



Maggie

My story



Hello there!

Do you know who I am?

I am a freshwater pearl mussel.
My real name is Margaritifera, but
you can call me

Maggie!

I live in the river together with
my friends.

I look much like other mussels, but
I am nevertheless very unique.

This is what I look like

Let's take a peak inside
and see how I work!



Can you see how I shine?

In the picture you can see the nacre, also known as the mother of pearl, which is a layer inside of my shell. From this layer it is possible for me to grow beautiful, shining pearls! Not all of us make pearls, it happens only when a sand grain gets inside to scratch our inner parts. We try to get rid of the sand grain, but instead we grow a pearl around it. Isn't that strange?



The water comes in through here...

...and when I have fed, it comes out of here.

This soft layer is on the inside of my shells surrounding my inner parts. It is called a mantle and it makes me feel comfortable.

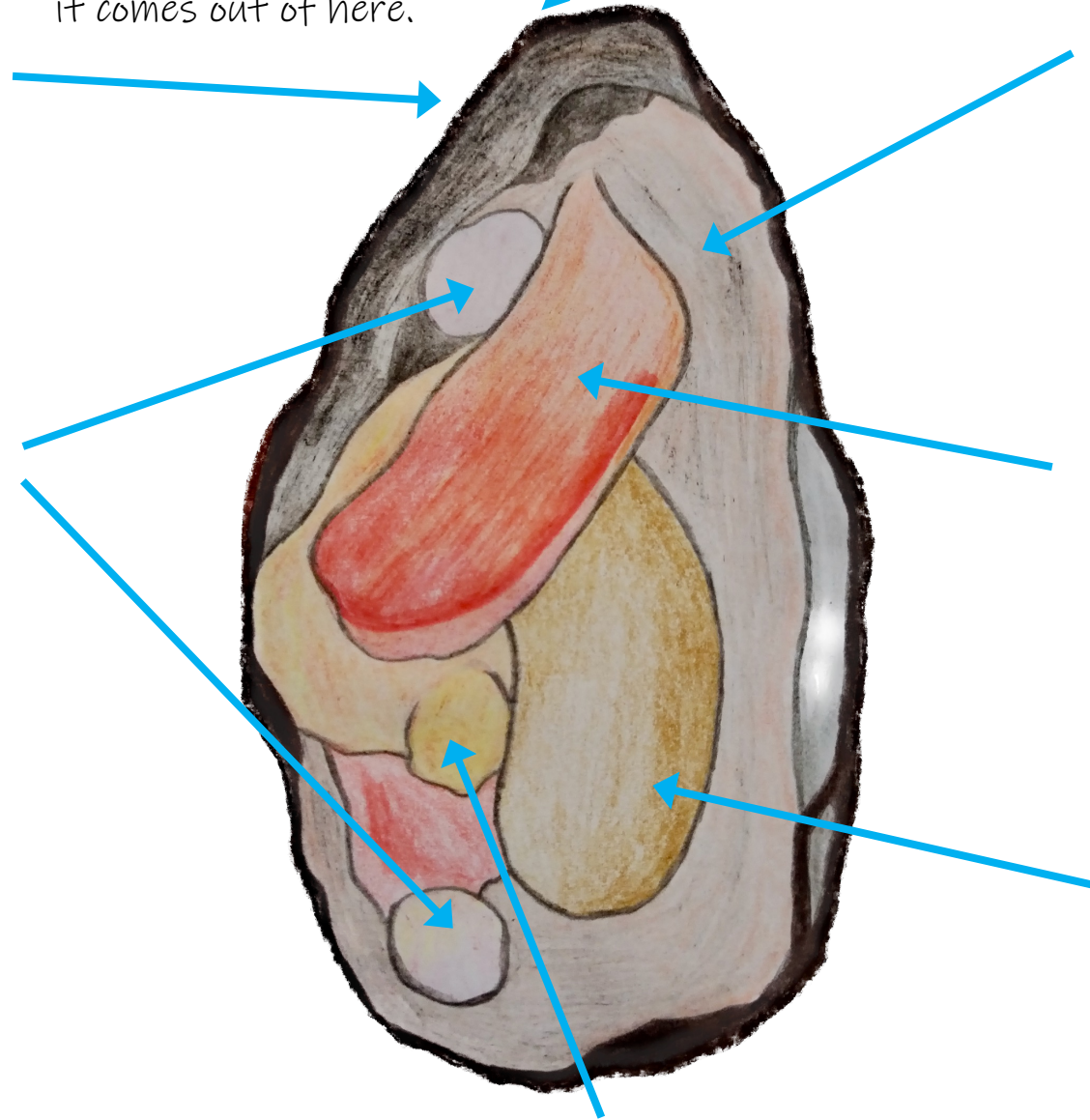
I use these strong muscles to close my shells to keep enemies and dirty water out.

