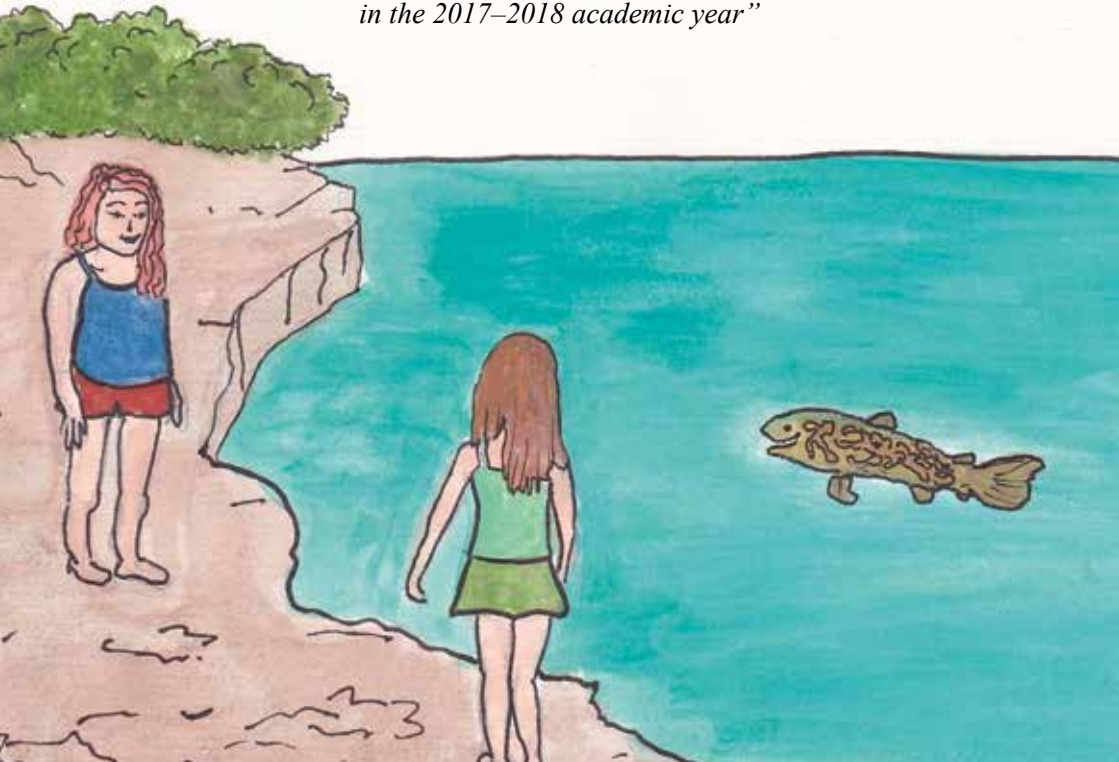


BISTRA'S ADVENTURES

Nika Simčič, Klemen Levičnik and Tina Mahnič

*Educational environmental story created as part of the project
Increasing the Children's Environmental Awareness
through Outdoor Nature Activities*

*“Student Innovative Project for Social Benefits
in the 2017–2018 academic year”*



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Activities
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Social Benefits in the 2017–
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Študentski inovativni projekt za
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2017–2018

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INTRODUCTION

For a number of years, the Sonček Sports Association from Solkan, Slovenia, has been organising various educational activities for primary school pupils and kindergarten children. This educational programme, called “Summer at the Soča River”, is carried out during summer vacation periods and is attended by over 300 children annually. The programme includes environmental educational workshops performed by trained staff of the University of Nova Gorica’s Laboratory of Environmental and Life Sciences. The topics of the workshops deal with current environmental issues. Moreover, in the year 2018, a new methodological approach to delivering the above-mentioned workshops was introduced. As part of the project scheme “Student Innovative Projects for Social Benefits 2016–2018”, the student project “Increasing the Children’s Environmental Awareness through Outdoor Nature Activities” was launched by the School of Environmental Sciences of the University of Nova Gorica. The project was funded by the Public Scholarship, Development, Disability and Maintenance Fund of the Republic of Slovenia within the framework of the programme European Cohesion Policy in the period 2014–2020.

The aims of the student project were:

- 1) to introduce new, current and interesting topics to raise the children’s awareness in the field of nature protection and the preventing of harmful effects on nature;
- 2) to familiarise the children with the selected topics in a clear and interesting manner;

- 3) to produce a set of environmental workshops, educational texts and website contents to be used by the Sonček Sports Association to continue raising the children's environmental awareness in the future;
- 4) to ensure permanent access to the educational environmental materials produced (the latter would not only be accessible during the periods of carrying out the summer educational programmes, but would also be available online at all times).

