



Digital Products

- See today's Digital Edition
- Subscribe to email newsletter

Inside Times Colonist

- News
- Capital & Van. Isl.
- Comment
- Letters
- Business
- Working
- Sports
- Life
- New Homes
- Arts
- Obituaries
- Columnists

- 30 day Archive
- Headline Scan
- The Stocks Page
- Newspaper Ads
- Special Sections

Weekly Sections

- Books and Ideas
- Travel
- Automotive
- Go!
- Homes

Features

- Victoria's Sewage
- New Homes Special

Classifieds

Marketplace

- Find a job at working.com
- Find a car
- Find an apartment at househunting.ca
- Find real estate at Homes
- Find great stuff at shopping

Announcements

- Announcements at Celebrating.com
- Obituaries at Remembering

General Classifieds

- Local classifieds
- Selling? Place an ad
- Meet a match at Connecting

Enter our contests

- Local Contests
- National Contests

Your Times Colonist

- Subscriber Services
- Subscribe
- Renew subscription
- Update credit card information
- Send us a news tip
- Advertising

Snot-like mud coating makes Roberts Bank unique for sandpipers

Half the world's western sandpipers land in one area — just for the 'biofilm'

Margaret Munro, Canwest News Service
Published: Monday, April 14, 2008

An international team has discovered why half the world's western sandpipers touch down on a very specific tidal flat just south of Vancouver every spring.

The secret is in the mud. More specifically, in the snot-like "biofilm" coating the mud.

The tiny shorebirds, weighing about 30 grams each, suck a remarkable 20 tonnes of the sticky slime off the mud every day as huge flocks swoop down to refuel during the spring migration, the scientists estimate.



[View Larger Image](#)

Sandpiper at Robert's Bank mud flats, handout.

[Email to a friend](#)

[Printer friendly](#)

Font: [A](#) [A](#) [A](#) [A](#)

[BOOKMARK](#) [Print](#) [Share](#) [More](#)

thought 'It's just mud, we've got tonnes of the stuff,' says Elner. "But it's not just mud. It's quite precious mud," he says, pointing to the thick brownish-grey goo that stretches for 6,000 hectares at low tide.

What sets the mud apart is the "biofilm" laid down as bacteria and diatoms settle out of the sea water, the researchers say. The microorganisms secrete mucus that binds them to the mud, so they won't wash up with the tide. "It's a mucopolysaccharide, which is the same as snot basically," says Elner.

He says biofilm is common to all aquatic ecosystems but Roberts Bank produces an ex-traordinary amount because of the tidal currents and nutrients flushing out of the Fraser River.

"It's been known to exist for eons, and regarded as something a few snails fed on, but it's never been thought of as a bird food," says Elner, whose team has shown the energy-rich slime is the main source of nutrition for the giant flocks of sandpipers that descend on Roberts Bank. They suck up the biofilm with their hairy tongues and specialized beaks.

"They're snorting it up," says Elner, whose team details the findings in the current issue of the journal Ecology.

The researchers sifted through the birds' droppings, examined their stomach contents and set up powerful cameras to videotape them racing across the mud flats, so fast they are often just a blur. Frame-by-frame analysis of the videos revealed the sandpipers probe the mud with their beaks an average of 121 times a minute and poop every two minutes.

The discovery is big news for birders, who have long assumed sandpipers eat bugs and worms. "Snot feeding," as Environment Canada biologist Bob Elner describes it, adds a whole new dimension to avian life.

It also has big implications for a proposed \$1-billion federal port expansion at Roberts Bank in the midst of what is widely considered Canada's most important bird habitat. The plan is to double the size of the existing port directly in front of the mud flat where one to two million sandpipers — half the world's population — stop in April and May as they migrate from the tropics to breeding grounds in the Arctic.

It is an open question whether the sandpipers, whose numbers appear to be declining, and the ever-expanding port can co-exist. Understanding the impact of the controversial port expansion on the biofilm will be a "critical part" of the federal environmental assessment, says Elner, a biologist with the Canadian Wildlife Service.

He and his colleagues from Japan, France and Simon Fraser University spent close to six years figuring out why the sandpipers are so partial to the Roberts Bank mud flat. "Everyone



shopping™

Know more. Buy better.



Get started with shopping today!

TIMES COLONIST



Today's Colonist



Marina plan floated for Victoria harbour

Multimillion-dollar luxury mega-yachts would dock at Victoria harbour under a plan...

[\[more \]](#)

- \$4.3 million provided for Cowichan-Victoria bus service
- North Van fire leaves 3 dead
- Edward Milne school to remain closed Thursday

[More News Stories](#)

News on canada.com



Millions wait for aid in Myanmar

As a million hungry and homeless survivors of cyclone Nargis wait for help in Myanmar...