These are my gills. I use them to filter river water. At the same time I pick small food particles for my nourishment and gain oxygen I need to breathe.

I can not keep my shells closed all the time, I have to open them from time to time to breathe and to get nourishment.

This is my foot. I can use it to reach the bottom gravel and pull myself deep into the sand, so that I won't wash away with the current.

This is my mouth.





Now, that you know what I look like, let me tell you more about my life...

I have lived a long time. And even though I am a mussel, I have experienced a lot!

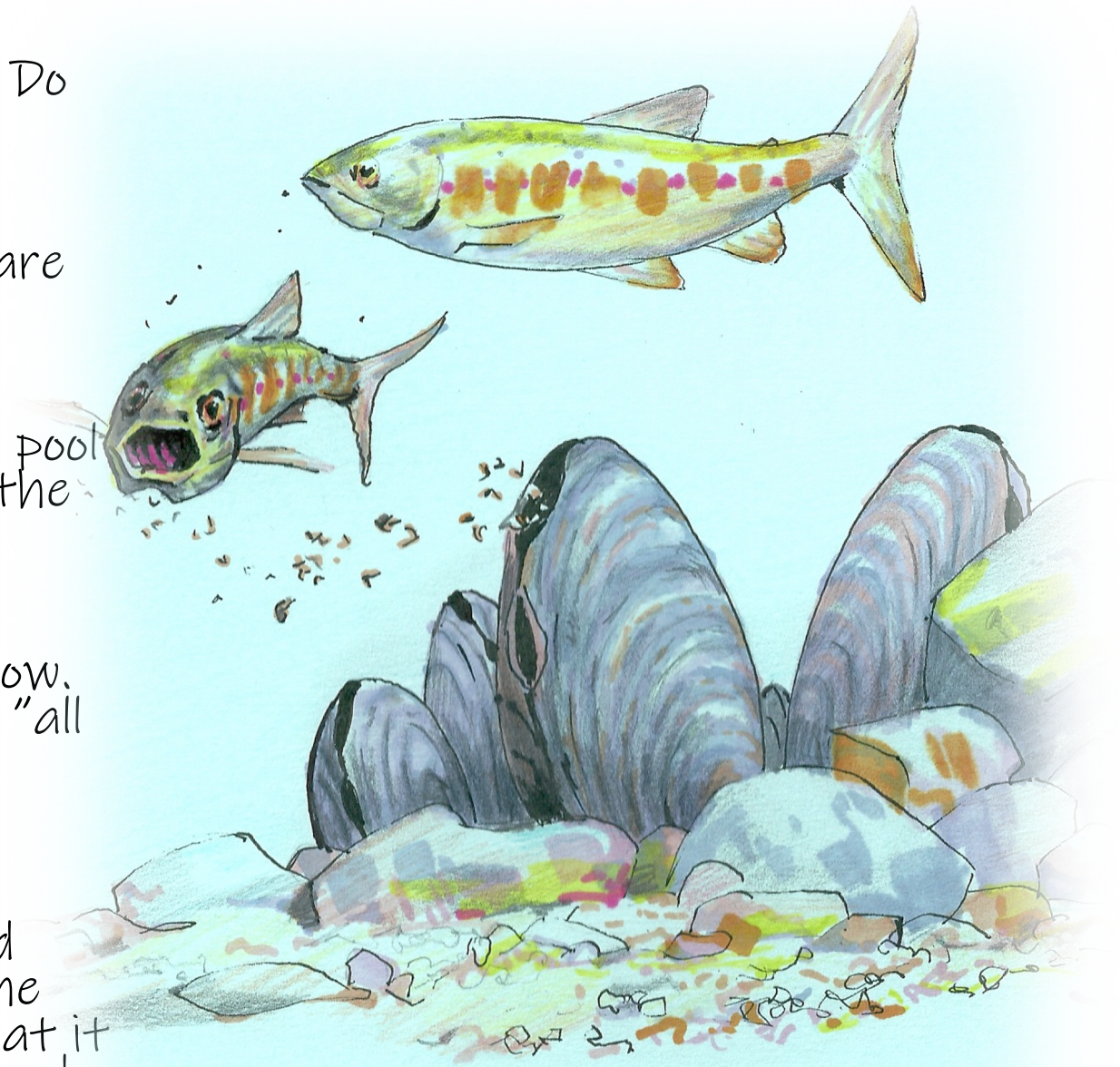
I am an old mussel now. 123 years old to be precise. Do you know anybody who is as old as that?