To achieve the aims of the project, new educational materials were produced, including graphic materials covering the topics of river pollution caused by traffic, the topics of earthworms, macroinvertebrates and invasive species found in rivers, riparian vegetation and its role within the ecosystem. To bring together all the selected environmental topics, an educational illustrated booklet called "Bistra's Adventures" was created, featuring the story of the main character – Bistra, a marble trout, who is travelling downstream the Soča River from the town of Tolmin towards Solkan, facing various ecological issues, meeting new friends and learning new things.

This educational story and other educational materials produced were used in the innovative workshops performed as part of the "Summer at the Soča River 2018" educational programme. To help raise the children's awareness of the selected environmental topics in the future, an interactive website was created as part of the project, enabling the children, their parents and the general public to access the materials at any time. All educational materials will also be available on the website of the Sonček Sports Association.

BISTRA'S ADVENTURES

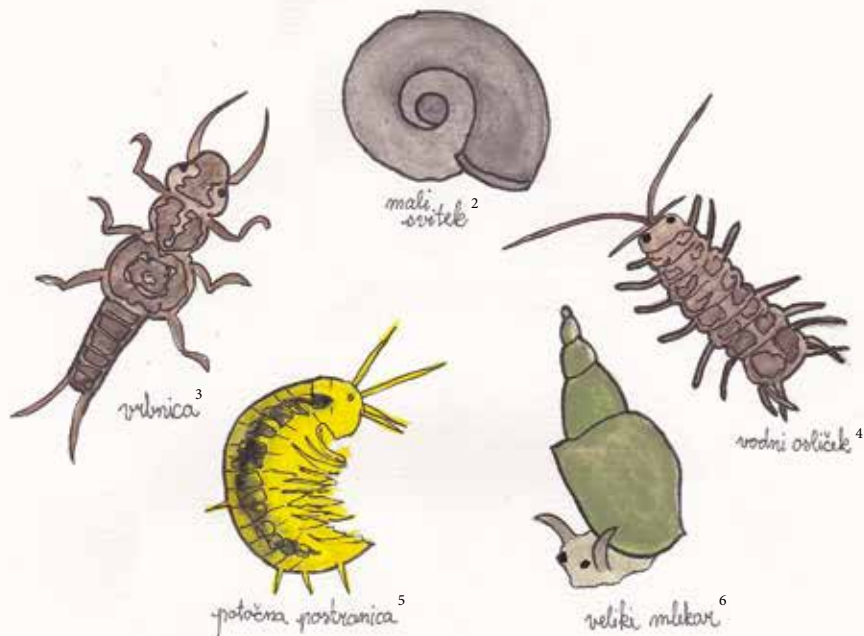
Hello, my friends! I'm Bistra, a **MARBLE TROUT** and today I'll tell you my story.

But first, let me tell you something about me. I'm a fish and I'm about 50 cm long. My body is olive-coloured, with a marbled pattern of different shades on the sides, from brown to green. This pattern is typical of my family. In winter, me and my 4,000 sisters and brothers will celebrate our fourth birthday. We were born on 2nd December in a sandy pothole, called a spawning ground, in the clear waters of the Soča River. My name is Bistra, which actually means "clear" in Slovenian. When we were younger, we used to hide and play in shallow, bare gravel bottom areas. The older we grew, the deeper we were seeking for our shelters, usually in deep pools. Our favourite treats were little crayfish, snails, larvae, insects ... in short, we ate everything we could dig out from the bottom.



¹ Picture of a marble trout (*Salmo marmoratus*, "soška postrv" in Slovenian)

Sometimes we had a real war for food, we used to search for these little edible animals everywhere. Some of them were found attached to the rocks; some were hiding among the roots, while the others were hiding or moving up and down the river bottom. My mum called all these little animals invertebrates. She also told me that the name **MACROINVERTEBRATES** stands for these little animals which live on hard surfaces in the rivers or on the river bottom. The word *invertebrate* stands for animals which are without backbones (also called vertebrae), they are small and do not have a complicated body structure.