[\[more \]](#)

- New figures reveal scope of Afghan mission's mental toll
- Clinton unbowed as calls grow for her to withdraw

[More on canada.com](#)

Get the daily headlines emailed to you every morning with the Victoria Times Colonist newsletter.

Email Address:

[submit](#)

[Our Privacy Statement](#)

local classifieds jobs cars obituaries celebrating shopping homes dating

- See today's Digital Edition
- Subscribe to email newsletter
- Subscriber Services

TIMES COLONIST



13°C
Partly cloudy
Detailed Forecast

Times Colonist Home Search for in the Times Colonist Thursday, May 8, 2008



Digital Products

- See today's Digital Edition
- Subscribe to email newsletter

Inside Times Colonist

- News
- Capital & Van. Isl.
- Comment
- Letters
- Business
- Working
- Sports
- Life
- New Homes
- Arts
- Obituaries
- Columnists

- 30 day Archive
- Headline Scan
- The Stocks Page
- Newspaper Ads
- Special Sections

Weekly Sections

- Books and Ideas
- Travel
- Automotive
- Go!
- Homes

Features

- Victoria's Sewage
- New Homes Special

Classifieds

Marketplace

- Find a job at working.com
- Find a car
- Find an apartment at househunting.ca
- Find real estate at Homes
- Find great stuff at shopping

Announcements

- Announcements at Celebrating.com
- Obituaries at Remembering

General Classifieds

- Local classifieds
- Selling? Place an ad
- Meet a match at

Snot-like mud coating makes Roberts Bank unique for sandpipers

Half the world's western sandpipers land in one area — just for the 'biofilm'

Margaret Munro, Canwest News Service
Published: Monday, April 14, 2008

The birds swallow about seven times their own weight in biofilm each day, and it makes up 45 to 59 per cent of their total diet, the researchers report. This means the average flock of 100,000 sandpipers consumes almost 20 tonnes a day.

The scientists will join the birds in the air with a research plane from Simon Fraser University, fitted with special cameras and sensors that can discern wavelengths not visible to humans but seen by some birds. "It's a possibility that as they're flying over they can look down from several thousand feet up and see that 'Wow, there is some in that estuary,'" says Elner, who suspects biofilm is plentiful at all the sandpipers' refuelling stops, which include San Francisco Bay and the Stikine River estuary on the Alaska Panhandle.

"Threats to biofilm," Elner and his colleagues say in their report, should be assessed when considering future development.

The most obvious threat is the port just south of Vancouver, which already casts a long shadow over Roberts Bank. A four-kilometre causeway cuts across the south end of the bank leading to the port where coal is loaded onto ships bound for Asia, and towering cranes pull containers off ships that have just arrived. The port, key to B.C.'s \$13-billion Asia-Pacific Gateway project to expand trade, is in the midst of a \$400-million expansion due for completion in 2009.

The Vancouver Fraser Port Authority has a proposal to further double the port's capacity with Terminal 2, expected to cost well over \$1 billion. The plan is to build it on the north side of Roberts Bank in front of the sandpipers' favoured feeding ground.

Mixing migratory birds and massive ports is seen by many as a recipe for disaster and is one of the reasons citizen and environmental groups oppose the expansion.

Darrell Desjardin, director of environmental programs at the port authority, says the federal corporation intends to do right by the birds and the biofilm they eat. Desjardin suggested the Terminal 2 expansion might actually benefit the sandpipers if methods can be devised to artificially enhance production of the biofilm.

Elner does not rule out the possibility. But he stresses there are still many unanswered questions about the natural process creating and replenishing the sticky goo the birds find so "delectable" — questions both he and Desjardin say will have to be answered as part of the formal environmental assessment as Terminal 2 moves head.



STUNT STARS **Wednesday** **EVERYTHING ENTERTAINMENT** © Under license from E! Entertainment Television, Inc.

Today's Colonist



Marina plan floated for Victoria harbour

Multimillion-dollar

luxury mega-yachts would dock at Victoria harbour under a plan...

[\[more \]](#)

- \$4.3 million provided for Cowichan-Victoria bus service
- North Van fire leaves 3 dead
- Edward Milne school to remain closed Thursday

[More News Stories](#)

News on canada.com



Millions wait for aid in Myanmar

As a million

hungry and homeless survivors of cyclone Nargis wait for help in Myanmar...

[\[more \]](#)

- New figures reveal scope of Afghan mission's mental toll
- Clinton unbowed as calls grow for her to withdraw

[More on canada.com](#)

© Times Colonist (Victoria) 2008