Many of my neighbours are even older. Some of them are up to 140 years old.

I have spent all my years in this same river stream pool without ever going further than by the big rock on the side of the stream pool.

When I was born, my mother was older than I am now. I remember the day when all of us were born. I say "all of us", because there were many of us!

As all mussels, my mother had thousands of children every year. When the right time came we were freed from the safe place inside our mother's shells into the cold river water. What a fright! We were so small that it was nearly impossible to see us with the naked eye, and suddenly we were at the mercy of the rapid stream!



Let's go back to that scary moment in my story and what happened next...

Frightened, I began to toss and turn in the strong current. I watched my brothers and sisters as they helplessly vanished out of sight taken by the water, realising that we would never meet again. It appeared I was on my way to the same unknown and that my first day would also be my last.

But suddenly I saw a young trout, called Tony resting behind a rock protected from the current. Tony's large mouth opened and closed as it breathed in the water.

I noticed I was tumbling towards the fish, and soon a strong whirl sucked me into the open, dark gape of the fish...

To my surprise, inside the fish it was almost as calm as inside my mother's shells. I was floating in the water past the fish tongue and crashed into its bright red gills.





I realised that this was my only way to survive. I closed my small shells around the gills and held on for my life. The covers protecting the gills opened and water flowed through the gills from Tony's mouth. I stood firm.

I was finally safe! Nothing could bother me here and the current could not take me away – thanks to my host, Tony the trout.

When I was settled in my new place, I was glad to notice some of my siblings had been lucky enough to have found their way into the cover of the trout. What a relief!





For a couple of months we enjoyed our time together and travelled with Tony the trout around the river. We peeked out of our hiding place between the gill covers and saw adult mussels in the surrounding environment, who seemed to be comfortable at the bottom of the river.

We were very comfortable on the trout's gills, but the more we grew the smaller the space became in our little protected spot, and the more unwilling Tony became to carry us around with him. We knew that we would have to leave our friend and sanctuary and try our luck in the river.

One day, when Tony was resting in a peaceful place at the gravel bottom, I decided now was the right time to let go and leave my trout friend, who had saved me in the past. Even though I was very frightened, I carefully opened my shells and let go of my grip on Tony. I slowly slid into the water and drifted into the bright sunshine. The current was still strong, but I was stronger and heavier myself. I flowed down like an autumn leaf from a tree back and forth, until I landed on the river bottom.



I gently fell on the sand. I was still frightened, because I did not know what was waiting for me. I knew, that I could not stay and wait on the bottom gravel for the current to take me or to be eaten by a predator. I used my foot to dig deeper and deeper into the cool, safe sand. Even though I was buried in the bottom of the river, the flowing water supplied me with oxygen and food through the sand grains, that I needed to stay alive. I was safe again – now in a place where I could grow and become stronger before returning to the river bottom into a more dangerous world.

