs

When do they hatch?

Hatching can occur anywhere from two weeks to several months later depending on conditions. The warmer the water and the higher the salinity, the more rapid the development.

What do they look like when they hatch?

They look like adult horseshoe crabs but without a tail; they'll grow a tail when they molt for the first time.

Where do the baby HSCs they go after they hatch?

They will swim for a short period of time and then settle to the bottom and burrow into the sediments off the beach where they were spawned. They'll remain here for up to a year.

Do HSCs migrate? If so, to and from where?

They may move up and down the coast but they don't actually migrate

Where do they live in the winter?

Off shore on the continental shelf

Do they hibernate?

No

What do they eat?

They feed mainly on marine worms and shellfish including razor clams and soft-shelled clams.

How long do they live?

They can live at least 20 years and possibly longer than that.

If we HSCs stranded/upside down, what should we do?

Turn them over

How should we pick them up?

Hold them by the front of the shell. Never hold them by the telson because if the telson breaks off, the crab can't turn itself right side up

Would the eggs be harmed if we dug them up and reburied them?

Probably

Would the eggs be harmed if we drove on the beach where they were laid?

Probably

Would putting in living shorelines affect their ability to breed on our beaches?

If the living shoreline replaces bulkheading or rip rap, that would greatly improve their ability to spawn.

Do piers affect their ability to breed on the beach?

Probably not.

If HSCs become threatened or endangered species, would DNR or the federal government make us stop using our beaches to protect the HSCs?

There is no indication at this point that horseshoe crabs are likely to become threatened or endangered.

Why are there fewer HSCs in the bay than in the past?

We really don't know if there are fewer HSCs in the Chesapeake Bay because there have not been any long term surveys done in the Bay. In Delaware Bay and along the coast, the numbers seem to be declining. This is probably caused by over-harvesting in the past for fertilizer and current harvesting for bait for conch and eel pots. Another possible cause is loss of spawning habitat due to beach development.

What can we do to reduce the risk HSCs will become endangered species?

Do everything possible to protect their spawning beaches