



coloring
book



Polina the Polar Bear

sat on an ice berg in the Arctic Ocean, north of Alaska. Polina was waiting for her mother, Bearnice, to return with some tasty seal fat for lunch. Bearnice was hunting, waiting for seals to come up for air through holes in the ice, the same way Polar Bears have hunted in the winter for centuries. Except for one big difference.

A lot more of the ice had melted last summer, and this winter it hadn't refrozen as usual. A combination of warmer weather and changes in water and air currents was making the ocean warmer than anyone could remember, and Bearnice had to swim farther every day to find a good hunting spot.

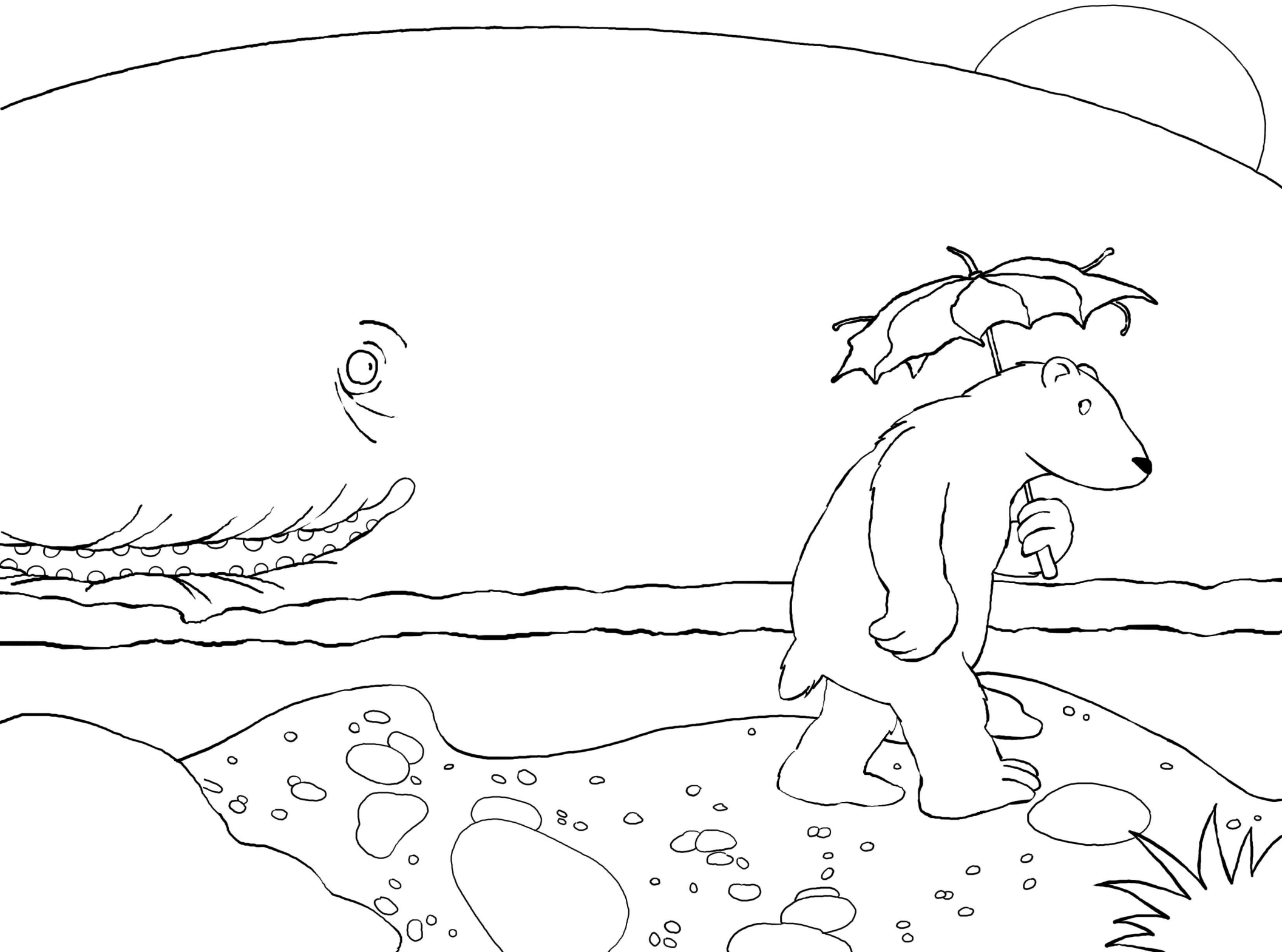
As Polina waited for her mother to bring food back to her ice berg, the ice shrank bit by bit until she was sitting on very thin ice. And one afternoon, it cracked.



Splash!

The water was cold.

Her fat body helped keep her afloat, but the ocean current was carrying Polina southward away from the ice, into open water. She tried swimming against the current, but it was too strong, so she rolled over onto her back and just floated. She drifted and drifted in the current, until she washed up on a rocky beach.