I spent a long time burrowed into sand and gravel. Us mussels, we grow slowly, so it took five years before I was big enough and brave to crawl onto the the bottom gravel surface with to join the other adult mussels. That was 118 years ago.



When I got onto the river bottom, I began moving in among the mussels towards my own mother. She barely recognized me as I had grown so big. You may wonder, how she recognized me at all – she does have thousands of children after all – but mothers always recognize their children! I was so curious about his entirely new world, that I could not stop asking: where does the water come from? Where do the fish go, when they leave the river? What on earth keeps the water flowing and changing shape? Why do the colours around us change as autumn comes and why does it start to feel colder? So many questions!

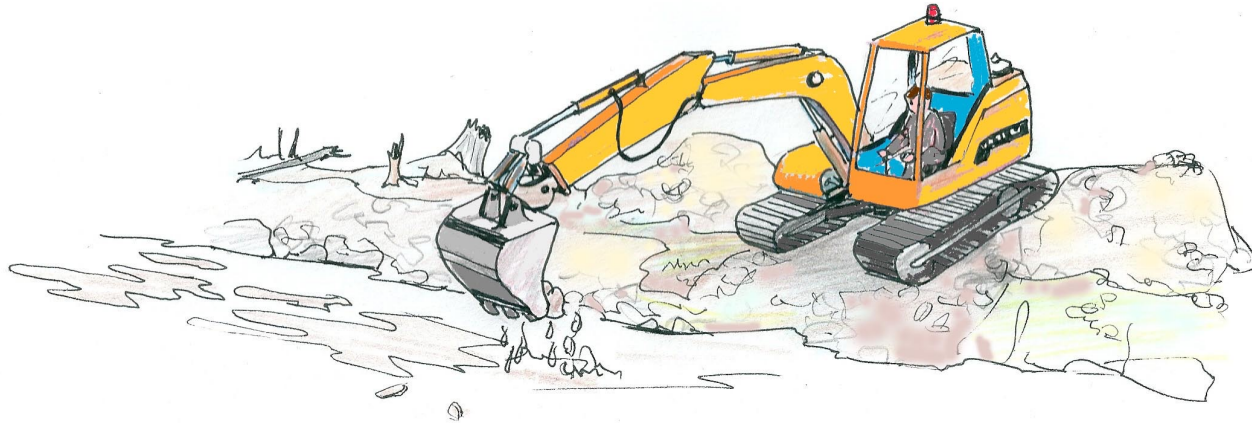
My mother was very patient and answered all my questions. She told me many stories of the river from times, when she was a young mussel herself. She remembered how sometimes large, beautiful broad-leaved trees decorated the river shores and how the riverbed was at peace from occupants and disturbance:

"The seasons were different from each other, autumn colours were the most beautiful, river flow was more volatile and there were ample places for mussels to live. The animal species was richer, and it was not uncommon to see a magnificent wolf coming to quell its thirst by the river. It was not a danger for the mussels, but occasionally the wolf's arrival scared the deer, who also were drinking at the river. The deer would run for their lives straight across the river and as they passed they damaged or even destroyed some poor mussels with their sharp hooves. At these times mussels were bunched up so tightly, that the river could not be crossed without stepping over them."

Some time later all of these beauty began to fade. Trees disappeared from the riverbed, the landscape was replaced by bare green openings, leaving us without the protection of the trees' shadows from the hot summer sun. New animals began to arrive at the river to drink. Where before they were mostly deer, now they are sheep and cows. They waded into the water and were a constant danger for the mussels, who unluckily happened to settle to live near a drinking spot at the river's shallower parts.



