

# Glacier Shallap – or the sad tale of a dying glacier

The Natural Environment Research Council (NERC) and Hay Festival have joined forces again for Trans.MISSION II, a global project pairing leading environmental researchers with award-winning storytellers.

Peruvian writer, theatre producer and actress Erika Stockholm and the Cabot Institute's Professor Jemma Wadham have worked together to create this story about Peruvian glacial retreat and its impact on water security.

Thousands of years ago, in the mountainous tropics, way up at the top, Shallap Glacier looked splendid. She was peacefully seated on a fan of multicolored rocks rich in metals.

Seen from the sky, with a bird's eye view, Shallap was a snowy island embraced by clouds. Beyond, in a row, behind clouds that looked like foam, were her seven hundred icy sisters outlining the route of the Cordillera Blanca.

Shallap Glacier's long skirts, constantly and slowly, like moving rivers of ice, reached the shores of its lagoon, and her seasonal thaws increased the river's flow. The river was clean and loaded with fish.

Like a prize, the top of Shallap Glacier was crowned with snow, making her proud, and replenishing the ice she generously gave away.

Shallap was magnificent, and everyone believed that she would be there forever. However, something changed everything. Fifty years ago (a blink of an eye in the life of a glacier), from north to south, and from east to west, the temperature rose, little by little, two degrees warmer than normal. That may sound like it's not much, but, for Shallap Glacier, it is the difference between melting and not melting...

## ...the difference between... to be or not to be.

And what is raising temperatures? There are one thousand, two thousand, three thousand... more than eighteen thousand airplanes flying... constantly. And millions of cars moving around the globe. And more are manufactured every day, without thinking about the carbon emissions that heat everything, even the last hidden corner of planet Earth.

Heat, more heat... Heat that starts fires, and those fires become forest fires... Animals are left homeless. Desolate, they move and enter the homes of others; different species fighting furiously. Diseases rage. Some animals disappear forever. Flames burn mercilessly for months. Smoke and ashes stain the atmosphere, generating even more heat.

Shallap Glacier is very far from airplanes and cars, and yet...

So Shallap Glacier lifted her skirts of ice, and shrank toward the top, exposing rocks that had been hidden for thousands of years. These rocks contained nasty, dangerous metals, such as arsenic, and lead. Air and water touched the metals, oxidizing them, and turning them acidic. Then, rain washed the poisoned rocks and everything ran into the Shallap Lagoon, continuing its passage to the river.

Shallap Lagoon became toxic green; Shallap River, rust red. The fish died... all of them. The llamas and condors left, looking for water they could drink, and food to eat.

The blueberry, potato and sweet potato plantations dried up. Suddenly, much, much less, not enough, grew on that land. Some of the desperate farmers left their land and went to look for other work. Their plots were abandoned. However, other villagers in the valley, more optimistic, looked for ways to clean the metals from the river. They created wetlands to filter the metals out of the water.

The river is grateful, and among the whispers of the filtering water, I hear his words saying:

"I go through long channels... back and forth... back and forth... This makes me dizzy, but at least the path is full of strong plants that trap metals. In the end, I come out clean and without acidity. What a relief! Thank goodness for the bright minds that created these wonderful filters!"

The river is happy for now, because he doesn't know what his tragic destiny will be... **But if the surrounding air continues to heat up...**

Yes, Shallap Glacier is terminally ill... Without Shallap Glacier, the lagoon will slowly dry up. Without a lagoon, there will be no river. Without a river, water will disappear, and life will disappear with it.

Shallap Glacier will be followed by her icy sisters, one by one. Dawn will never again shine on snow in the tropics. The Cordillera Blanca will be white only in name.

Who do you think caused this tragedy? Do you really want this? Or do you prefer a happy ending?

My big toe extends to the basin of my valley. It makes me happy to share the ice, and feed my river with icy water. Llamas graze among the ichu grass and reeds. Condors flutter their wings, sending showers of snow towards the sky. I keep the waters clean. Boys and girls, with their fathers and mothers, catch trout in my turquoise lagoon. The valley provides food for the town using my crystalline waters; they harvest blueberries, tarwi, potatoes and sweet potatoes.

I am the mother of the valley, the source of life. I am Shallap Glacier!

Oh, it's so hot, the heat is stifling! The air around me has warmed. It doesn't help me to live in the tropics. Oh, how I would like to live in a colder place, in Antarctica, for example! Some days I feel all my frozen body dripping. It is uncomfortable. My icy tongue melts so fast that I can't build up enough snow, high up, to replace it. I'm worried! I have no choice but to shrink upward on the mountain. I have to survive... at least it's colder up there.

I'm poisoning my river. I cannot control it.

I will continue to shrink, more and more... my frozen body will become stunted and weak. Till death.

Warm and gentle wind of the valley, forget me not; carry with you my melancholic song, and bring it to life on the strings of a violin, with a flute and charango. May the memory of my people not rage against me, because I never wanted to murder the valley; and let everyone know that I did not cause my own death.

“ If we stop carbon emissions right now, by the end the century Shallap Glacier may still see dawn in the tropics. She may not be proud and generous as before, but she WILL BE..., and perhaps, her icy sisters will not share her terrible fate, and still be shining splendidly at the top of the Cordillera Blanca so that we and the future generations can admire them. ”