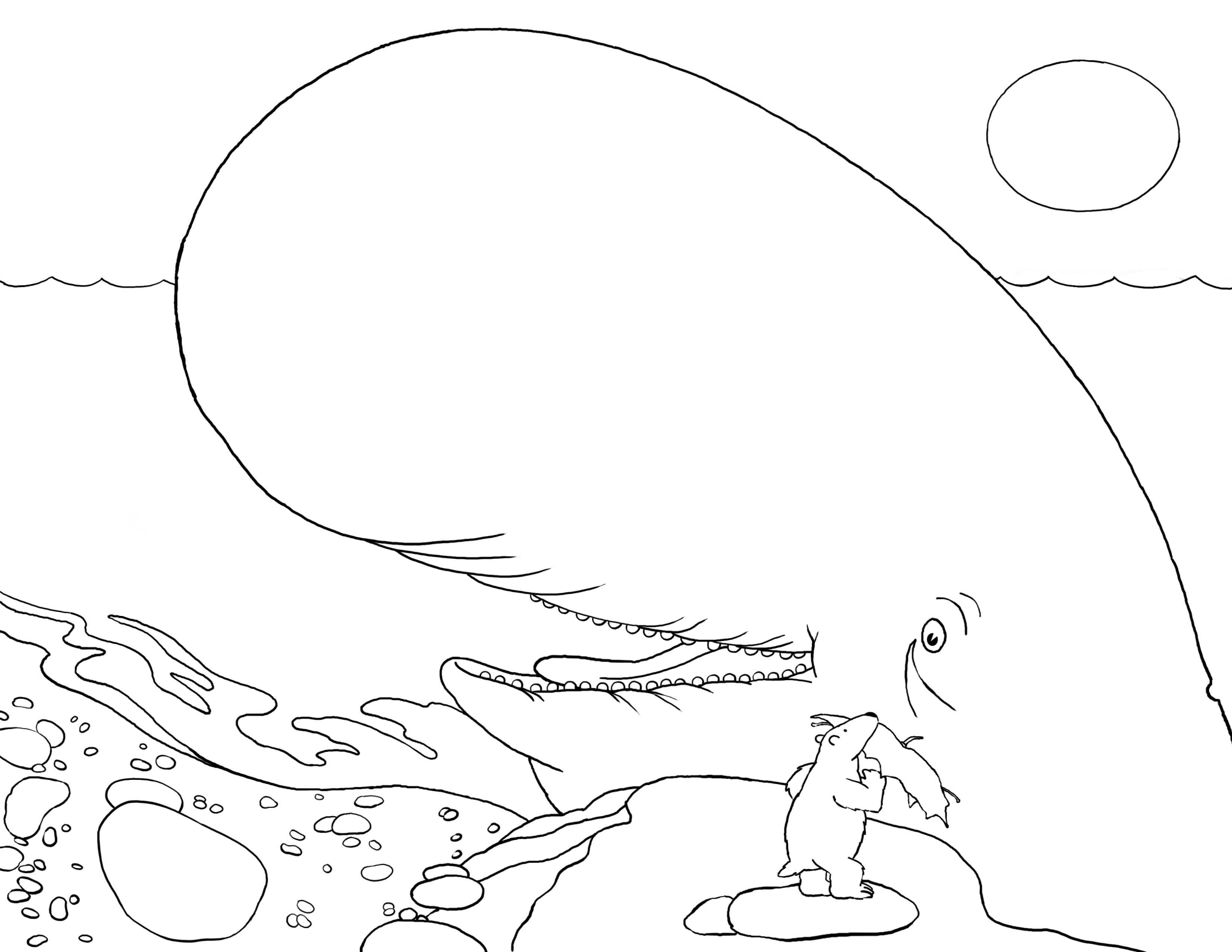
As Polina wandered up the beach, the furry white cub heard a deep voice coming from the direction of the sea.

“Hellooo little bear,”

it said, welcoming her. Polina had never heard such a deep voice. She lifted her tired head to look out over the water, and was surprised that the voice seemed to come from a dark ice berg just offshore.

No, wait! It had a huge eyeball that was looking directly at her. It wasn't an ice berg — it was the largest whale Polina had ever seen.

It was also the first whale that had ever spoken to her.



"They call me Farswimmer,"

said the whale, "because I travel all over the world, having adventures and learning new things. What brings you here, Polar Bear?"

Farswimmer was very old, and he had seen many changes in his years of exploring the oceans. He certainly knew more about the world than most polar bears. To help him remember, he wrote songs about the places he'd visited and the things he'd seen, and sang them to himself as he swam.



