The Story of Bico

Credits

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Nature Canada is honored to support the Cree First Nations around James Bay, Canada for the conservation of shorebirds and the protection of nature.

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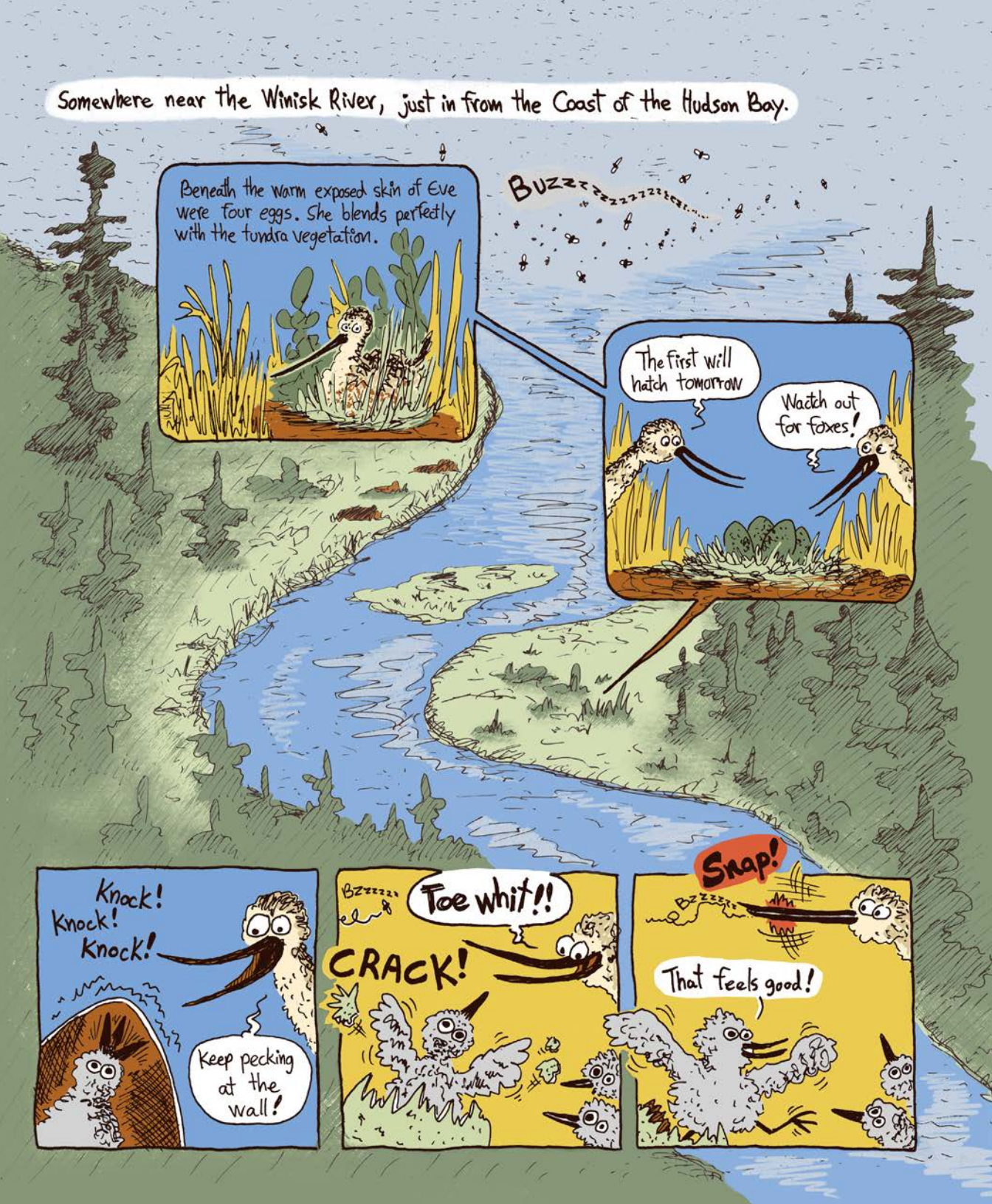
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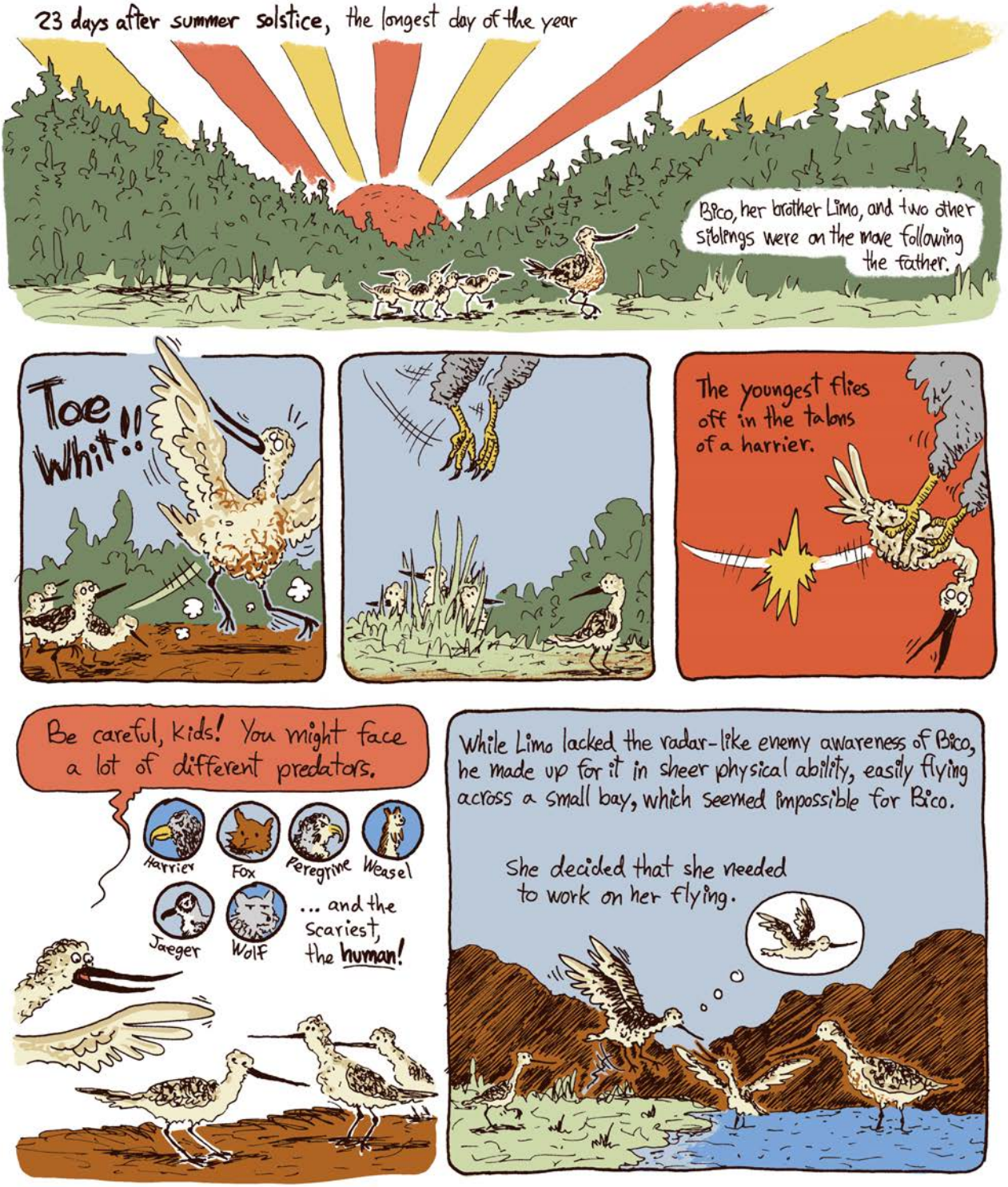
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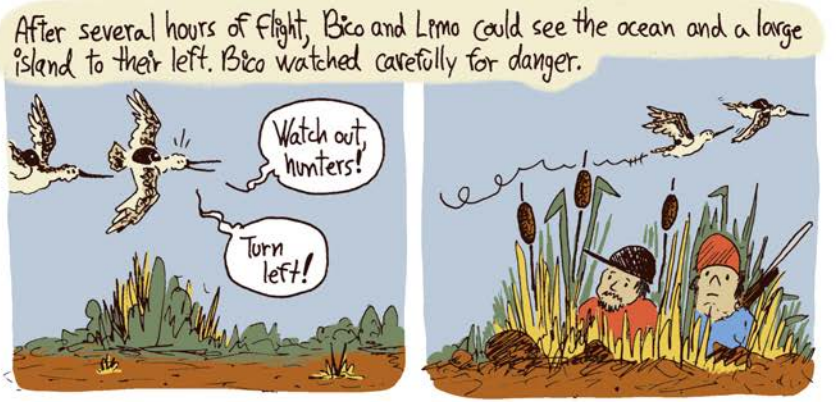
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The Story of Bico
The Story of Bico


