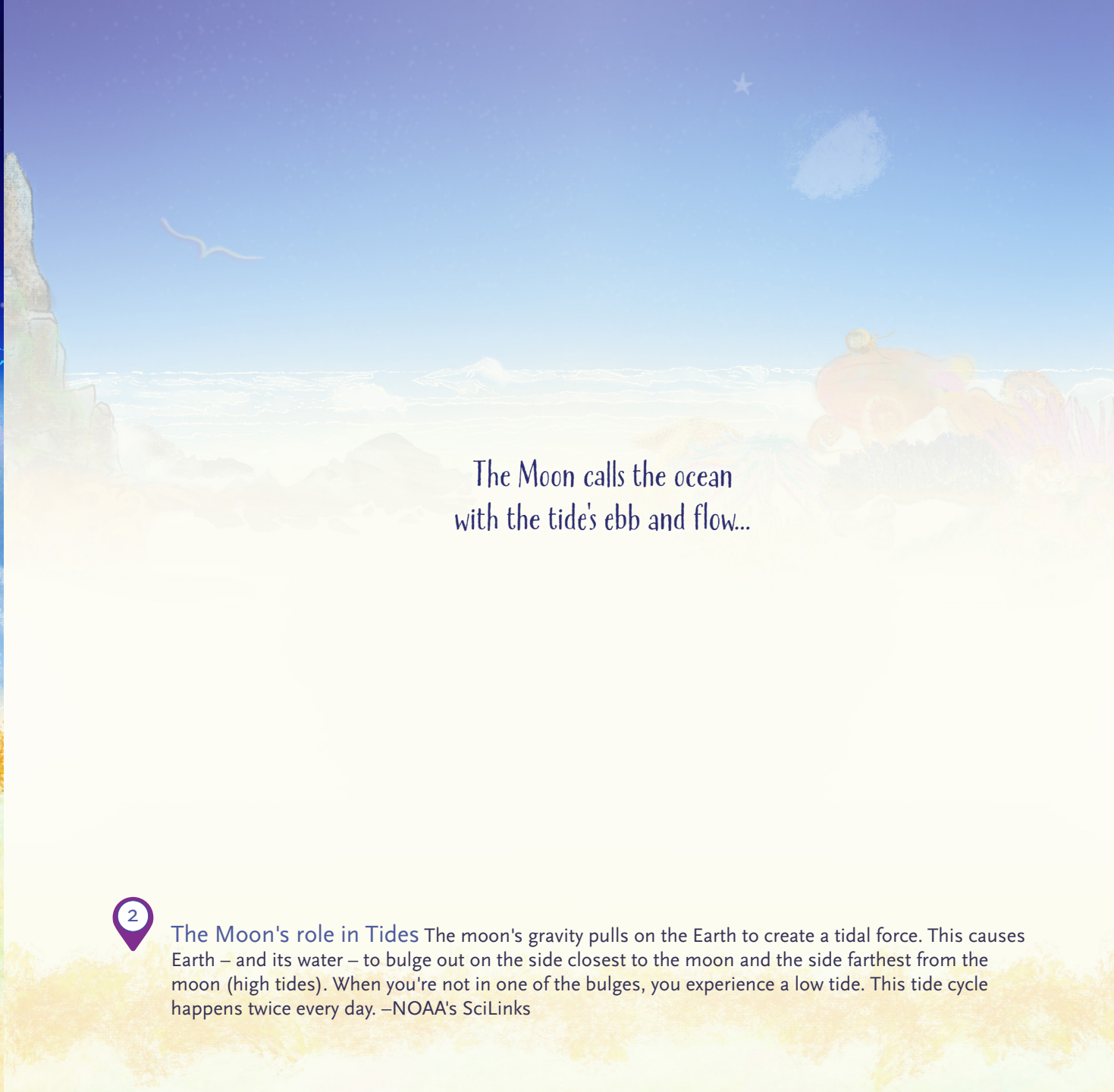