² Picture of an ash gyro (*Gyraulus parvus*, "mali svitek" in Slovenian)

³ Picture of a stonefly (*Plecoptera*, "vrbnica" in Slovenian)

⁴ Picture of a water louse/cress bug (*Asellus aquaticus*, "vodni osliček" in Slovenian)

⁵ Picture of a fresh water shrimp (*Gammarus pulex*, "potočna postranica" in Slovenian)

⁶ Picture of a pond snail (*Lymnaea stagnalis*, "veliki mlakar" in Slovenian)

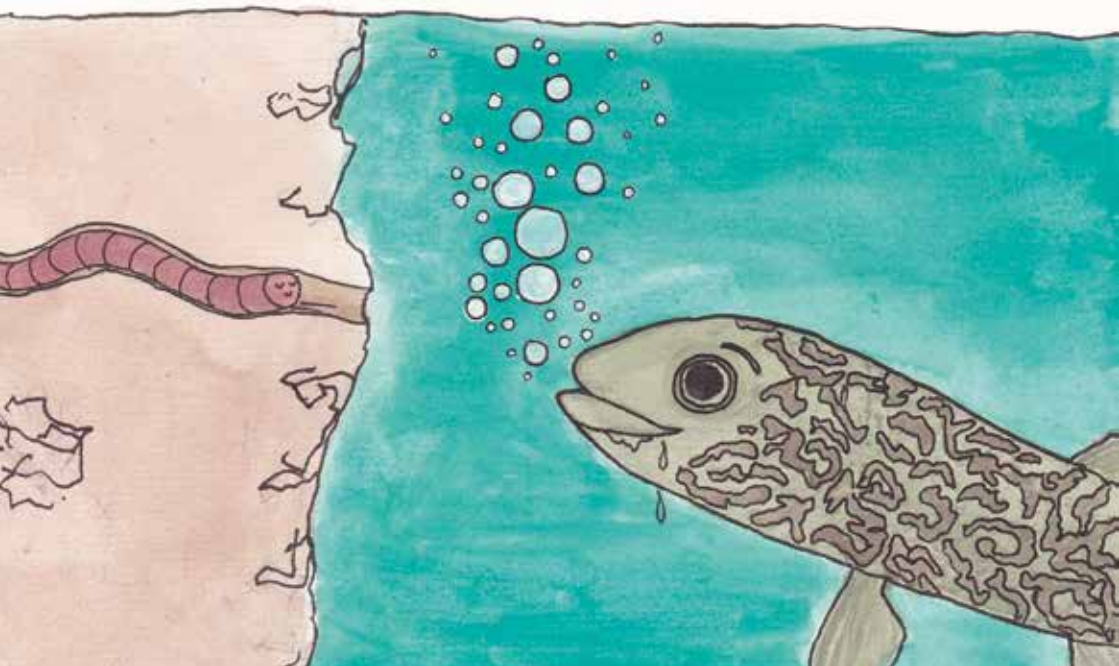
After I finished school at Pool Class number 11 in Tolmin this summer, I decided to take a challenge. I had actually been considering taking this challenge for months. And I eventually accepted the invitation of the Sonček Sports Association and started my journey from Tolmin to attend the summer school under the Solkan bridge. They invited me to participate in the **ENVIRONMENTAL WORKSHOPS** for children, carried out by the students of the University of Nova Gorica.

I said goodbye to my family, ate some crayfish and went with the flow to seek new adventures.



My journey started in the afternoon. A few minutes before midnight I stopped in Doblar, because I was very hungry. I looked around and I saw a big worm near the shore. It turned out that the worm was actually an earthworm. Instead of digging towards the land, the worm dug its passage into the water. By moving their bodies and digging underground passages, earthworms till the soil and supply air to it. As I was terribly hungry, I quickly grabbed the earthworm and had a yummy dinner. I have to admit it was quite a meal, the earthworm was fat, and I soon fell asleep with my belly full.

The next morning I was woken up by the sunshine. I continued my journey by swimming with the flow towards my final destination. The scorching sun was shining above me and it was getting hotter and hotter. The strong sunrays reached the surface of the Soča River and I also felt the heat. Around noon, it was so hot that I had to hide into the shade. Somewhere near Ajba I think I saw a long vegetation line. Besides offering me a nice shade, such vegetation lines calm down the river flow and strengthen the riverbank with their roots, so the wild Soča River can't wash the riverbank away.