Somewhere near the Winisk River, just in from the Coast of the Hudson Bay.
Beneath the warm exposed skin of Eve were four eggs. She blends perfectly with the tundra vegetation.
BUZZzzzzzzzzzz...
The first will hatch tomorrow
Watch out for foxes!
Knock! Knock! Knock!
Keep pecking at the wall!
Bzzzzz
Toe whit!!
CRACK!
Snap!
Bzzzzz
That feels good!


23 days after summer solstice, the longest day of the year
Bico, her brother Limo, and two other siblings were on the move following the father.
Toe Whit!!
The youngest flies off in the talons of a harrier.
Be careful, kids! You might face a lot of different predators.
Harrier
Fox
Peregrine
Weasel
Jaeger
Wolf
... and the scariest, the human!
While Limo lacked the radar-like enemy awareness of Bico, he made up for it in sheer physical ability, easily flying across a small bay, which seemed impossible for Bico.
She decided that she needed to work on her flying.

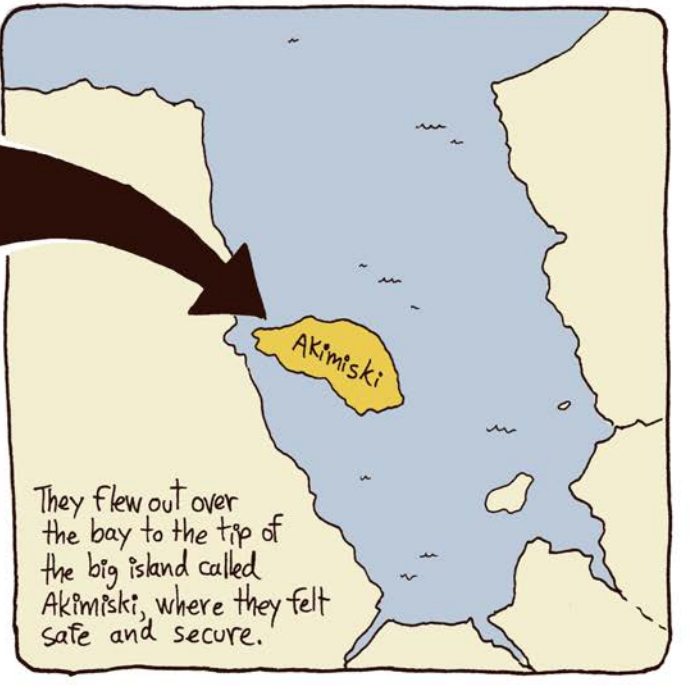

60 days after solstice
It's time to go!