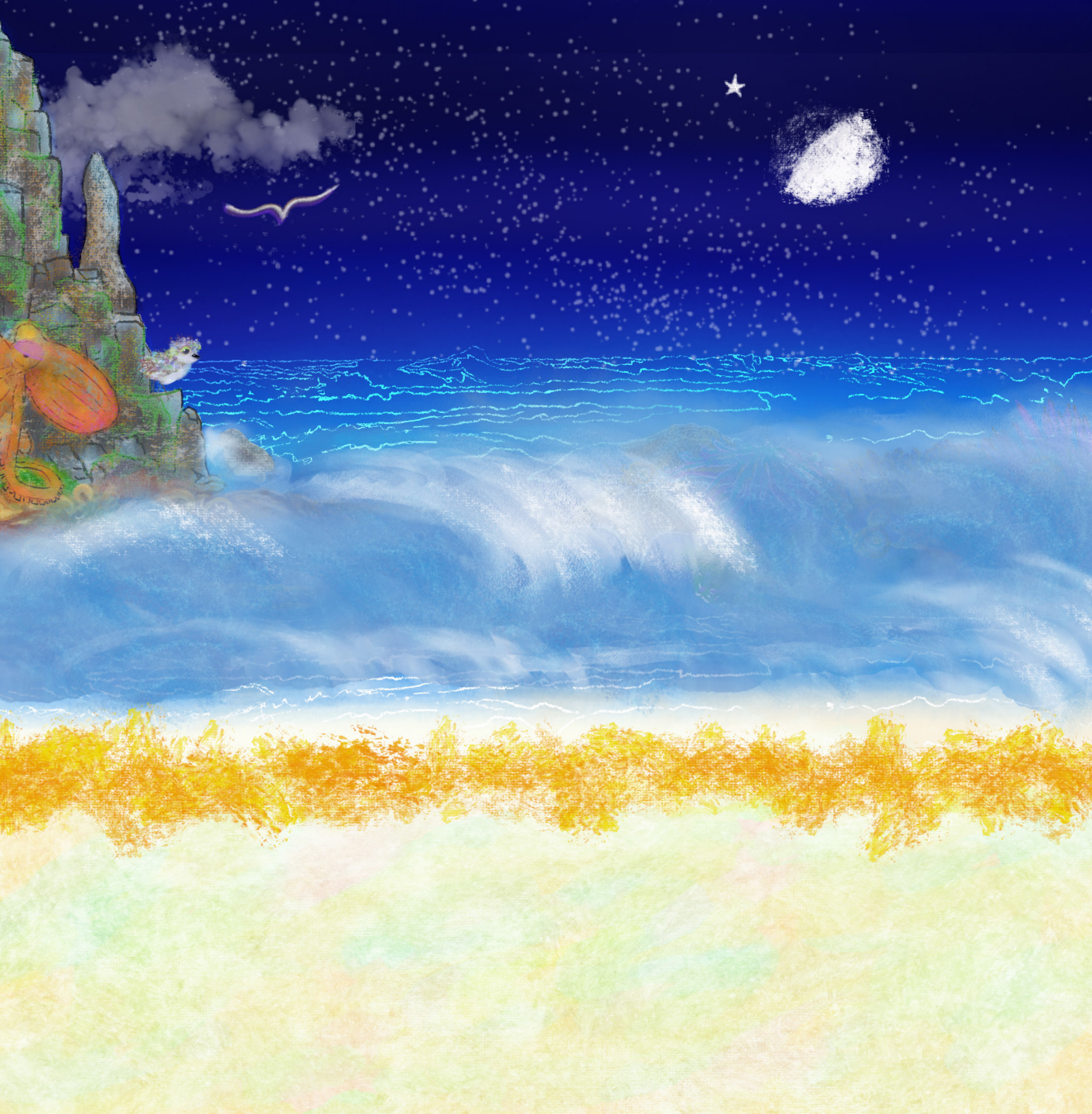