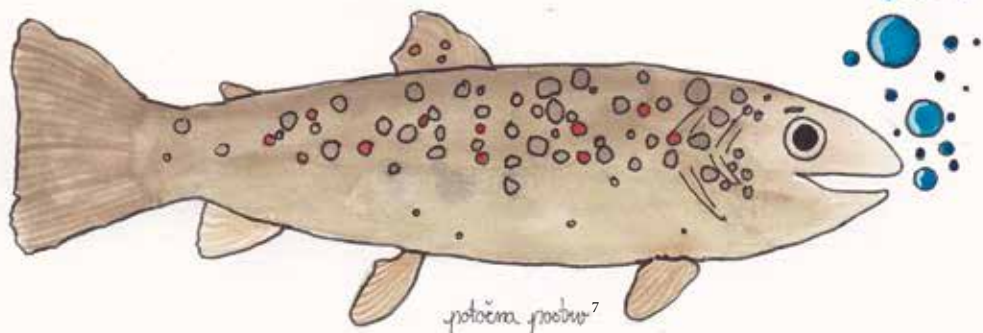
In this terrible heat, I took shelter under the roots of an alder tree, which formed a cave stretching deeply into the riverbank. I had a great afternoon in these hiding places of **RIPARIAN VEGETATION**.

In the evening, when I swam back to the shallow waters, I first rubbed my scales, sparking in the emerald surface, and then I moved on, full of energy.

I was swimming through the rapids, jumping in the pools and trying to avoid large rocks. Near the town of Kanal I swam around a huge rock and managed to avoid the branches of a fallen tree. When I passed the last branch, I saw him. His name was Potoček, because he was a brown trout, or “potočna postrv” in Slovenian. He was the handsomest boy I’ve ever seen. His back was of greenish-brown colour with black spots, and his sides were yellow, almost

golden, with red spots. All his spots were circled with white or light blue colour. He was outstanding, so special, so different and colourful. He was a Prince Charming.

With his silky voice he said: “Hello, pretty! Your socks are different than mine!” I stared at him and replied: “Are you from salty waters, or what?” He giggled, winked, introduced himself and disappeared. I tried to follow him through the roots, jumping over the obstacles, from pool to pool. But Potoček was so fast that I couldn’t catch him and I was totally out of breath and sweaty. But then I noticed that he had slowed down, and near the town of Deskle, thank God, he stopped. I swam closer and hear him say “Hey, girl, did you see the flying elephant?” He kept surprising me with his cute weirdness, and I replied “Of course not, where could I?!” He said “You know what, me neither.” I thought he was making fun of me, but he was so charming, so different, so handsome. The last thing in my mind was to fall in love with him at first sight, but he seemed to be the man of my dreams to me. Well, I swam back to reality as soon as he poked me with one of his fins.



⁷ Picture of a brown trout (*Salmo trutta*, “potočna postrv” in Slovenian)

He gave me a sign to look up and above us I saw two human beings, a grandpa and his grandson, rushing towards a tree and carrying two baskets. The grandpa started peeling off the bark from the tree with his pocket knife, while his grandson was climbing the tree and picking the leaves. I eagerly asked Potoček: “Potoček, why are they hurting the tree?” He explained that they weren’t hurting it, but rather collecting the ingredients for tea and other important remedies. He also told me that the tree was called a **WILLOW**.

We stopped chatting for a while and listened to the conversation between the grandparent and his grandson. We found out that the grandpa was a fisherman. He was explaining to his grandson that there are many different species of fish. Some of them are autochthonous, while the others are alien or, in other words,