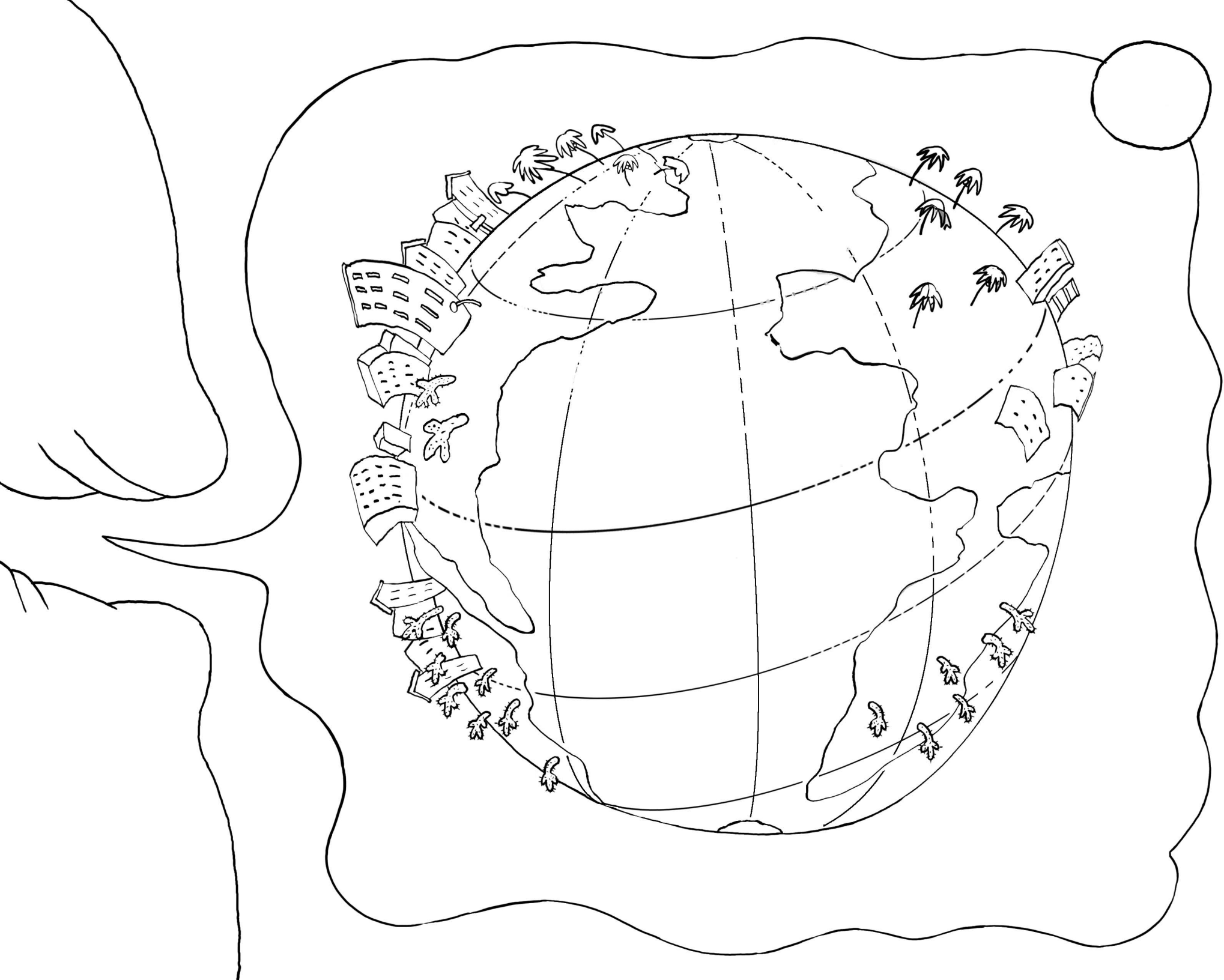
Polina was anxious to find out what was happening.

She asked him to sing some of the songs to her. He started a happy song about sunny beaches in Hawaii, but it was so loud it made Polina's ears hurt.

"Um...can you please change your song into nice, quiet words?"

And can you please explain what's happening to the sea ice?"

she asked.