After several hours of flight, Bico and Limo could see the ocean and a large island to their left. Bico watched carefully for danger.
Watch out, hunters!
Turn left!


Splash!


For out in the bay, they instinctively started feeding, finding small clams.
Pop!
Gulp!


When the tide started coming in, they lifted off, following a flock f godwits that included several parents who still wore their sharp summer colors.
Wooshh!


Akimiski
They flew out over the bay to the tip of the big island called Akimiski, where they felt safe and secure.

70 days after solstice

The last several days the flock encountered a small group of people near Longridge Point with scopes aimed at Bico and his friends.



The next day they moved all the way to Hannah Bay. Bico was feeling very heavy.







A new predator, high in the sky, forced the large flock of shorebirds to take flight.

The key to their survival on this flight over James Bay was to stick together in a tight group and find cover as soon as possible.

Team hunting by falcons is well choreographed hunting by a pair of cooperating birds, usually a couple. One chases a target bird until target bird tires to near exhaustion. The chaser would then let up, and the target bird would also let up. All the while, the other partner high in the sky, would be watching this drama unfold At the opportune moment, when the pursued bird let up, the partner would drop like a bomb for the kill.



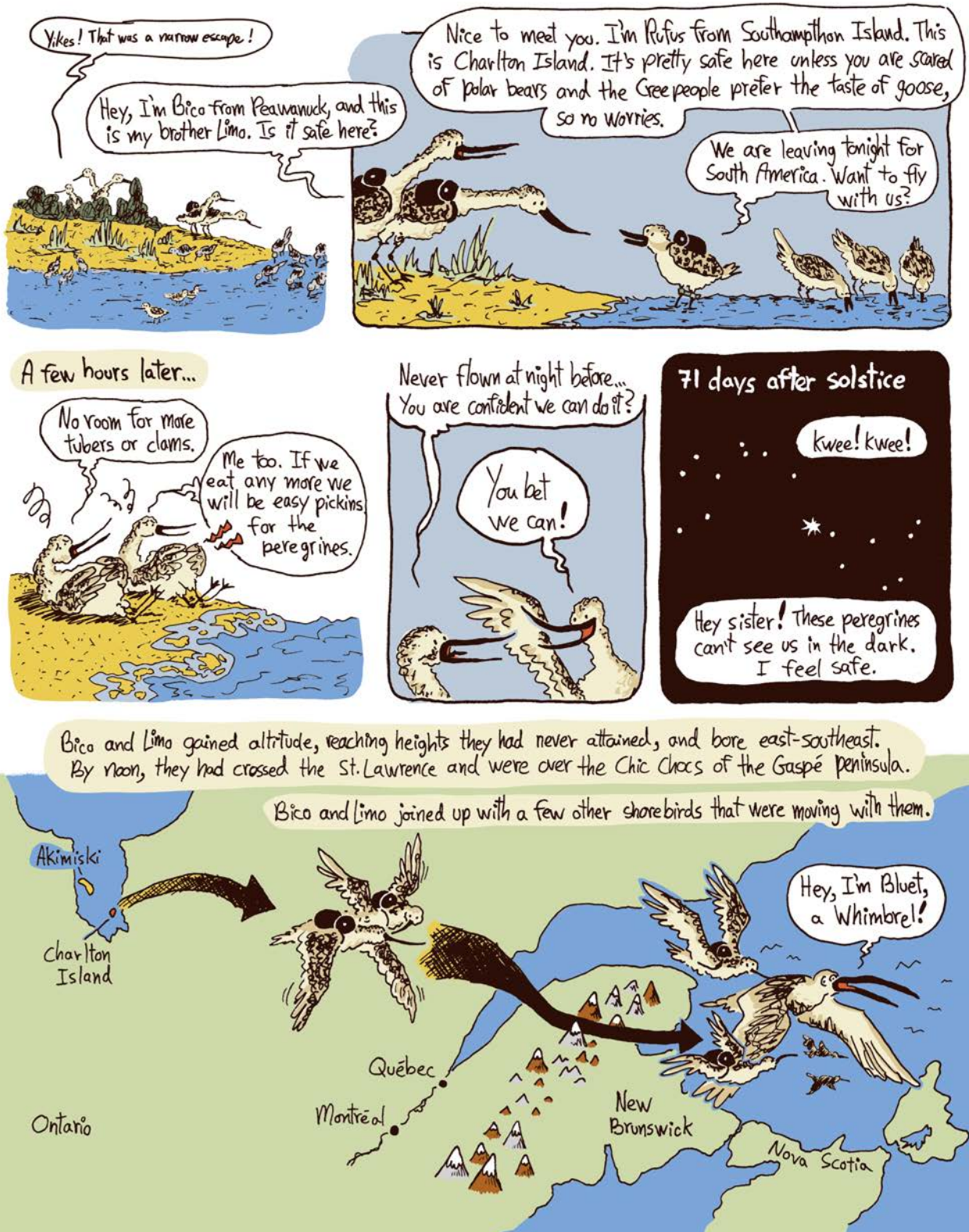
Going alone was sure death with team hunting peregrines.