The tide flows in  
at the edge of the sand.

The tide ebbs away  
where ocean meets land.



**Tidal Currents** **Flood current** occurs as the sea level is rising towards high tide and water is *flowing* towards the shore. **Ebb current** occurs as the sea level is dropping towards low tide and water is flowing away from the shore. –Ducksters



The Moon calls the ocean  
with the tide's ebb and flow...

2

The Moon's role in Tides The moon's gravity pulls on the Earth to create a tidal force. This causes Earth – and its water – to bulge out on the side closest to the moon and the side farthest from the moon (high tides). When you're not in one of the bulges, you experience a low tide. This tide cycle happens twice every day. –NOAA's SciLinks



...revealing its creatures  
Oh, what a show!

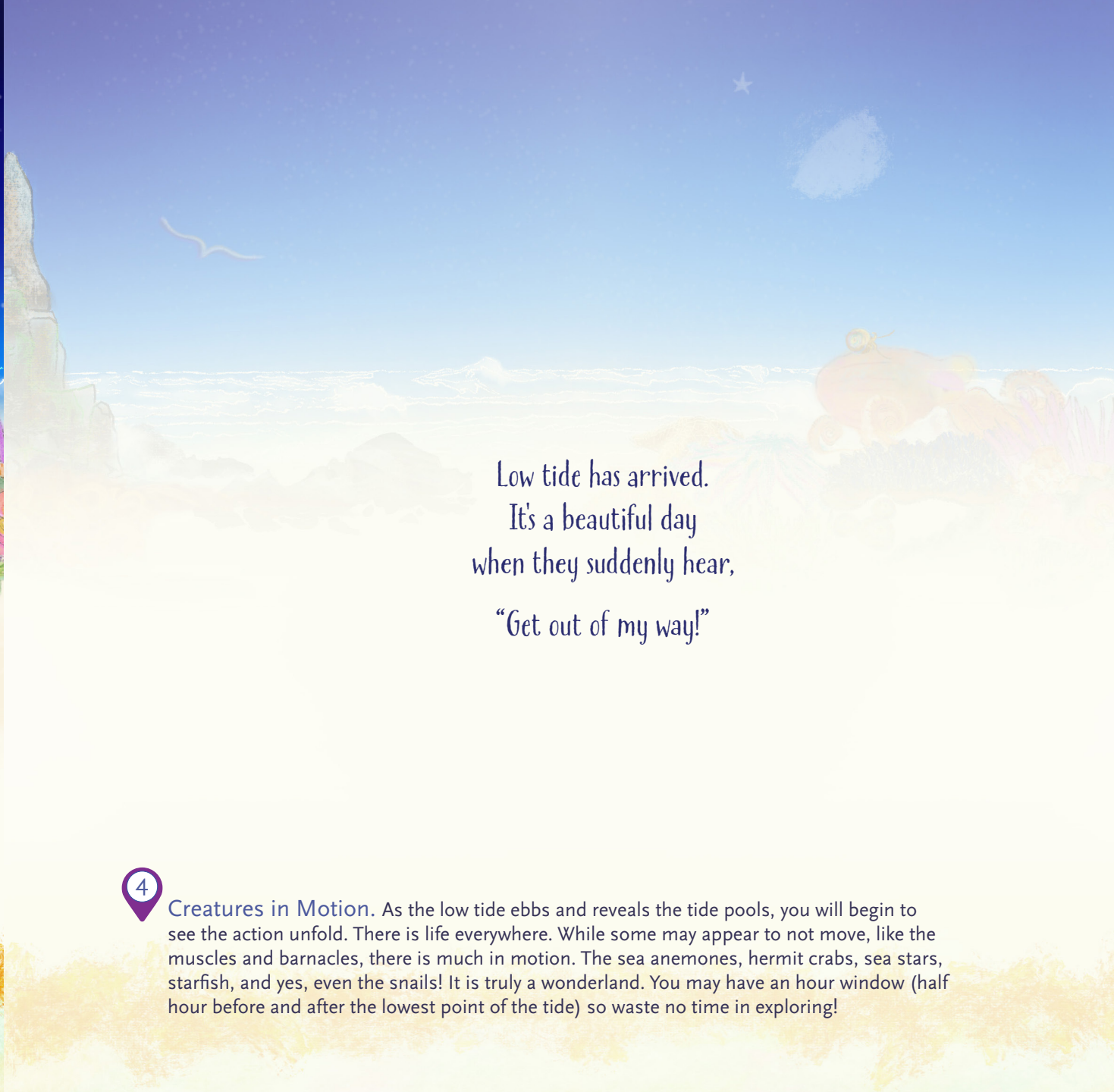
Hidden creatures come out  
when the sea's at low tide,  
Sea life greets the air  
when the sand is so wide.

3

**Tidal Pools** Marine ecosystems that thrive in what is known as the *intertidal zone*—the area between high and low tide. Because the area is alternately covered and uncovered by the ocean throughout the day, plants and animals must be able to survive both underwater and out in the air and sunlight. They must also be able to withstand crashing waves. —National Geographic



Starfish stretch out their arms.  
Sea anemones wiggle.  
Hermit crabs scurry.  
All so happy, they giggle!



