

Why do half of the world's Western Sandpipers like to feed on the tidal flats south of Roberts Bank near Vancouver?

# 'Snot' Eaters! Who knew?

At low tide each March and April huge flocks of Western Sandpipers swoop down to feed on the 6,000 hectares of brownish-grey gooey mud south of Roberts Bank.

Thousands and thousands of sandpipers – half the world's population – land here as they migrate from wintering as far south as Peru to their breeding grounds in the Arctic. They work their way over the flats, pecking furiously at the mud and stoking up for their long flights.

Scientists used to think that the sandpipers were eating the bugs and worms **IN** the mud. By using video film close-ups, they discovered it is the slimy stuff called 'biofilm' on **TOP** of the mud that sandpipers like to eat.

What is 'biofilm'? It is a kind of oozy glop made up of microorganisms such as bacteria, algae and diatoms, which are rich food for sandpipers. At low tide the seawater slowly seeps out of the mud, leaving the microorganisms as a slimy mucus on top of the mud. The technical name of this mucus is *mucopolysaccharide*, which basically looks and feels the same as snot.

Dunlin and other shorebirds don't eat biofilm. So what is the sandpipers' secret? The close-up studies showed that sandpipers have fine hairs on their tongues. The snot-like layer of biofilm is very, very thin so sandpipers slurp it up with their hairy tongues and specialized beaks.

As the birds move slowly across the mudflat, they simply place their open bill tips on the surface of the mud and collect a tiny ball of biofilm, work it back and forth then swallow it. They're just snorting it up!

Scientists also now know that biofilm provides sandpipers with as much as half of their daily energy requirements during migration.

The flocks of tiny sandpipers, (which weigh only about 30 grams each), suck 20 tonnes of the sticky slime off the mud every day to keep up their energy during their long flight.

This means the mud flats at Roberts Bank are an extremely important feeding ground for sandpipers.

The biofilm on these flats is the richest in nutrients and gives the tiny birds the energy to continue their long migration to the Arctic. Without the biofilm most of the birds would not make it to the end of their journey.



You can see the biofilm being slurped up into the sandpiper's bill.



Biofilm being drawn up by hairy tongue.



# Sandpiper Migration

## Conservation note:

Unfortunately the biofilm on the mudflats has been damaged by building a large port at Roberts Bank and the numbers of sandpipers have dropped by half. Now there are plans to expand the port. Scientists, environmentalists, naturalists and community members have been working hard to see this does not happen. The recent Environment Canada report says that loss of the biofilm is something that cannot be replaced so there is hope that the mudflats with their nutritious 'snot' will be preserved for the thousands and thousands of sandpipers who come here in spring every year.



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All photographs: Jason Puddifoot, BC