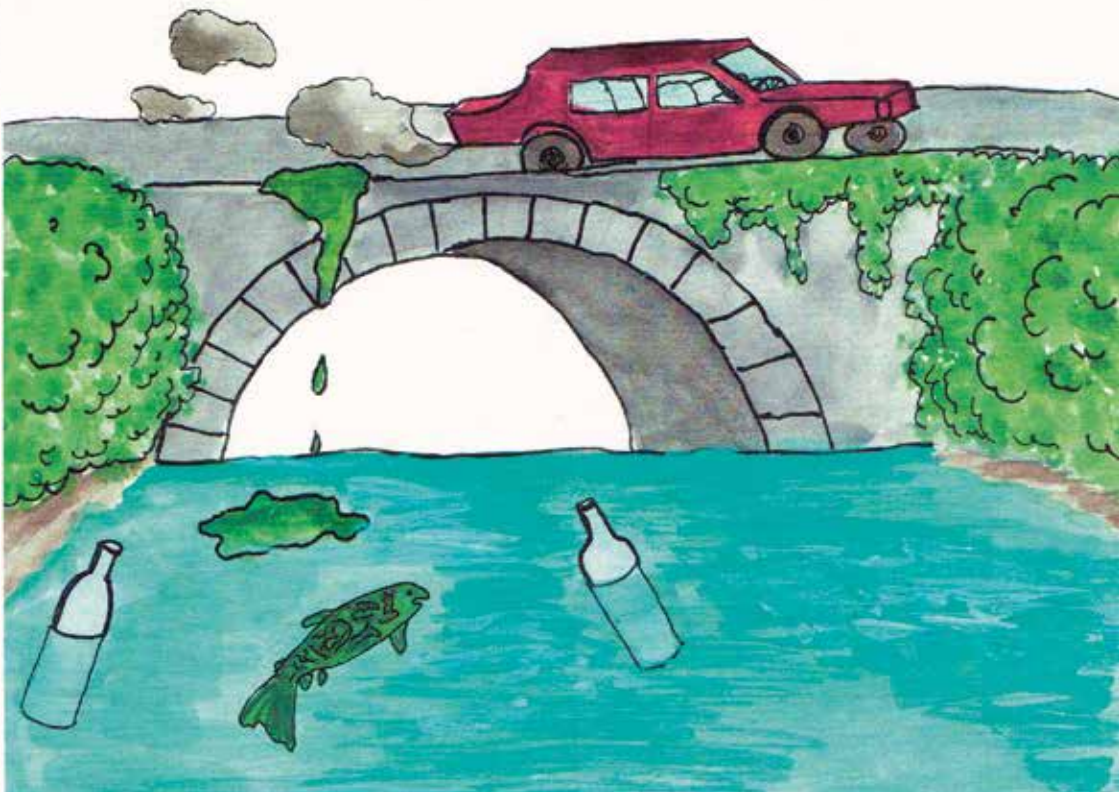
INVASIVE SPECIES. I learned that the autochthonous species of fish have always been present in the Soča River, while the alien species had been brought from other rivers.

Then the grandpa grabbed his grandson by the hand and took him to the riverbank, where Potoček and me were watching what was going on. He pointed his finger towards me and said: “Look, this is a marble trout, which is an autochthonous species in the Soča River. This river flows into the Adriatic Sea. And there is a brown trout next to it, which is typical of the rivers flowing into the Danube River. The **BROWN TROUT** causes damage to the marble trout because it mixes with it and it fights for food and habitat.”

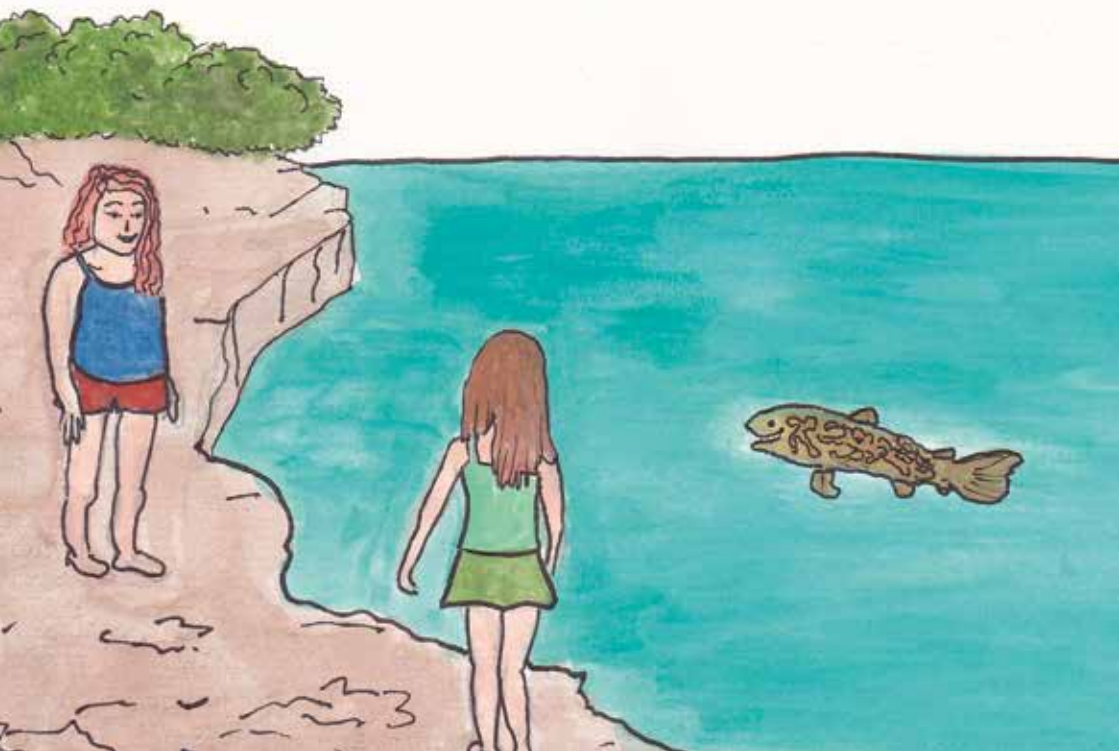
I turned around but Potoček wasn't there anymore. I started searching for him, calling him and I checked all the pools, rapids and coastal hideouts. After looking for Potoček for the whole afternoon, I was exhausted and hid in a pool, waiting for the next morning. I slept very badly because I was very disappointed and I couldn't forget about Potoček, although I knew he was dangerous and harmful for our species.