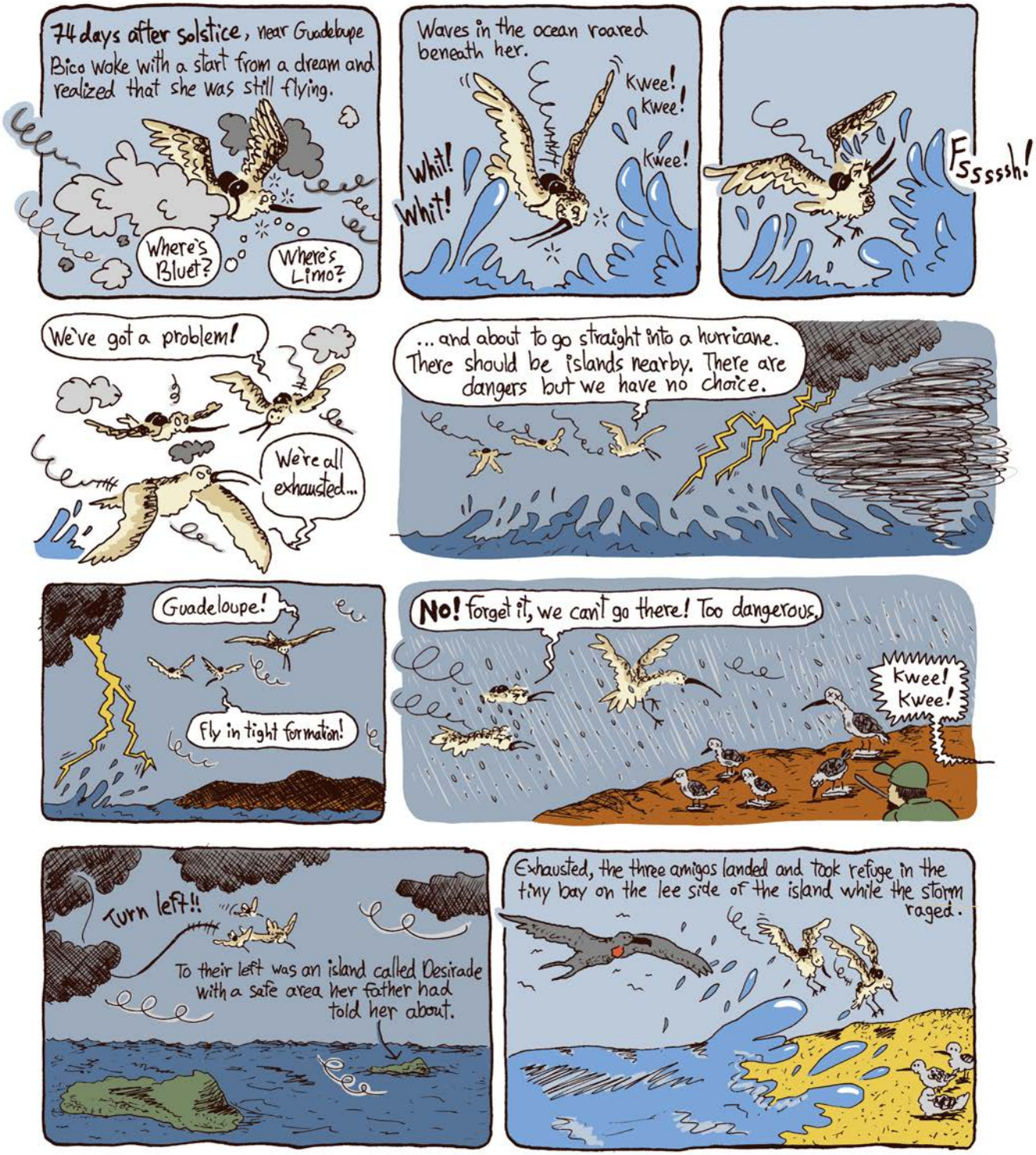




Bico and Limo, leading the way, veered east with about 200 birds, toward a large island they never had seen.




Yikes! That was a narrow escape!
Hey, I'm Bico from Peawanuck, and this is my brother Limo. Is it safe here?
Nice to meet you. I'm Rufus from Southampthon Island. This is Charlton Island. It's pretty safe here unless you are scared of polar bears and the Cree people prefer the taste of goose, so no worries.
We are leaving tonight for South America. Want to fly with us?
A few hours later...
No room for more tubers or clams.
Me too. If we eat any more we will be easy pickins for the peregrines.
Never flown at night before... You are confident we can do it?
You bet we can!
71 days after solstice
kwee! kwee!
Hey sister! These peregrines can't see us in the dark. I feel safe.
Bico and Limo gained altitude, reaching heights they had never attained, and bore east-southeast. By noon, they had crossed the St. Lawrence and were over the Chic Chocs of the Gaspé peninsula.
Bico and Limo joined up with a few other shorebirds that were moving with them.
Akimiski
Charlton Island
Québec
Montréal
Ontario
New Brunswick
Nova Scotia
Hey, I'm Bluet, a Whimbrel!


74 days after solstice, near Guadeloupe
Bico woke with a start from a dream and realized that she was still flying.
Where's Bluet?
Where's Limo?
Waves in the ocean roared beneath her.
Whit! Whit!
Kwee! Kwee! Kwee!
Fssssh!
We've got a problem!
We're all exhausted...
... and about to go straight into a hurricane. There should be islands nearby. There are dangers but we have no choice.
Guadeloupe!
Fly in tight formation!
No! forget it, we can't go there! Too dangerous.
Kwee! Kwee!
Turn left!!
To their left was an island called Desirade with a safe area her father had told her about.
Exhausted, the three amigos landed and took refuge in the tiny bay on the lee side of the island while the storm raged.

80 days after solstice

After spending a few tough days searching for food along the coast of Desirade, the trio island hopped their way southward to Barbados.

They're back!

There the group found another refuge in a marsh that Bico's father had told them about, thanks to Wayne, who had protected the marsh.

After a few days, they did another full day flight to Trinidad where they landed in another wetland known as the Nariva swamp.

Leave!

Nothing but death here!

They flew a few kilometres and found a clean beach with little food.

What was that?!

Oil spill!

We need to get to the Orinico. Let's go!

90 days after solstice, South America

Arriving on Isla Cangrejo, in the delta of Orinico River. Bico, Limo and Bluet feed on a range of delicious tropical foods from shellfish and small crabs to plant tubers.