So he told her about the

Earth warming

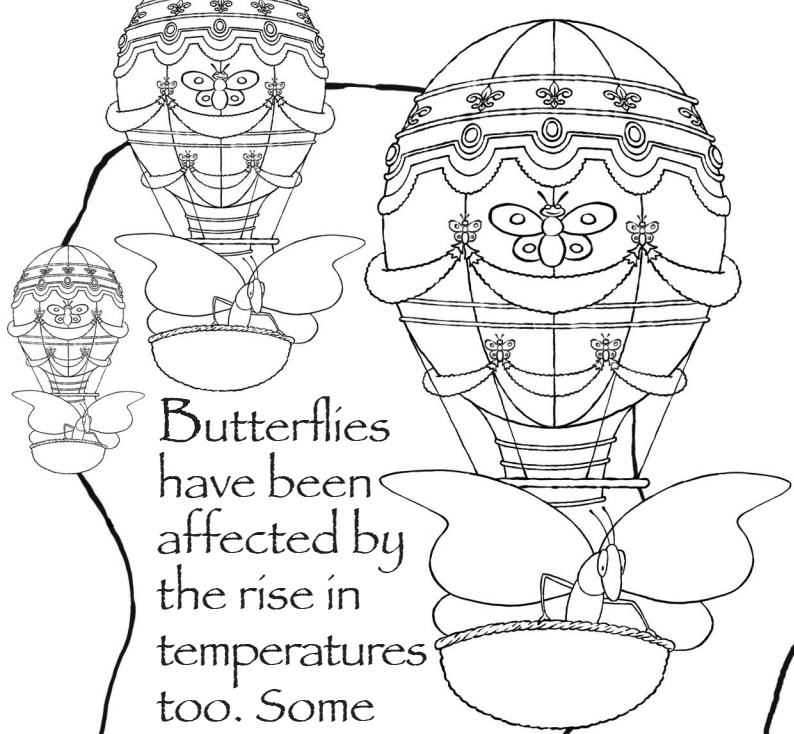
up faster than any of the

whales could remember,

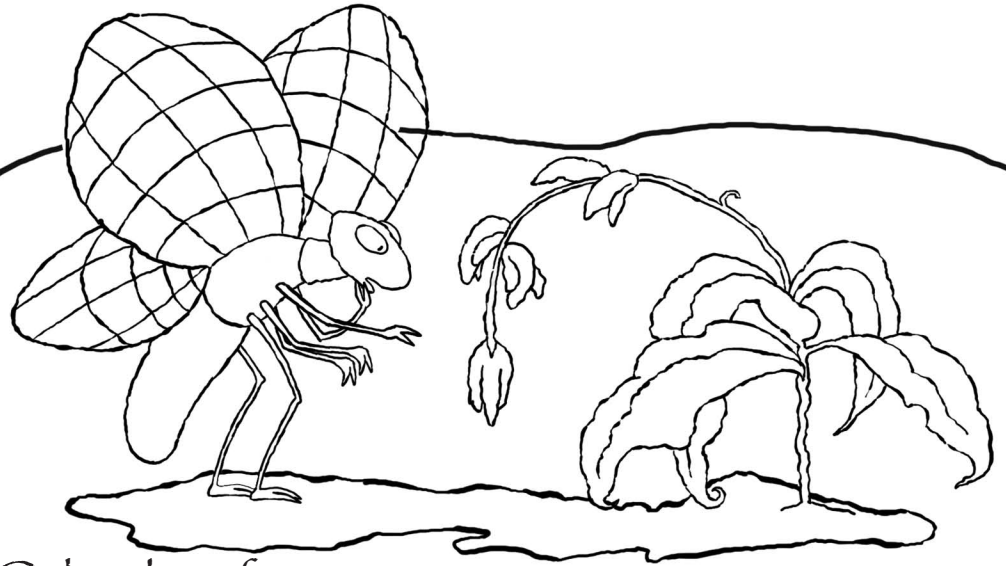
even faster than in any of

the old songs all whales

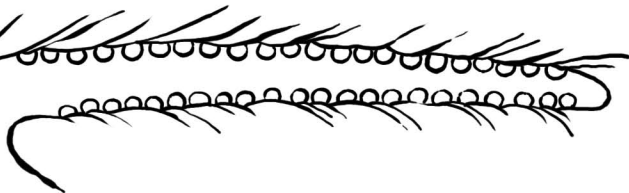
learn as youngsters.



Butterflies have been affected by the rise in temperatures too. Some migratory butterflies have expanded their habitat zones by 20 to 150 miles.



Other less fortunate non-migratory species like the Checkerspot have watched as their food sources dry up and die as the climate gets hotter.



He talked about meeting a

butterfly who told him that

even they are having problems with

climate change...