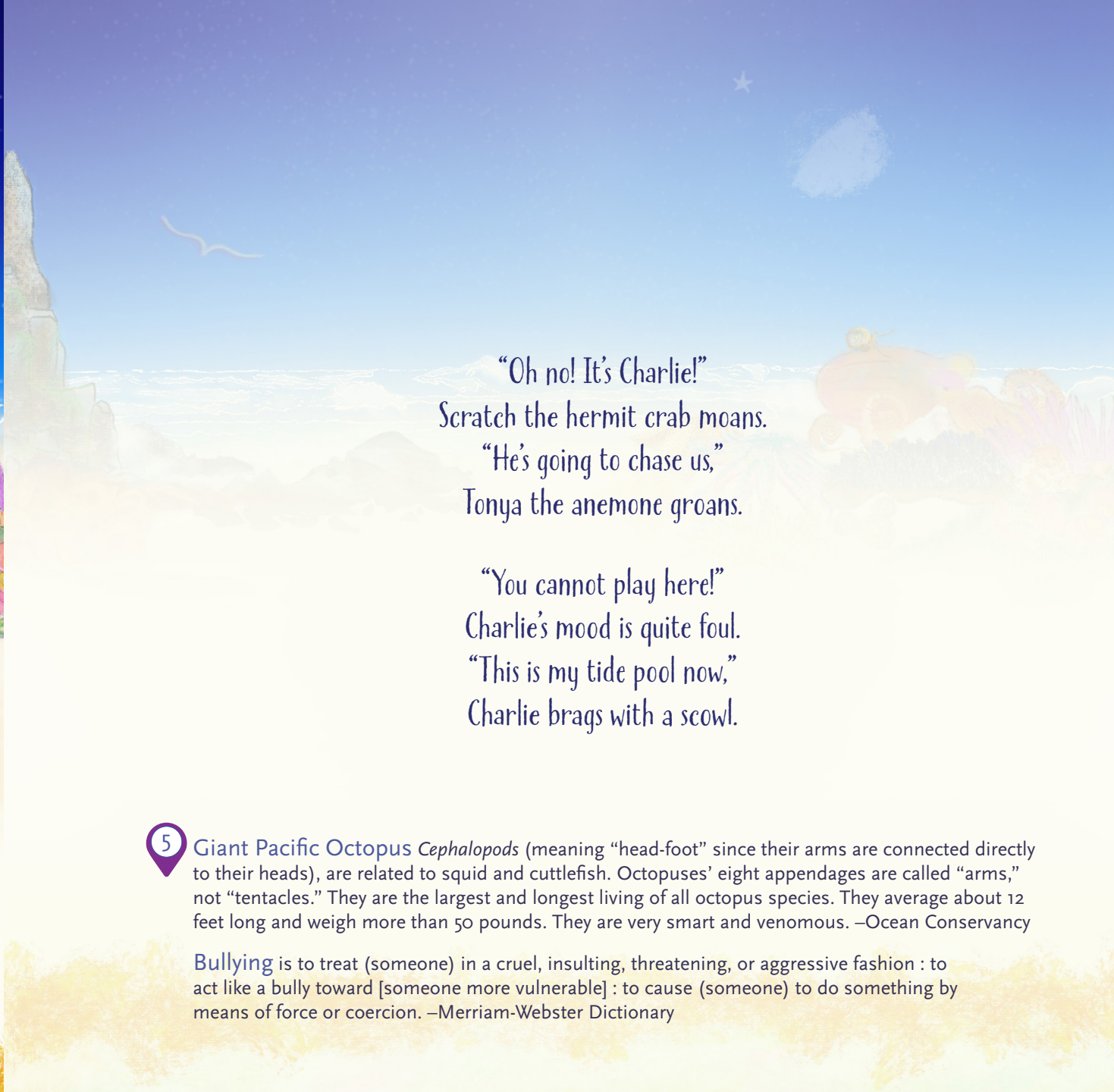
Low tide has arrived.  
It's a beautiful day  
when they suddenly hear,  
“Get out of my way!”

4

**Creatures in Motion.** As the low tide ebbs and reveals the tide pools, you will begin to see the action unfold. There is life everywhere. While some may appear to not move, like the muscles and barnacles, there is much in motion. The sea anemones, hermit crabs, sea stars, starfish, and yes, even the snails! It is truly a wonderland. You may have an hour window (half hour before and after the lowest point of the tide) so waste no time in exploring!



Octopus Charlie swaggers in  
like a low tide pool boss.  
With his eight stretchy arms,  
he looks very cross.