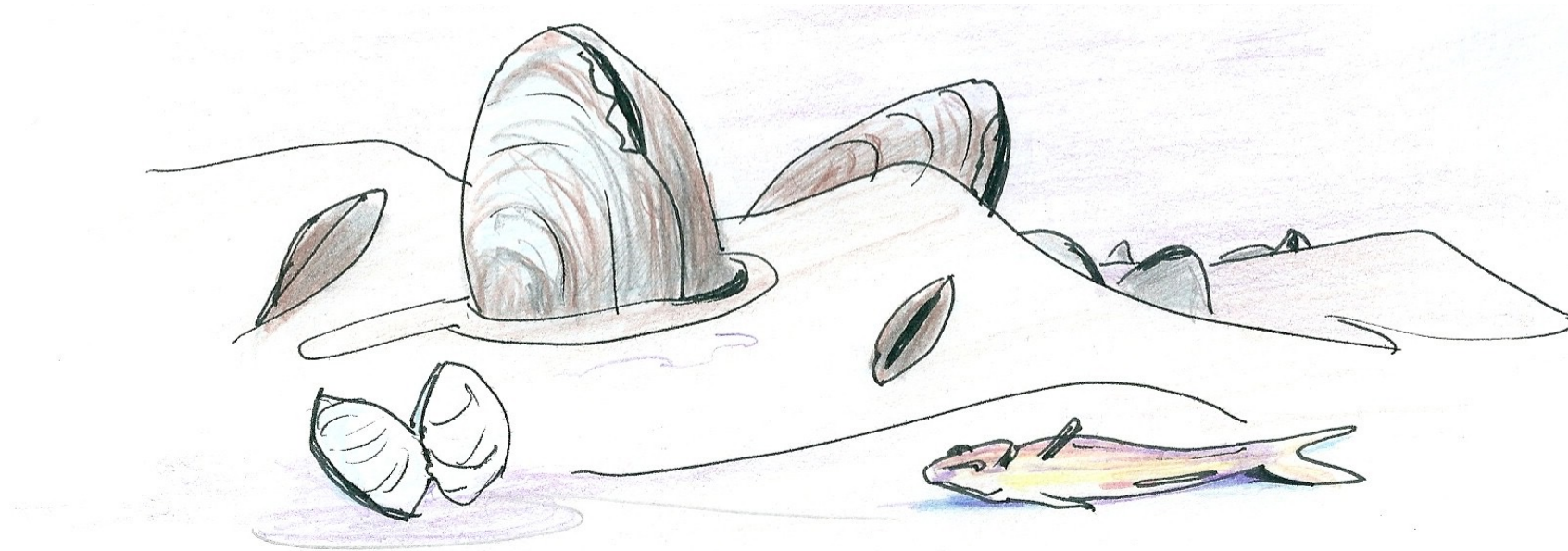
One day an unknown mussel came down the river at high speed. It tossed and turned with the current and crashed among us on the bottom of the riverbed. It had an easy time finding space to live, as the number of mussels in our habitat had become lower over the last years. Once it settled, the new mussel told a story about people who were working with great machines farther upstream of the river. The riverbed was being straightened and deepened, and rocks both small and large were being removed by destroying all appropriate living places for mussels. Many mussels had died as consequence, and our new mussel friend had barely managed to escape with the powerful current.




It only took a few days for our entire river to start to change. The water was murky, brown and tasted strange. The smell of the water also changed. Our entire world changed into a hazy and drab place. We couldn't see the stars sprinkle in the night sky. This was a time, when humans caused destruction to us river habitats. Every time the river became murky and dark from fine gravel, us mussels had no choice but to close our shells and wait for several hours for the sand storm to end...



But when we re-opened our shells, our entire living area was dirtier. The river bottom, including all rocks and stones, was covered in soft mud and clay. Us slightly bigger mussels could fight our way to less polluted ground, but all the youngest mussels were too small to move in the silt. Unfortunately, we never saw our mussels ever again.





Now we wait each year for the salmon and the trout to come to our river to spawn, so that they could take babyborn mussels to carry. Some years are good, but we have noticed less and less salmon and trout come to the river. We haven't lost hope though. We still let out thousands of little mussels into the water every year, but it is becoming more difficult for the little ones to find fish, on which gills they could attach to, or clean sand, into which they could burrow themselves.

When I was little, I had very little room to move, but now the situation is completely different. I could barely see my closest neighbours who live on the other side of the riverbed. Why? Partly because the river water quality has become much worse, but also because us mussels have fewer places where we can live. A tight jungle of water plants is not helping our situation.