He spoke about the

damage to

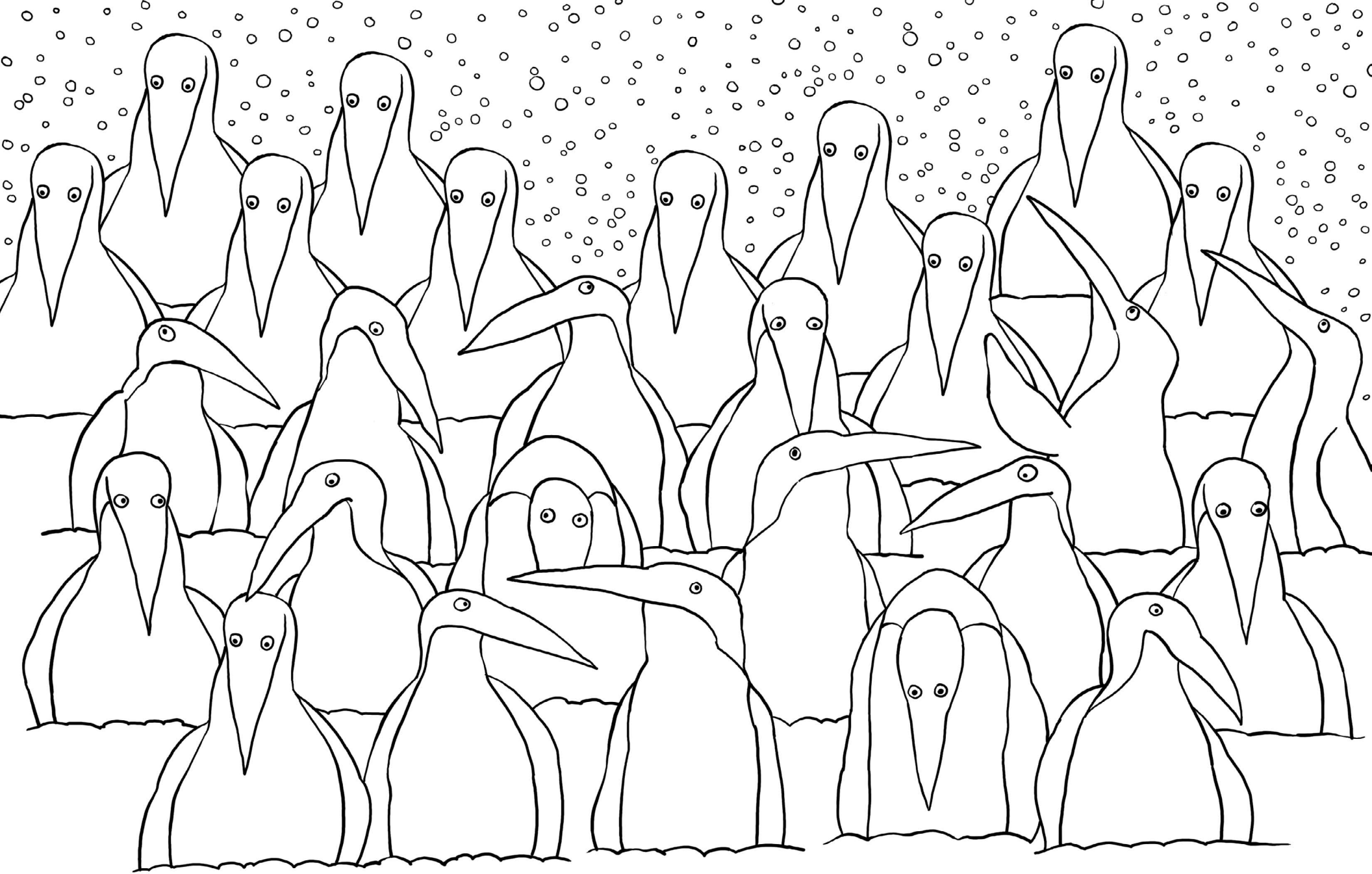
forests because bark

beetles can now have a new

generation in one year instead

of two, causing a beetle

population explosion.



Farswimmer told a story about

Adelie **Penguins** on the

Antarctic Peninsula's Biscoe

Island; they need bare ground for

nesting, and warming temperatures

have made it snow too much to find

good places to nest.