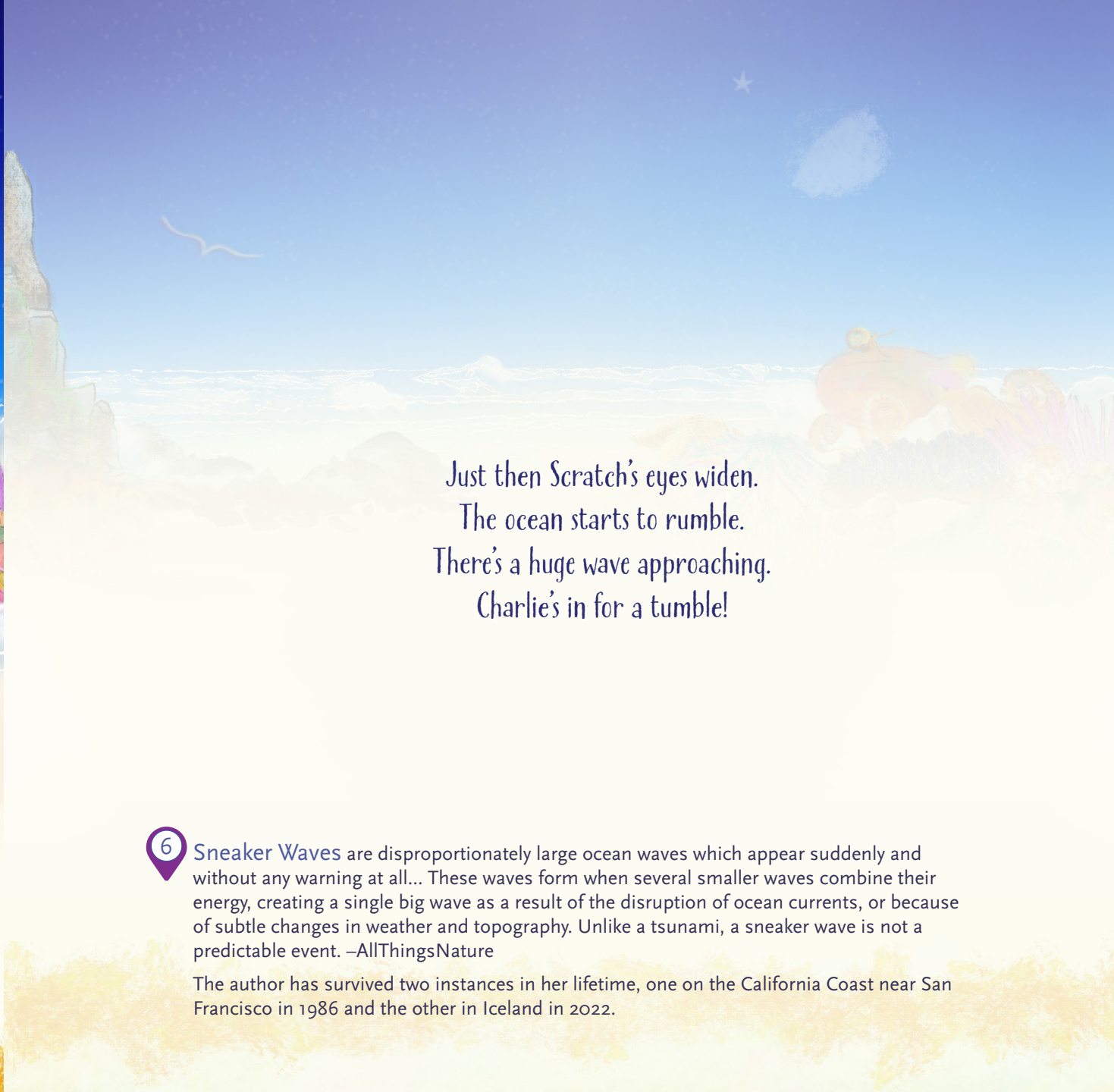


“Oh no! It’s Charlie!”  
Scratch the hermit crab moans.  
“He’s going to chase us,”  
Tonya the anemone groans.

“You cannot play here!”  
Charlie’s mood is quite foul.  
“This is my tide pool now,”  
Charlie brags with a scowl.