The Orinoco River delta of Venezuela offers important stopover for the gang to recharge their batteries and make plans for the next migration phase.

After several days of feeding, Bico and Limo prepare to fly South into Amazonia.

While Bluet prepares to fly east towards the great Amazon delta and Reentrâncias Maranhenses in Brazil.

Beware of the beaches in Guyana!

Bico had heard other shorebirds talking about how dangerous they were, especially when the visibility was low. Birds could not see **wires** that were stretched across sections of the beach.

When foggy or raining, the wires were invisible, and had caused the death of many migrating shorebirds

Bong!



Bico and Limo had other plans. They would fly to the great inland sea called Amazon, crossing mountains and endless forests to get there. Bluet leaves to go east, Bico and Limo leave to fly South into Amazonia, joined by a small group of godwits.

98 days after solstice

They flew for a full 24 hours avoiding powerful thunderstorms, before passing over a large city.

That's the Amazon!!

Exhausted, the group of 20 godwits descends onto a muddy point of land on the west side of Ilha Marchantaria.

What the heck?!

BAM!

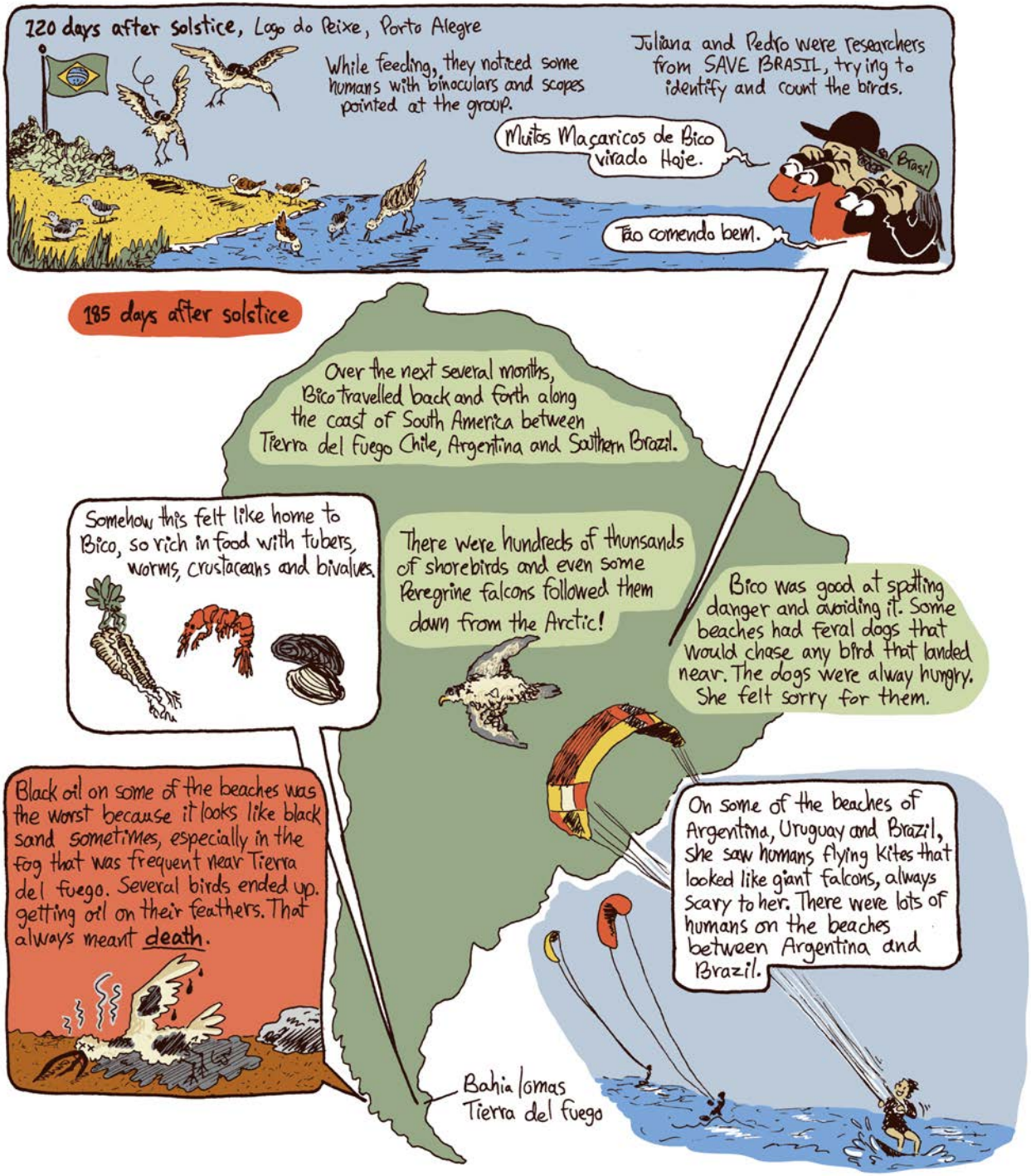
Splash!