Farswimmer told Polina about

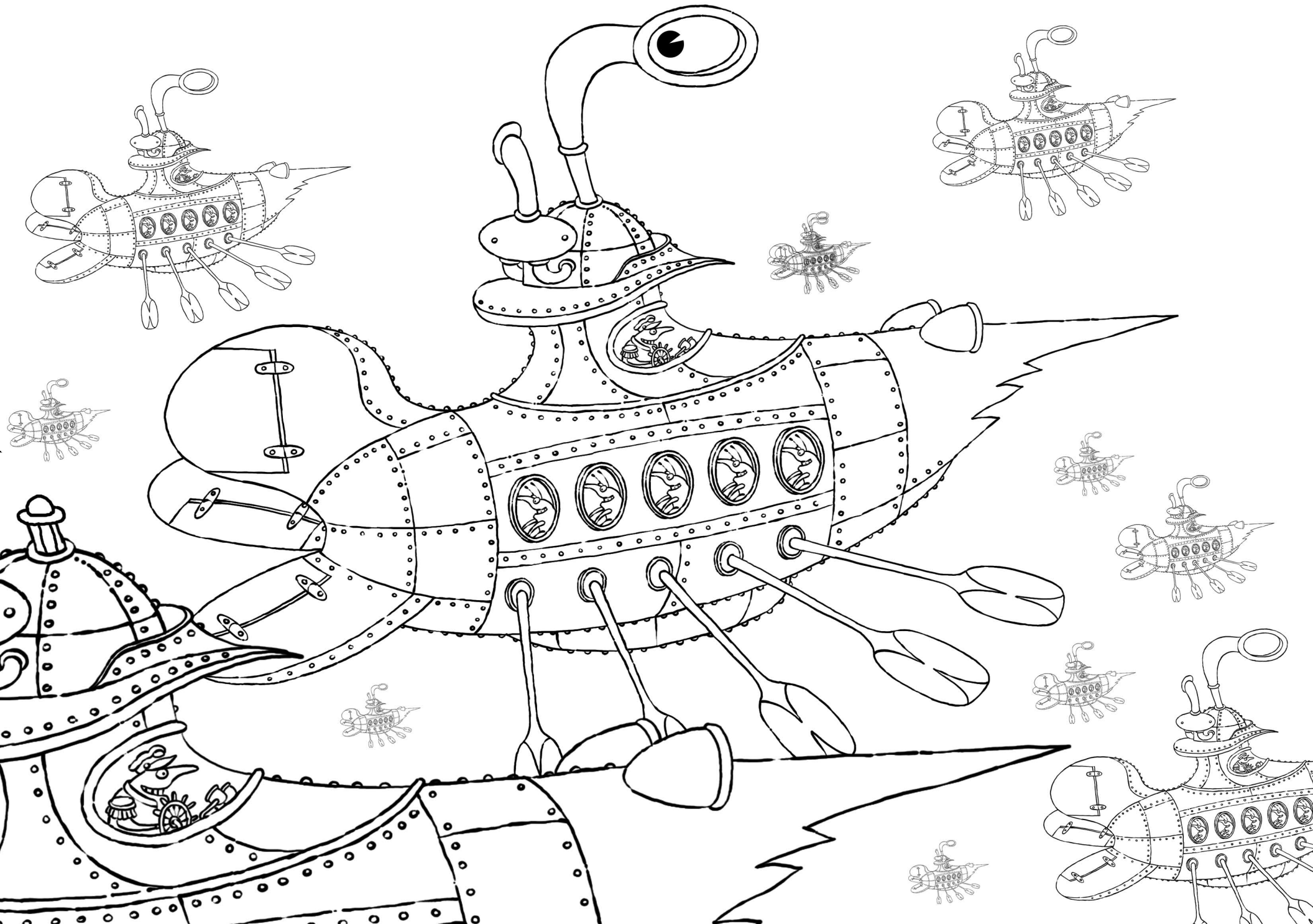
Polar Bears that have

been searching for new places to live

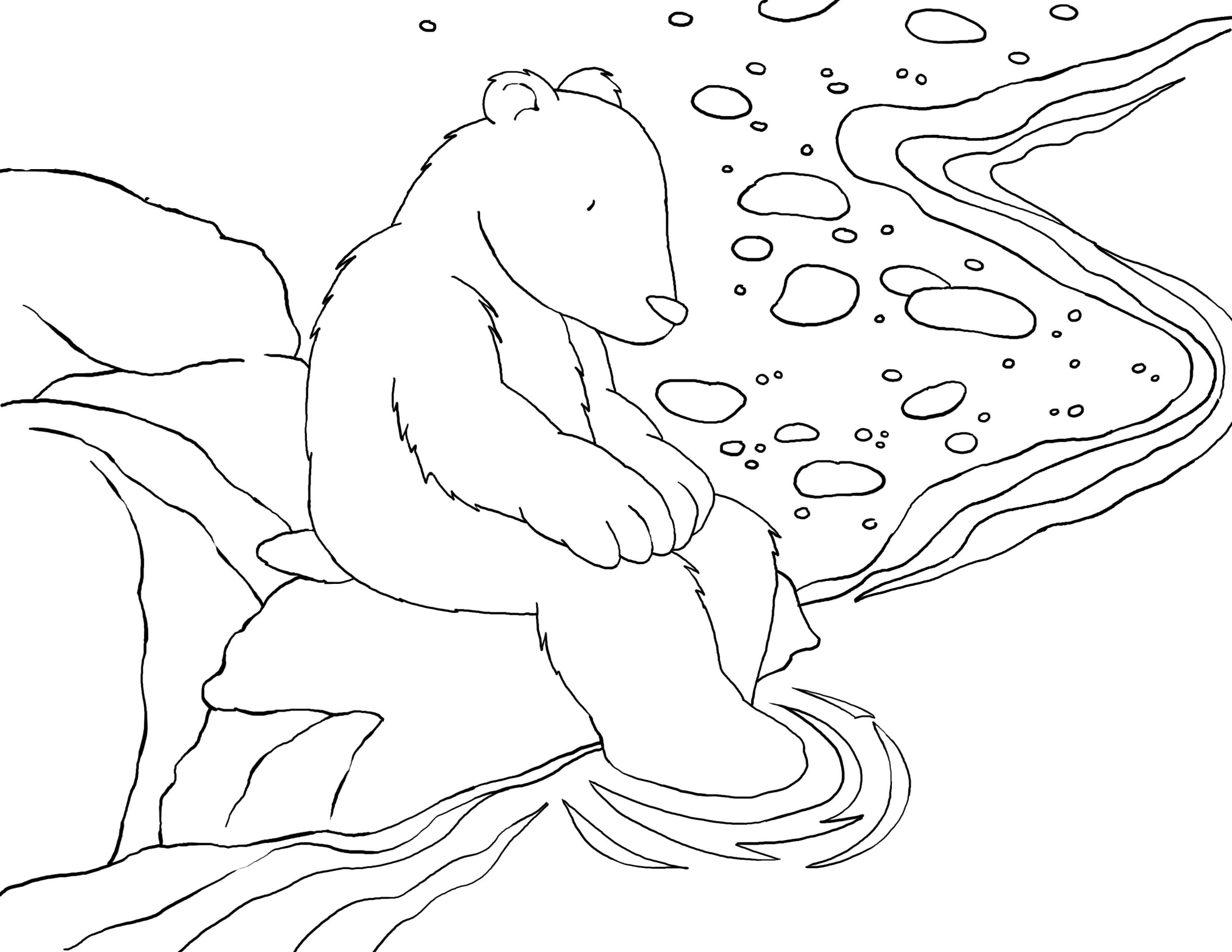
in the deep artic. The area there is

similar to their old one before the

climate changed.