5 Giant Pacific Octopus *Cephalopods* (meaning “head-foot” since their arms are connected directly to their heads), are related to squid and cuttlefish. Octopuses’ eight appendages are called “arms,” not “tentacles.” They are the largest and longest living of all octopus species. They average about 12 feet long and weigh more than 50 pounds. They are very smart and venomous. –Ocean Conservancy

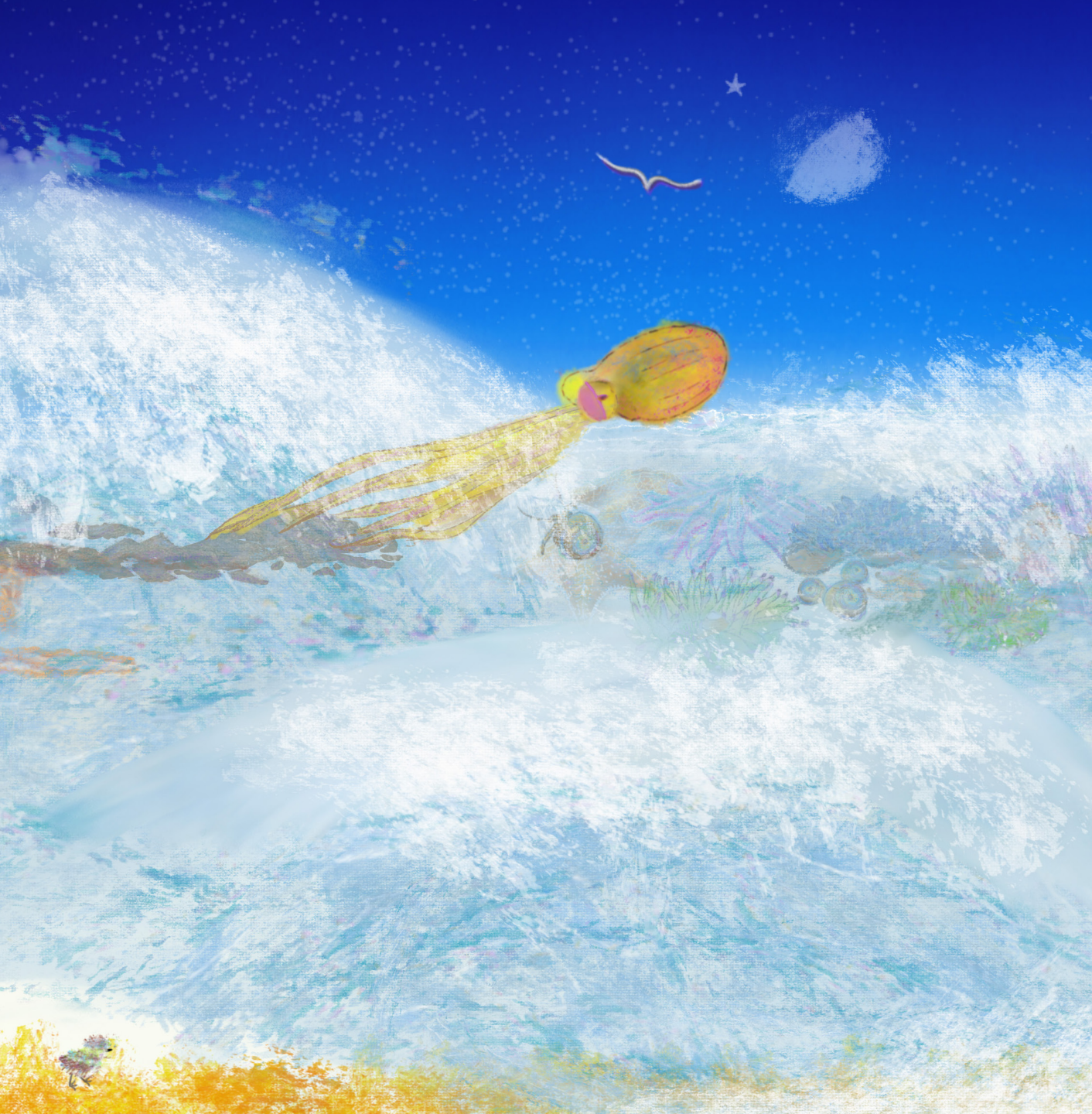
**Bullying** is to treat (someone) in a cruel, insulting, threatening, or aggressive fashion : to act like a bully toward [someone more vulnerable] : to cause (someone) to do something by means of force or coercion. –Merriam-Webster Dictionary



Just then Scratch's eyes widen.  
The ocean starts to rumble.  
There's a huge wave approaching.  
Charlie's in for a tumble!

**6** **Sneaker Waves** are disproportionately large ocean waves which appear suddenly and without any warning at all... These waves form when several smaller waves combine their energy, creating a single big wave as a result of the disruption of ocean currents, or because of subtle changes in weather and topography. Unlike a tsunami, a sneaker wave is not a predictable event. —AllThingsNature

The author has survived two instances in her lifetime, one on the California Coast near San Francisco in 1986 and the other in Iceland in 2022.