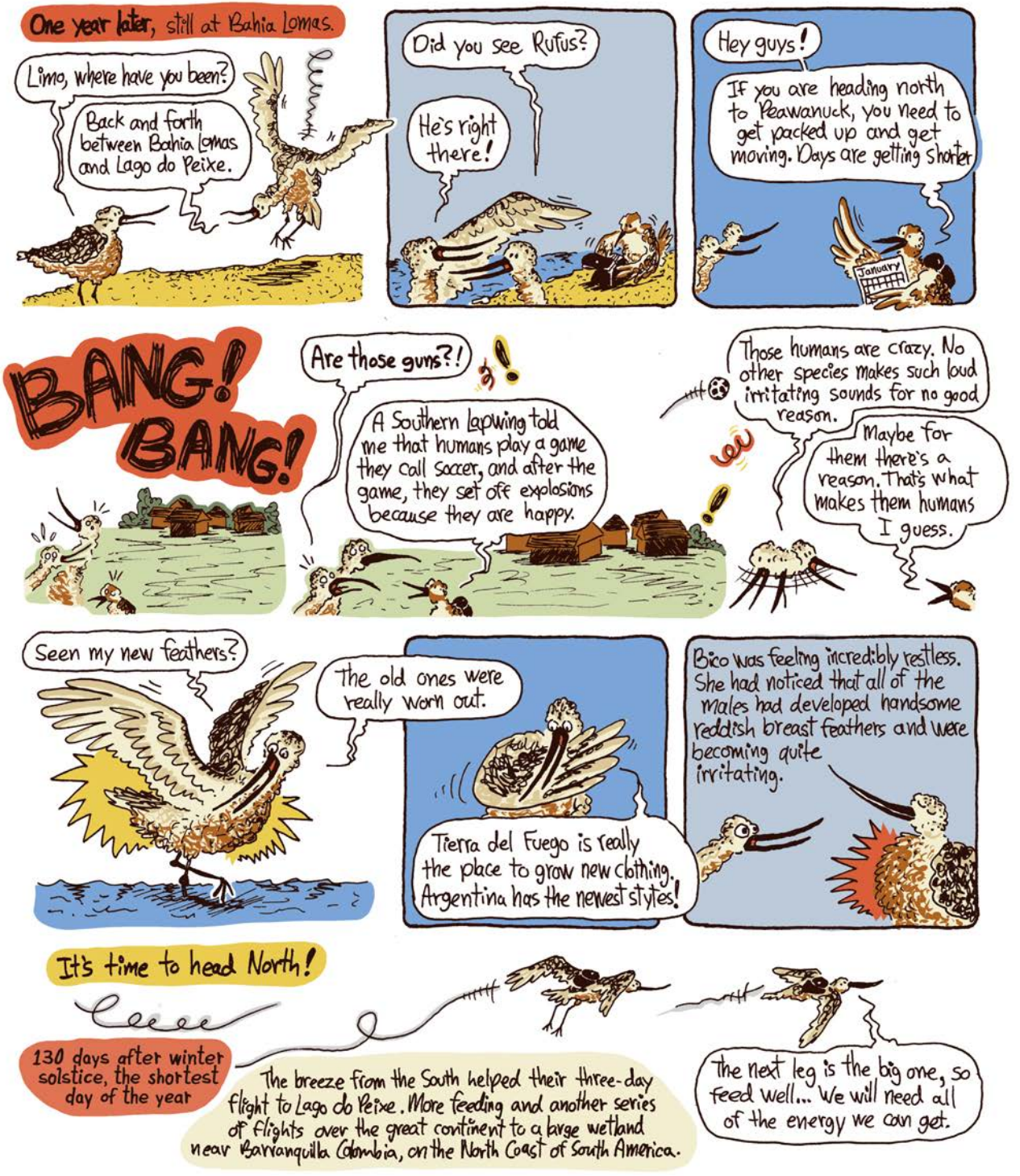
Did I just see a log...

...with eyes and teeth?!

SNAP!

GULP!


220 days after solstice, Lago do Peixe, Porto Alegre
While feeding, they noticed some humans with binoculars and scopes pointed at the group.
Juliana and Pedro were researchers from SAVE BRASIL, trying to identify and count the birds.
Muitos Maçaricos de Bico virado Hoje.
Brasil
Tão comendo bem.
185 days after solstice
Over the next several months, Bico travelled back and forth along the coast of South America between Tierra del Fuego Chile, Argentina and Southern Brazil.
Somehow this felt like home to Bico, so rich in food with tubers, worms, crustaceans and bivalves.
There were hundreds of thunsands of shorebirds and even some Peregrine falcons followed them down from the Arctic!
Bico was good at spotting danger and avoiding it. Some beaches had feral dogs that would chase any bird that landed near. The dogs were alway hungry. She felt sorry for them.
Black oil on some of the beaches was the worst because it looks like black sand sometimes, especially in the fog that was frequent near Tierra del fuego. Several birds ended up. getting oil on their feathers. That always meant death.
On some of the beaches of Argentina, Uruguay and Brazil, she saw humans flying kites that looked like giant falcons, always scary to her. There were lots of humans on the beaches between Argentina and Brazil.
Bahia lomas
Tierra del fuego


One year later, still at Bahia Lomas.
Limo, where have you been?
Back and forth between Bahia Lomas and Lago do Peixe.
Did you see Rufus?
He's right there!
Hey guys!
If you are heading north to Peawanuck, you need to get packed up and get moving. Days are getting shorter
January
BANG! BANG!
Are those guns?!
A Southern Lapwing told me that humans play a game they call Soccer, and after the game, they set off explosions because they are happy.
Those humans are crazy. No other species makes such loud irritating sounds for no good reason.
Maybe for them there's a reason. That's what makes them humans I guess.
Seen my new feathers?
The old ones were really worn out.
Tierra del Fuego is really the place to grow new clothing. Argentina has the newest styles!
Bico was feeling incredibly restless. She had noticed that all of the males had developed handsome reddish breast feathers and were becoming quite irritating.
It's time to head North!
130 days after winter solstice, the shortest day of the year
The breeze from the South helped their three-day flight to Lago do Peixe. More feeding and another series of flights over the great continent to a large wetland near Barranquilla Colombia, on the North Coast of South America.
The next leg is the big one, so feed well... We will need all of the energy we can get.

The big trip North

Flying north over parts of Central America and the the Gulf of Mexico with Bico were other Godwits, some other shorebirds and Swainson's Thrushes, which are quite chatty as they migrate north towards the vast boreal forest.

Bico could not quite understand what they were saying. She was a faster flyer than the thrushes, which they accepted with their usual grace.