Krill, a very, very, small shrimp like animal, live under the sea ice that is melting away rapidly. The krill are moving away and they are becoming harder to find. They are an important food source for a lot of sea life. A single whale will eat hundreds of thousands in a day. Walrus, seals, and polar bears are leaving their pups on unstable ice bergs, and going further out to sea in search of food. Sometimes they go so far that they get lost.



It seemed like the warming climate was

upsetting the natural balance

all over, faster than many plants and animals could adapt to their new conditions.

Polina listened intently. The world is such a big place, full of creatures she never dreamed existed. And some of them were having problems as bad as hers. Farswimmer's songs were very interesting, but they were making Polina sad.



Polina started to say something but her voice cracked.

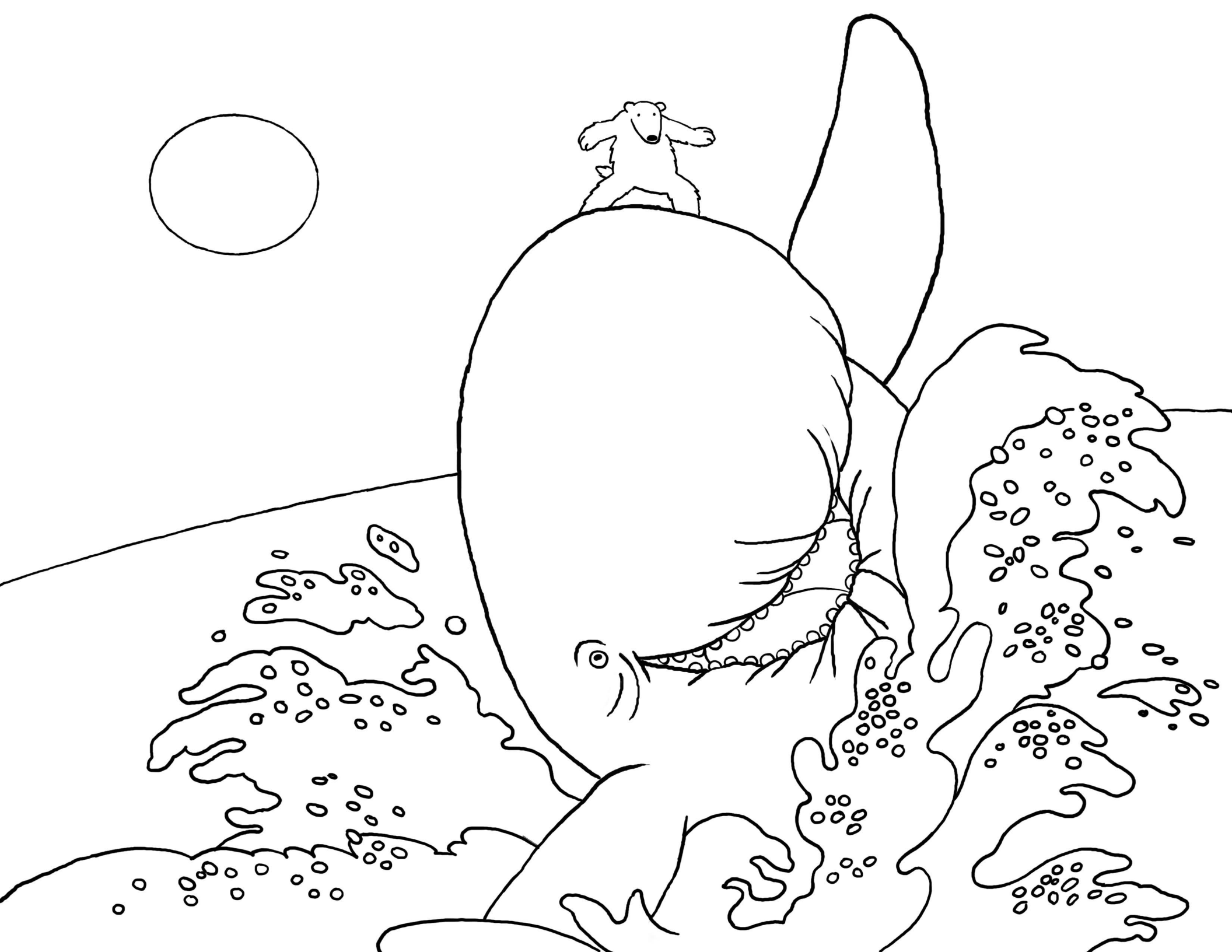
Farswimmer seemed like a nice whale, but Polina

remembered Bearnice, her mother, and how she hadn't

come back from hunting.

Farswimmer blew a tall spout

to distract Polina and stop her from crying.



When Polina told the whale her own story, he said,

"I'm headed north anyway.

You could ride on my back,

and we can look for your mother. Are you ready for another adventure?"