Faster than lightening,  
that wave crashes through.  
Charlie's tossed all around.  
It came out of the blue!



Charlie's fallen on rocks  
with his mouth full of sand.

Scratch calls, "Let's help him up!"  
Tonya's tentacles lend a hand.



Charlie sees the creatures  
in a very new way.

"How could I be so mean  
when they helped me today?"



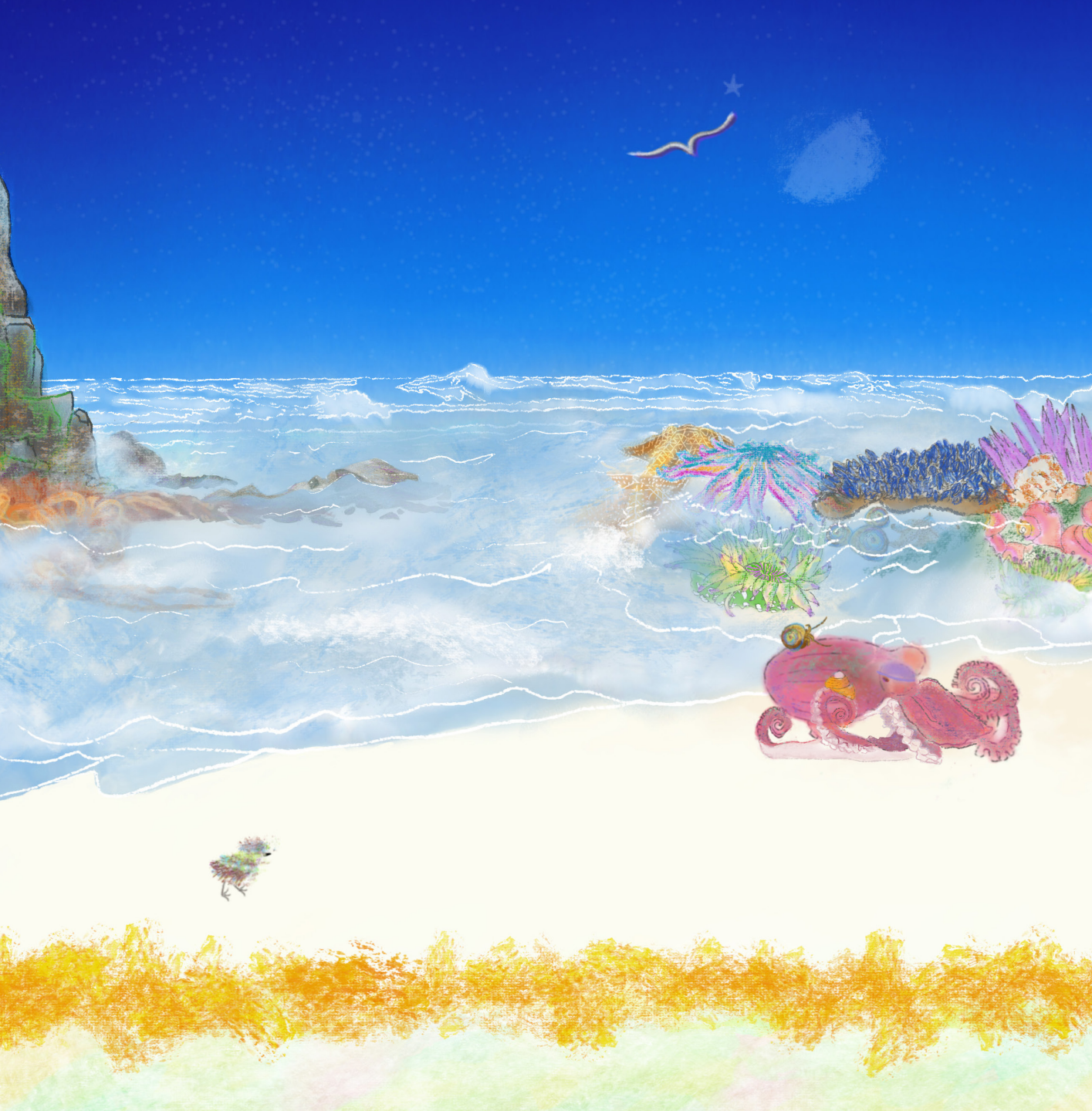


Scratch and Tonya step back,  
their help now they've shown.  
They move slowly away,  
leaving Charlie alone.