Bico and his friends encountered storms over the Gulf of Mexico and were forced to find refuge along the Louisiana Coast near Marsh Island.



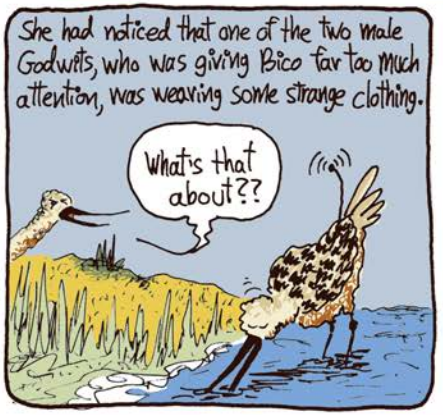
Hundreds of shorebirds were lined across the beach, heads faced into the wind, eyes closed from the blowing sand. The storm lasted several hours.



When the winds abated, Bico took to frenetic feeding on mussels, and even finding horseshoe crab eggs along a small beach.



She had noticed that one of the two male Godwits, who was giving Bico far too much attention, was wearing some strange clothing.



Ah, well, it's a long story. Did Rufus tell you what happened to him, with the humans?

No, actually, I didn't ask and he didn't tell. He's like that.



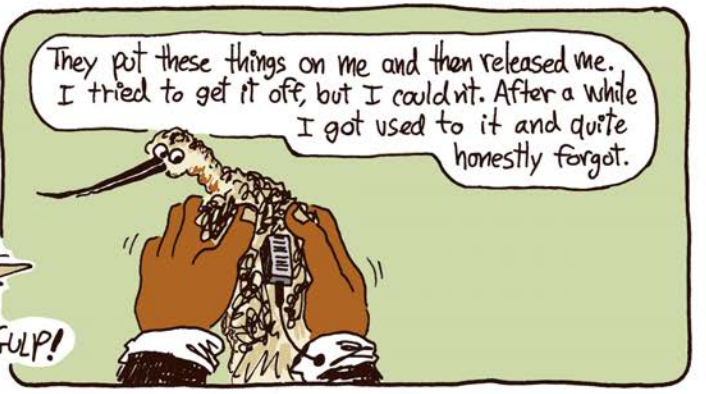
By the way, I am Camilo. I think you are amazing!



But my story? Last year during my first migration, I was feeding on a beach like this, when a giant net flew over my head and caught a bunch of us. It was those humans.



They put these things on me and then released me. I tried to get it off, but I couldn't. After a while I got used to it and quite honestly forgot.



I think that the wire thing on my back will fall off soon.

That's because you just flew 5000 kilometres without stopping you goof.

Actually you are only partially right, check this. When it falls, I'll be happy.

Poke!

Sorry, beak slipped!

170 days after winter solstice, somewhere near Winisk river.

Beside Bico is an amazing nest that is very well camouflaged. Camilo was the happiest Godwit around, as Bico had chosen him as her mate this year.

Camilo's thoughts... He would do his best to drive away enemies, protect their territory, fertilize her eggs and be a great father. The transmitter fell off his back shortly after the poke in Georgia. Maybe that was all part of the great plan of the creator.

CROAK!

"Never underestimate the Raven", her mother had taught Bico when she was only hours old. She had never forgotten and would need to teach this and other things to her chicks. With Ravens and Eagles it was all about honour, respect and avoidance.

She smiled, only as a Godwit can, and realized that a new phase in the cycle of life was about to start.

Hudsonian Godwit (HUGO)

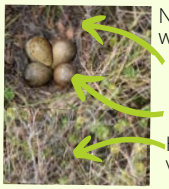
Limosa haemastica

CONSERVATION STATUS:

Worldwide (IUCN): Least Concern
In Canada (COSEWIC): Threatened
Population trend: Substantial declines

WINISK RIVER:

Country: Canada, Ontario,
Conservation Status: Provincial Park,
Homelands of the Weenusk First Nation



Nests are clustered in dry areas within wetland habitats

Nest is a depression on the ground, lined with leaves

1 clutch typically has 4 eggs

Hummocks, birch shrubs and other vegetation help hide the nest

Precocious (able to walk, and feed themselves) chicks leave the nest within as little as 1 hour of hatching!



Where did Bico's parents go?

Both parents leave the chicks and the breeding grounds within a few week's of the hatching. Scientists don't know exactly when or why.

MARSH ISLAND:

Country: USA, Louisiana
Conservation Status: Wildlife Refuge

Stopover sites are very important!

Where most of the coast was once available to migrating birds, the loss of critical wetland and coastal habitat,



is one of the biggest threats to survival. The pollution and other degradation of remaining sites means that it is very hard for migrating shorebirds to find enough food to put on up to 3% of their body weight in fat for *every day* they stop.

DÉSIRADE ISLAND:

Country: Guadeloupe
Conservation Status: North-Eastern tip of the island is a national park

Extreme weather is a *very* big threat to migrating shorebirds!

Southern migration for HUGO happens during hurricane season, so the Caribbean islands, and protected areas within them are extremely important sheltering sites.

Did you know:
Some birds have been known to skirt all the way around extreme weather systems...

... some flying almost all the way to Africa on the trade winds to do so!

deew doo

AMAZON BASIN:

Country: Brazil
Conservation Status: a variety of protected areas totaling approximately 47.2% of the basin.*

Shorebirds love all kinds of wetlands... the largest river in the world provides tons of opportunities to rest and refuel with new interesting foods, not only in the bountiful Amazon estuary, but also on freshwater wetlands such as mud flats and marshes found throughout the watershed. Shorebirds, local biodiversity and Indigenous Peoples are threatened here by resource extraction, which is often illegal.