The next morning, Farswimmer and Polina charted their course and took

off. Polina rode Farswimmer's back and sometimes floated behind him,

holding his tail. She also stood on his back and pretended she was surfing.

It was a blast.

Some English birds have been breeding 9 days earlier than they did 50 years ago.

Unfortunately, their babies have been hatching before the bugs they usually eat hatch. This makes food very hard or sometimes impossible to find.



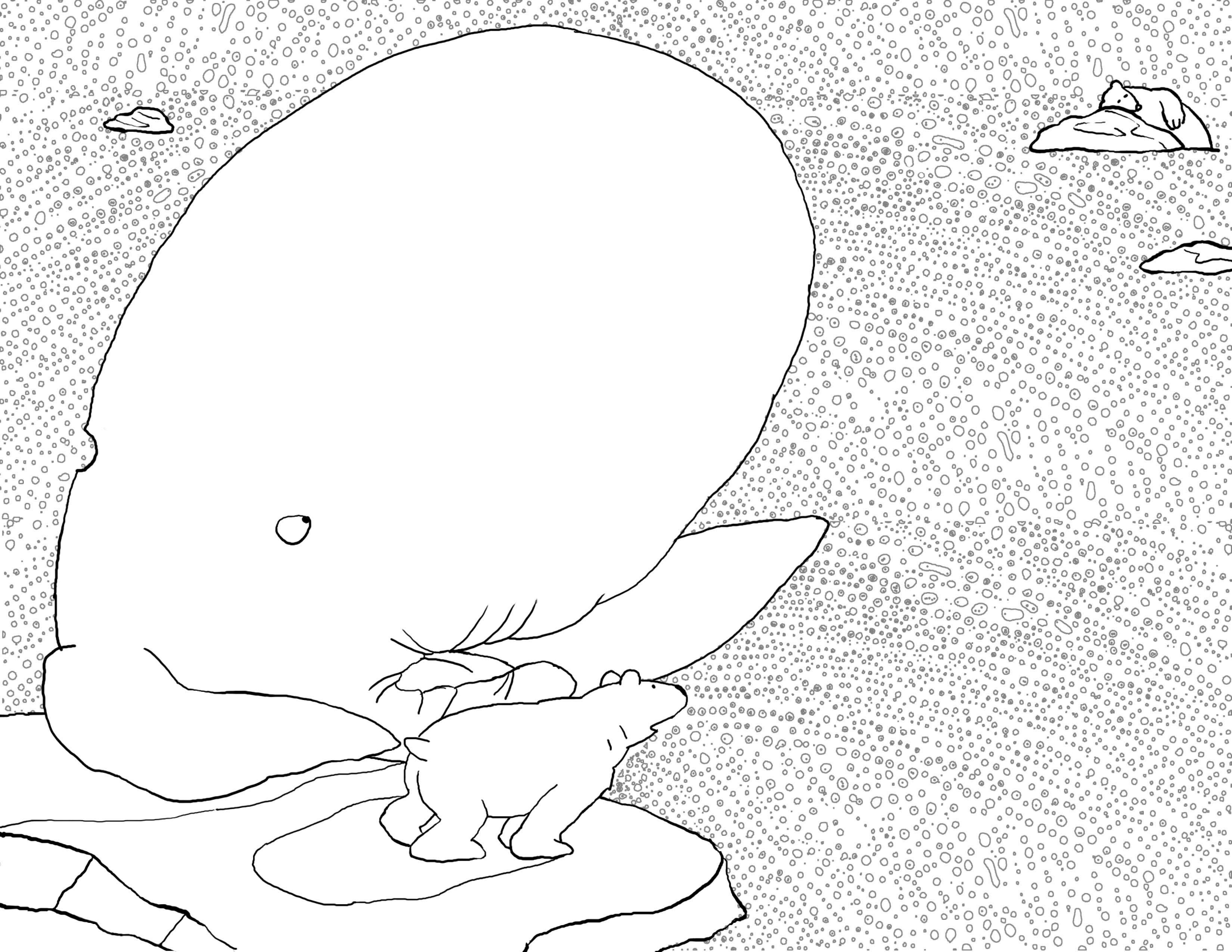
In North America, swallows start their migration 12 days earlier than they did 25 years ago.



Wherever Farswimmer swam,
he noticed how the changing climate
had affected the world, and as they
swam through the night,

he told tales

of what he had seen and heard...



They took a break on an ice berg, not far from where Polina had fallen into the sea. They saw something in the distance that startled them. It looked like another ice berg, but just to be sure, Farswimmer left Polina on the ice and swam to the floating object.

It wasn't an object. It was an animal. Farswimmer used his fat nose to push the unconscious form to Polina's icy raft. When he rolled it over,

Polina saw a familiar face.



"Mommy," she yelled.

Bearnice was very tired, but the
sound of her cub's voice woke
her up. She opened her arms and
the two embraced each other in
a big bear hug.

The End



"The Perils of Polina"

created by USGS Kids — U.S. Geological Survey
and is in the public domain and can be freely copied and distributed
Visit us online at: education.usgs.gov