Welcome to the **Hotwater Physa** Mini-Museum.

My name is Henry, and I'm the curator of invertebrate zoology at the Royal BC Museum. I study animals without backbones—but not insects or spiders.

Although many invertebrates are very small, they make up a large percentage of animal life on earth. Of the 2,007,702 living species that have been named and described 1,324,402 are invertebrates. But although there are lots of them, some invertebrates can be found only in very specific places!

The Hotwater Physa (*Physella wrighti*), a tiny freshwater snail, has been found in only one place in the world: at the Liard River Hot Springs Provincial Park in northeastern British Columbia. These snails live in the hot springs, at temperatures ranging from 23 to 40 °C. Hotwater Physa mostly feed on the algae that grow on rocks and submerged branches at the shallow edges of the springs.

DR. HENRY CHOONG,
CURATOR OF INVERTEBRATE ZOOLOGY
AT THE ROYAL BC MUSEUM

British Columbia's
SPECIES AT RISK
A Travelling Exhibition

Presented by
ROYAL BC MUSEUM

Hotwater Physa

Good things come in small packages

IMAGE BY THE ROYAL BC MUSEUM

Fun with **Form** and **Function**

Snails are molluscs, a group of invertebrates that include clams, slugs, squids and octopuses. The Hotwater Physa, like many molluscs, has a hard shell which encloses, supports and protects its soft parts. Mollusc shells come in many shapes, sizes and patterns.

How are snail shells different from those of other molluscs?

Snails have coiled spiral shells. They coil unevenly in one direction: either left (sinistral) or right (dextral). Over 90 per cent of snail species have right-coiling shells, but in the Hotwater Physa, the shell is coiled to the left.

Why is the Hotwater Physa a leftie, when most other snails are right-coiling?

Probably because they all live together! Most marine snails (snails that live in the ocean) coil right, and because they travel such great distances before mating, it's unlikely that two lefties will meet up and have lefty offspring.

But snails that live on land and in fresh water don't travel so far. As far as we know, all the Hotwater Physa in the world live in the Liard Hot Springs, so they don't have far to go to find lefty mates.

The one and only

The Committee on the Status for Endangered Wildlife in Canada (COSEWIC) designated the Hotwater Physa endangered in April 1998. **Why did this species become endangered?**

The Hotwater Physa lives in a very specialized environment (hot springs), and as far as we know, it lives only in this one part of the world. Human activities that disturb or pollute its habitat affect not just one population but the whole species. If the threat from human activities remains unchecked, the Hotwater Physa could become extinct.

What can we do to maintain the habitat of the Hotwater Physa?

Since the Hotwater Physa lives only within the Liard River Hot Springs Provincial Park, we must be very careful about how we use the park. We have to avoid doing anything that could alter, disturb or destroy the snails' habitat. It's important to shower before entering the hot springs to wash off any chemicals that could harm the snails, such as sunblock and insect repellent, and to stay on marked trails and boardwalks. It's also important not to block weirs, alter stream flow, damage vegetation or take specimens from the park. We must be careful never to introduce non-native animals such as turtles into the Liard Hot Springs—these could be devastating to the local plant and animal life.

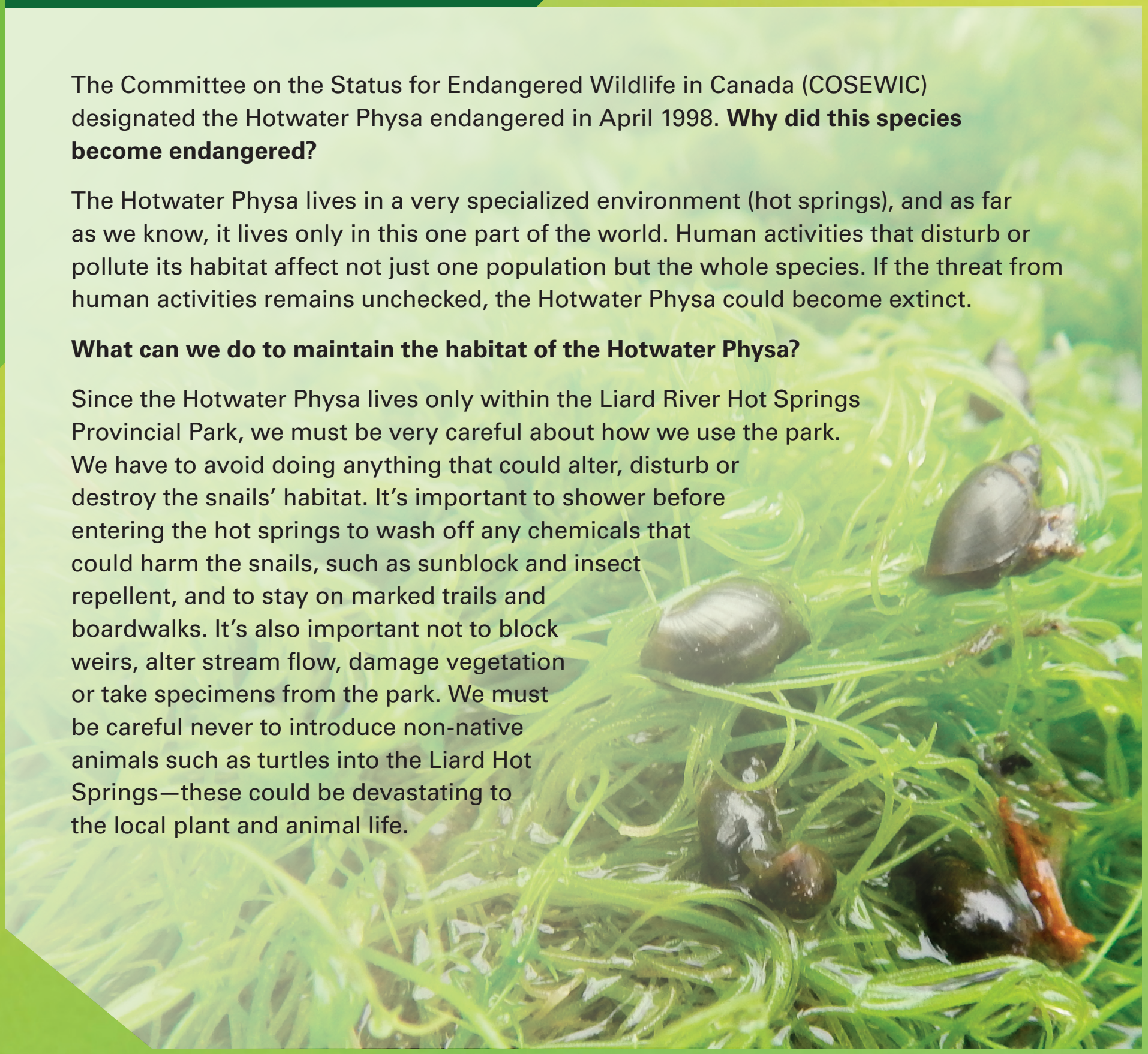

IMAGE BY JENNIFER HERON

That Perspective

Nurturing nature

Why should we protect the Hotwater Physa and its habitat?

This species is a habitat specialist: it needs geothermally regulated (earth-heated) water, no currents and a surface to live on near where the water meets the air. The Hotwater Physa and other hot spring species are interesting to scientists because they can help us understand how unique groups of species adapt and survive within specialized environments. *Physella wrighti* shows us that this hot spring ecosystem continues to be an important habitat for unique organisms.

IMAGE BY JENNIFER HERON