BAHÍA LOMAS:

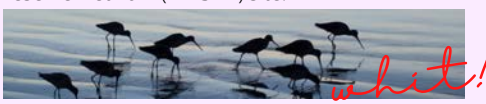
Country: Chile
Conservation Status: WHSRN site

There are many kinds of Protected Areas that aim to:

- Protect and restore critical habitats, and
- Respect inherent rights of Indigenous Peoples,

Among other conservation goals.

Bahía Lomas is a Western Hemisphere Shorebird Reserve Network (WHSRN) site.



whit!

These sites are a special kind of protected area developed specifically for site based shorebird conservation. There are currently 114 sites across the Americas.

LEGEND:

★ Locations Bico passes through on her migration

Breeding
Wintering

Migration
Northbound
Southbound

NOTE: the routes, stops and timing used in this infographic and story represent an approximation of the routes traveled by Hudsonian Godwits. Each bird's path is unique - see next page for an example of real tracking data!

MIGRATION MARATHON:
REAL TRACKING DATA ON THE SOUTHERN MIGRATION OF TWO HUDSONIAN GODWITS

ID 11328368:

About the bird:
Sex: Female

About the Migration:
Duration: July-February
Maximum speed: 43km/hr

Notable:
- She spent 25 months in South America before returning north.
- The longest distance without stopping: ~4000km taking 4 days

ID 11328096:

About the Bird:
Sex: Male

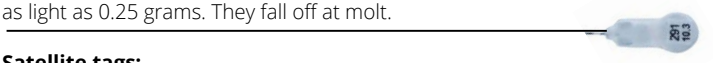
About the Migration:
Duration: July-November
Maximum speed: 65 km/hr

Notable:
- The longest distance without stopping: >6000km, taking 5 days
- Signal was lost as he moved south from Samborombon Bay (a WHSRN site)



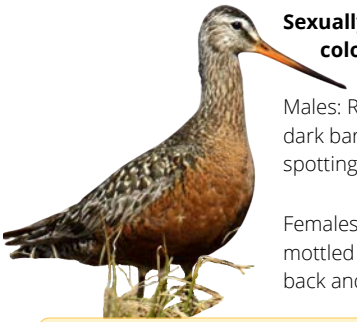
ID & TRACKING BIRDS AROUND THE WORLD:

Radiotransmitters:
These pearl sized radio tags are glued directly to the back of the bird, they are as light as 0.25 grams. They fall off at molt.



Satellite tags:
Useable on slightly larger birds, these tags send and receive satellite signals as the bird migrates. They are attached with a backpack that eventually falls off.

Leg bands:
Colorful bands, tags with information or geocoders are attached to the bird's leg in a specific pattern so that when scientists see that bird in future, they can know about the bird, whether it has been studied before and where it has been recorded.



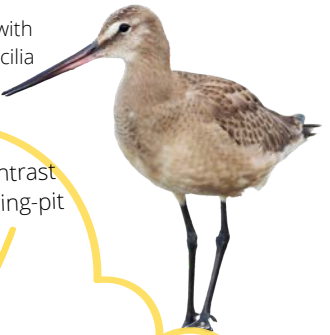
Sexually Dimorphic colouring:

Males: Rufous (rusty red) breast, dark barring and variable pale spotting

Females: Paler overall, more mottled brown colouring on back and belly

Non-breeding plumage:
For both is pale, grey brown with a white belly and white supercilia (eyebrow)





Where does the colour come from?:

Genetics determine the colour pattern, however, the execution of that pattern relies on having certain compounds in their system. South America has a high diversity of shorebird foods, rich in carotenoids and melanins so that when the HUGO are ready to molt, these compounds are available and ready to add colour to the feathers.

What can you do to help Bico and other shorebirds?

- Celebrate World Migratory Bird day! Go outside and count how many birds you can see, or look up local nature conservation groups as they often host events.
- Visit a WHSRN site or other conserved area to learn more about these amazing birds. Remember to share what you learn!
- If you see shorebirds resting or feeding, keep your distance and make sure any pets are leashed.
- Participate in a garbage clean-up near you. This will help keep beaches and waters clean and reduce bird mortality relating to plastic pollution.

REFERENCES:

Though a fictitious story, the life history information is based on the Hudsonian Godwit account in *Birds of the World*:, Walker, B. M., N. R. Senner, C. S. Elphick, and J. Klima (2020). Hudsonian Godwit (Limosa haemastica), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.hudgod.01 and conversations with people who know the species well.

Tracking data contributed by Jeannie Rausch, Canadian Wildlife Service, Environment and Climate Change Canada and analyzed by the Shorebird Science and Conservation Collective, Smithsonian Migratory Bird Center.
Full Citation: Smith, F.M., B.D., Watts and J.Raush. 2021. Tracking hudsonian godwit in Canada. The center for Conservation Biology, College of William and Mary and the Virginia Commonwealth University, Williamsburg, VA USA.

Protected Areas data received from: UNEP-WCMC and IUCN (2022), Protected Planet: The world Database on Protected Areas (WDPA) [On-line], [March 2022], Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net.

COSEWIC Status report from 2019 on HUGO in the Canadian context and the migration map used in the infographic : COSEWIC. 2019.
COSEWIC assessment and status report on the Hudsonian Godwit Limosa haemastica in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 50 pp. (https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html).

*Government of Brazil Forestry Services report (2020) - https://snif.florestal.gov.br/pt-br/conservacao-das-florestass/225-tabelas-e-graficos?tipo=tableau&modal=1



Questions for the reader

1. What were the threats to Bico's survival that she overcame during her travels?

2. List three types of food she likes?

3. What are three things that frightened her?

4. What was her brother Limo really good at?

5. How can migrating shorebirds survive storms on their migration route?

6. Why is an oil spill in the ocean so dangerous to shorebirds?

7. How much time did Bico spend in South America?

8. What type of bird is Bluet?

9. How do the male Godwits change on their migrations north to their breeding grounds.

10. What are some of the animals that Bico encountered in the Amazon basin?



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