Next morning I continued my journey, thinking about the environmental workshops. On that morning I was longing for some winged insects for breakfast. On the way to Plave I jumped out of water many times like a gymnast to catch a fly, a midge or a dragonfly. We, fish, hunt for these insects by following them and observing them from under the water, and then, when it's the right time, “hop!”, we jump out of the water and eat them up. I also have to tell you that something unpleasant happened to me during the breakfast. When I made a jump to catch a dragonfly, I landed in a strange, greasy, black, smelly and thick liquid. The liquid on the water surface formed a shadow, which was blocking the sunrays, so it was very dark underwater. I kept my mouth shut and I was holding my breath, because I was afraid to let this

strange dark liquid into my body. When I escaped this dark spot I had to stop because I was upset and felt pretty bad. On a lay-by I spotted a white-clawed crayfish, who recognised me immediately and said: “Oh, young lady, you were lucky to escape that sludge. You know, my friend, anybody who has ever drunk that liquid got sick and damaged the internal organs.” He also explained that the liquid was in fact oil which had leaked from the truck on the nearby road. This is called **TRAFFIC POLLUTION**. I thanked him for informing me and said goodbye. I moved on swimming towards my final destination, made my last two turns and came to you, my friends.

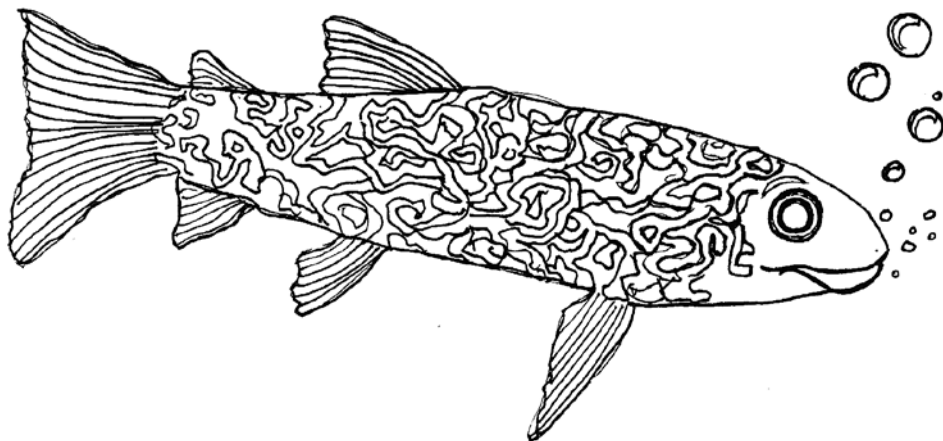


I admit that reaching my final destination was very difficult and it got me tired. But despite the long and difficult journey it was worth it. On my way here, I met some new friends and my unrequited love, Potoček. I hope that he will return to his home river and find luck, happiness and love there. I believe that we have all learned something new through my story. Maybe someday each of us will help protect the nature and save the world from pollution. And now, get ready; it's time for environmental workshops, at which we will learn even more new things through my adventures.



COLOURING PAGE

Turn Bistra, the marble trout, into a fish princess by colouring her.



The project was carried out by:

- students of the School of Environmental Sciences Nika Simčič, Klemen Levičnik, Tina Mahnič and Kaja Karner;
- student of the School of Arts Maruša Šošterič;
- student of the School of Humanities Zala Zbičajnik;
- students of the School of Engineering and Management Nina Bizjak and Jovan Sosić;
- pedagogical mentors from the University of Nova Gorica Prof. Dr. Mladen Franko, Prof. Dr. Aleš Vaupotič and Prof. Dr. Peter Purg, and
- mentor from the Sonček Sports Association Dražen Grbac.

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