I do not know how long we will survive without new mussel generations, which can keep our group existing in the rivers, when us older mussels pass away. The few salmon and trout we meet, tell us that many areas which in the past have been full of mussels have become completely uninhabited. On top of this, mussels have completely disappeared from many rivers.

However now is the time for great hope! Salmon and trouts tell of people who work to repair the damages being caused to mussels. People living close by can continue living their normal lives and working as forest and road workers, farmers or what ever they work as. But now, that they know of our existence, they can follow new rules which tell them that they cannot do anything anywhere in places where mussels live. We need their help to survive!

I think the worst is now over and nowadays we understand that everyone has the same right to be in nature regardless if they are a small mussel, a bird, a wolf or a human. Nature and animals have to be considered even more than before, and they need to be cared for.

Us mussels will also help, because we are filterers! It means, that while we filter ourselves nutrients from the river water, we similarly make the river water cleaner. We are a so-called umbrella species, which existence in the rivers ensures also other animal and plant welfare in the same living environment. The river is well!

We help and protect salmon, trout, otters and many others who depend on the river, including people. We help keep our rivers as good places to live. Hopefully you can help in the future! Respecting nature, animals and people makes the world a better place to live in.

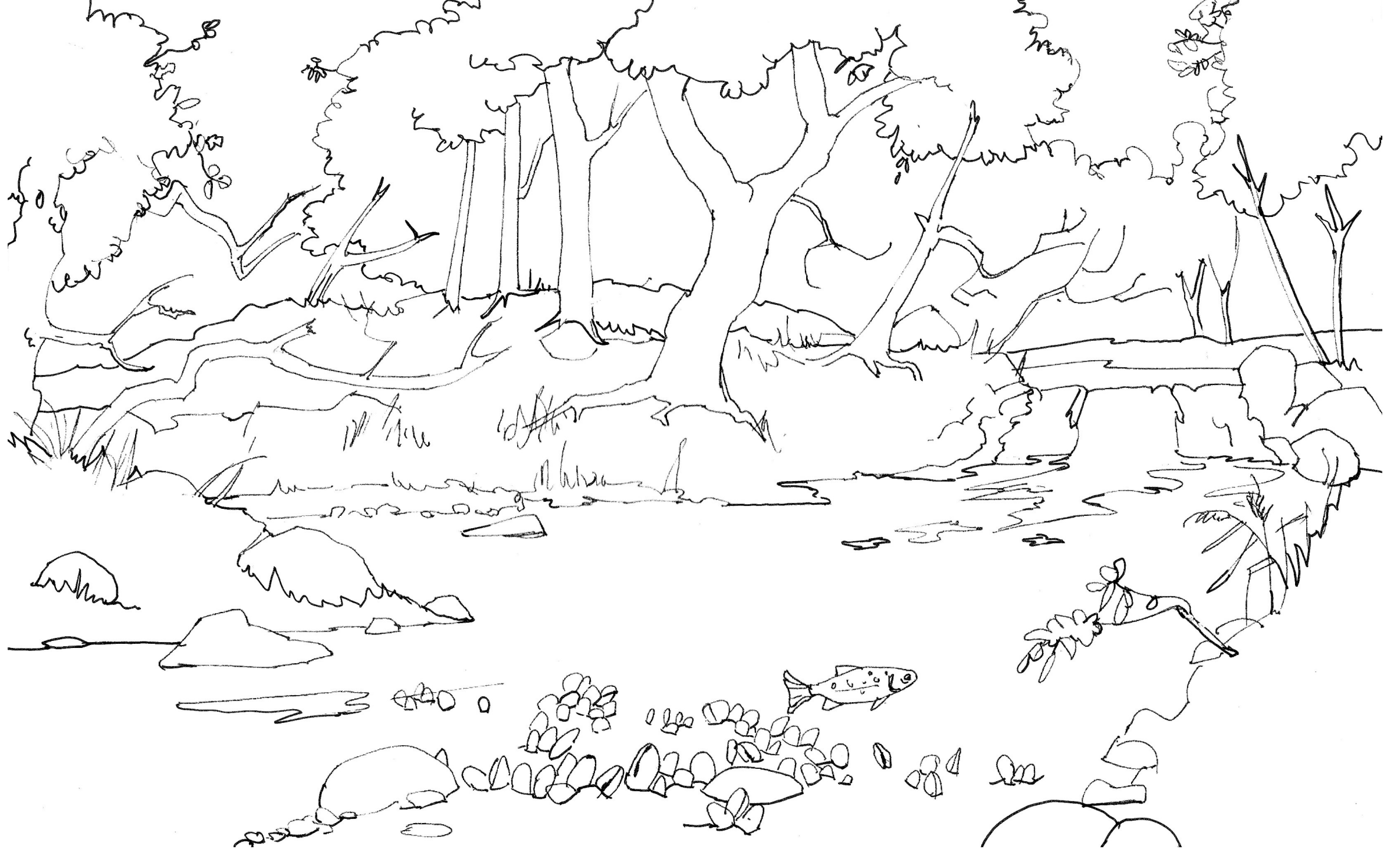


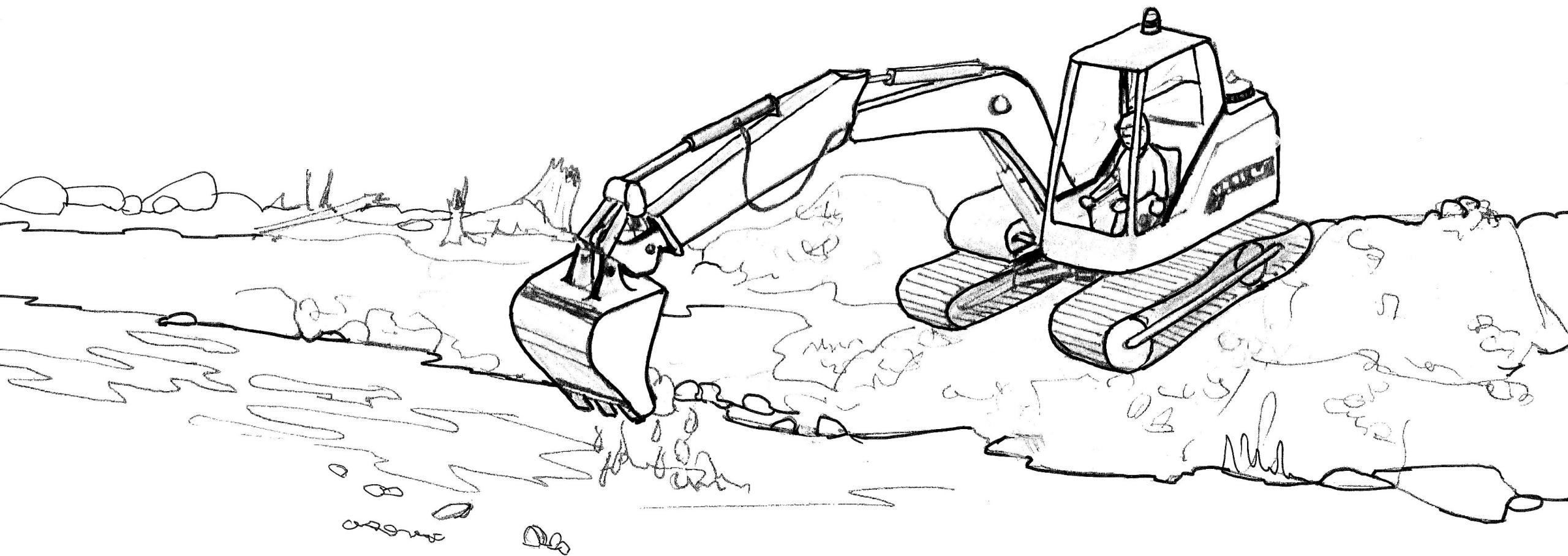


Notes

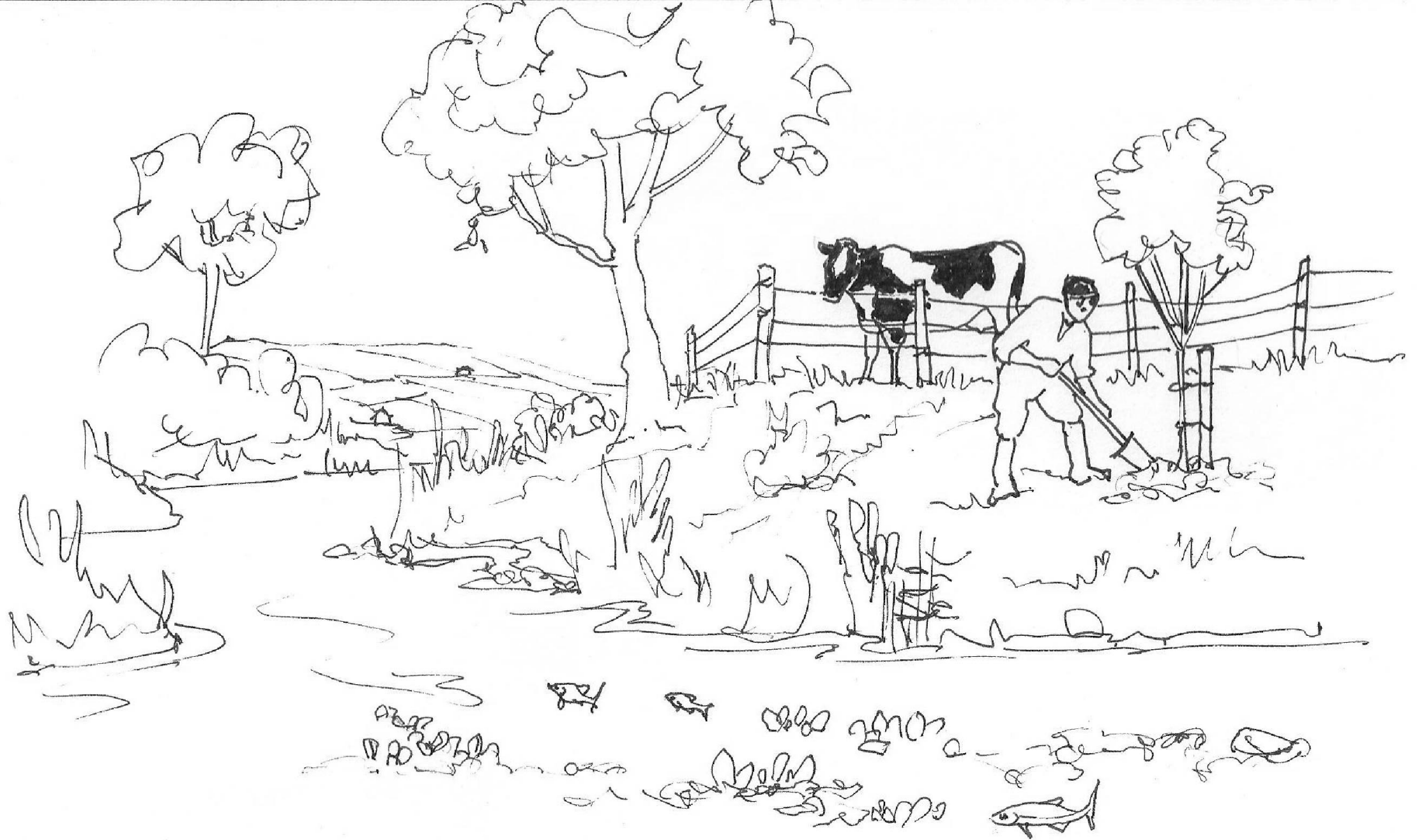














LIFE Revives 2020 -project FPM publication

In collaboration with Freshwater pearl
Mussel Practical Measures 2013 -project

Funded by the European Union LIFE-
Programme

Project Coordinator the University of
Jyväskylä