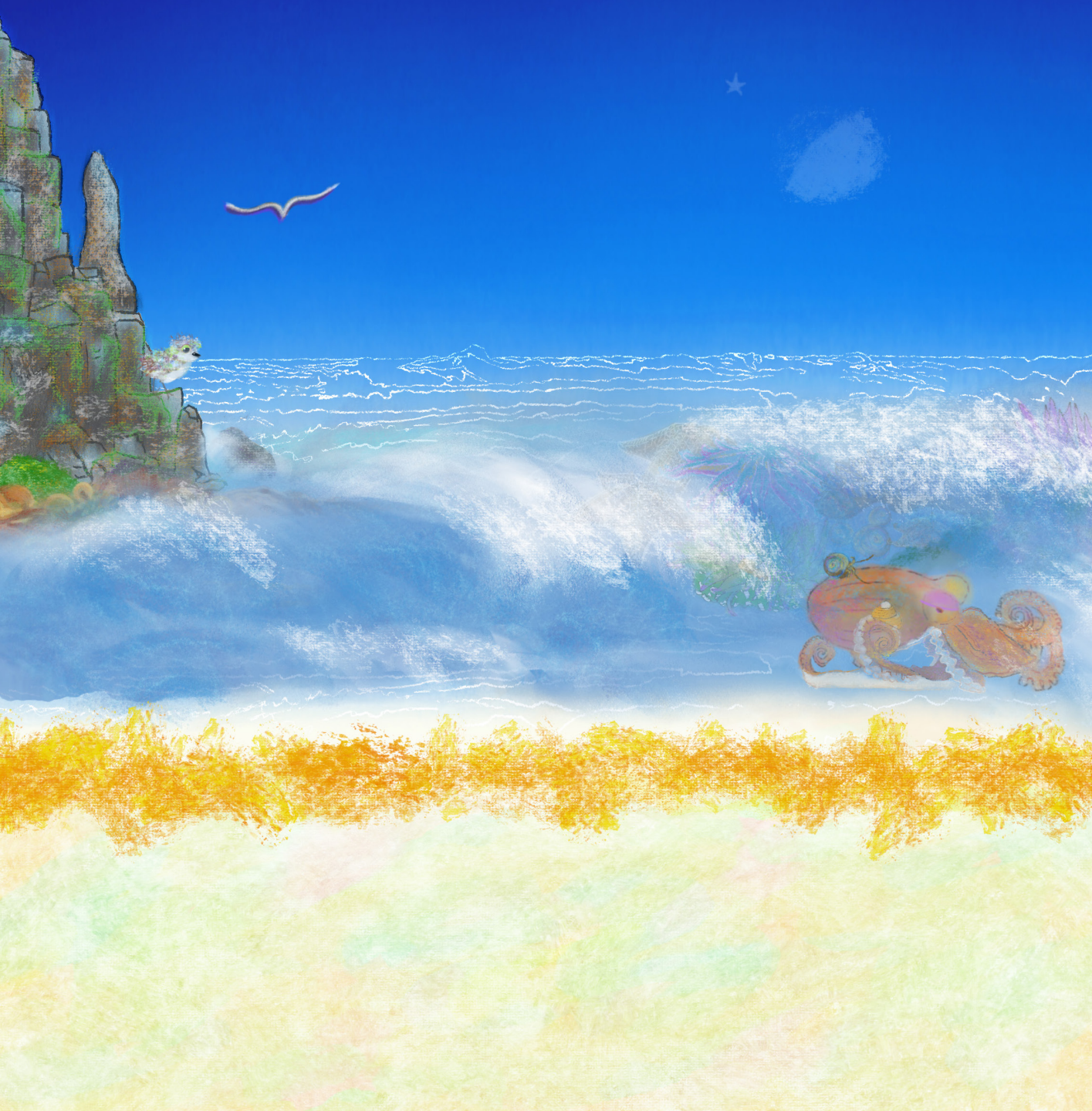
“Wait! Can I join you?”  
Charlie asks, now so sorry.  
“Can we share this tide pool?”  
“I was wrong to be bossy!”

OR HOW ABOUT...  
“Wait! Can I join you?”  
Charlie asks, now so sorry.  
“I was wrong to upset you”  
and make you all worry!”



“Yes!” yell the friends.  
Charlie feels good inside.

“Then climb on my arms.  
Let’s go for a ride!”



The tide ebbs away  
where ocean meets land.

The tide flows in  
at the edge of the sand.