

River ReScue 101 and River Litter Lab (RILL) workShops for Plastic Pirates

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RIVERSAVERS' HANDBOOK

Volume 2



Clean Tisza Textbook Series
E book, 2nd edition

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The white water lily (*Nymphaea alba*) only unfolds its petals when the air temperature exceeds 18-20 degrees Celsius. This ancient plant species has been around for a very long time—fossils show it already existed 130 million years ago, during the time of the dinosaurs. In the photo, a volunteer is removing the riverine litter floating next to the flower. The metal can will later be “reused”. Photo: Enikő Kubinyi

RIVERSAVERS' HANDBOOK, VOLUME 2.

This second volume of the Riversavers' Handbook is intended for educators and experts with a keen interest in rivers, especially those who have read the first book in the series. Published in E-book format and in the "Tisza languages", all of these books aim to further promote the upbringing of a river-friendly generation — regardless of national borders. The 5 Countries 1 River (5in1) and the River Lit(t)eracy and Riversaver Schools Network (FMIP) Erasmus+ programs use playful and engaging activities to deepen children's basic knowledge of rivers and plastic pollution, contributing to the cleanup of the heavily polluted Tisza River. Although the textbook series was designed primarily for lower primary school children, its informal and accessible tone makes it equally suitable for teachers and environmental educators working with upper primary or secondary students. If you enjoyed this volume, we invite you to explore the other free educational resources developed under the 5in1 and FMIP projects — available for download on the Tisztá Tisza (Clean Tisza) website.

www.tisztatisza.eu



Teachers from the Riversaver Schools are paying a personal visit to the Plastic Cup Initiative's floating exhibition, the FLEX. Photo: Attila Dávid Molnár

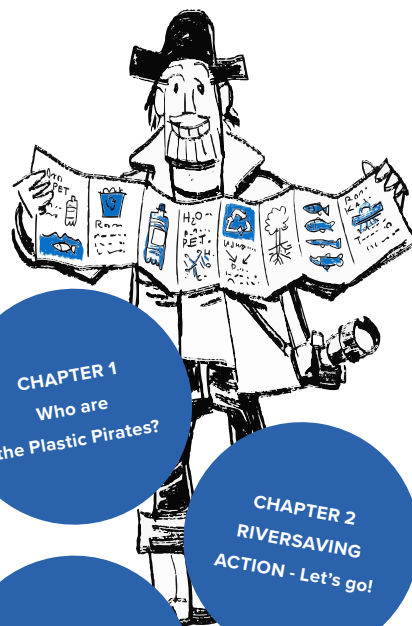
WELCOME ON BOARD!

INTRODUCTION and table of contents

Great to see you again! If you have read the first volume of the Riversavers' Handbook, you surely know how serious of an issue river pollution has become in our time – especially the vast amount of plastic and other waste that doesn't belong in our waters. We've decided to think long term and try to prevent the further pollution of our rivers. With the second volume of the Riversavers' Handbook our goal is to help raise a new, environmentally friendly, nature-oriented generation of Riversavers. This educational material was created through the cooperation of five Tisza countries — Ukraine, Romania, Hungary, Slovakia, and Serbia — with support from the European Union under the Erasmus+ programme. Our aim with this book is to spark interest in as many children and adults as possible — not just in rivers and other bodies of water, but also in plastics themselves. We want our readers to gain a basic literacy in plastics, which is essential in our modern, plastic-dominated world. To achieve this, we've designed a fun, experience-based, and interactive curriculum — and you're now reading its second volume. Just like in the first book, each chapter is divided into four parts. After the orientation sections of Treasure Map and Compass, comes Initiation Presentation, followed by some teamwork in Anchors Aweigh! and the Treasure Chest filled with the list of materials you'll need. In the previous volume, your students became volunteers and plastic sailors, and your school committed to the cause of protecting rivers. In this volume, you can all become plastic pirates, and your school can join the ever-growing ranks of Riversaver Schools. Thank you for your help on behalf of the river and all its creatures!

Wishing you good luck and great work,

Attila Dávid Molnár, Alíz Hajnal Bódiszné, Annamária Farkas, Zsuzsanna Bitter, and Zita Szöllösi-Sebestyén,
the educators of the 5 Countries 1 River and Riversaver Schools program, as well as the River Lit(t)eracy program of the Plastic Cup initiative



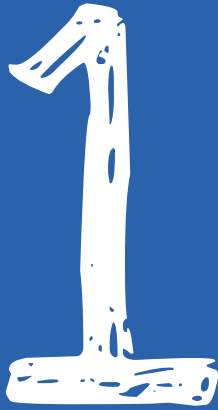
CHAPTER 1
Who are
the Plastic Pirates?

CHAPTER 2
RIVERSAVING
ACTION - Let's go!

CHAPTER 3
River Litter Lab 101

CHAPTER 4
River Litter Lab
ADVANCED

CHAPTER 5
Plastic Pirate Initiation



RIVERSAVERS' HANDBOOK

Volume 2, Chapter 1

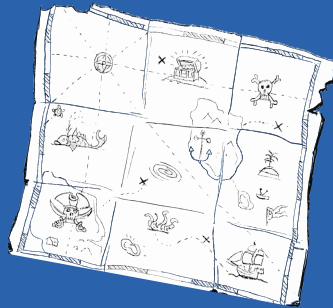
Who are the Plastic Pirates?

Find out what they do for our rivers, what they know about plastics, and how you can join their crew!



Riverine litter mixed with driftwood on the waterfront. Despite appearances, this waste is often cleaner than illegally dumped household trash because the river has washed and rinsed it. Experienced plastic pirates can tell at a glance which bottle goes into which bag. Fotó: Gergely Hankó

Where does the FIRST CHAPTER lead?



3. You decide together to also collect litter from the riverbank. The presentation will explain that you don't need to collect everything, only the waste carried, washed, and deposited by the river. If you come across illegal dump sites or hazardous waste, do not touch them — simply report them to the local authorities.

1. Your teacher recently guided the class through the first volume of the Riversavers' Handbook. You enjoyed it, so you downloaded this second volume including the [first presentation](#).

2. The river is an important place for you, and it's exciting to realize that you too can do something to protect it. Now, you're about to learn t and draw strength from he story of the plastic pirates.

4. You dive into organizing your own event. You choose the location, set the date for the community river cleanup — and with this, you take the first step towards becoming plastic pirates...

COMPASS



The Plastic Pirates turn the plastic that ended up in the river against pollution. Grab your compass, stay the course... and now you'll find out how!



As part of the Great Tisza Expedition, Csanád Ivánfi navigated the entire river by boat, from its source to its mouth. In this picture, he is paddling through the Serbian waters of the Tisza in a kayak made of plastic bottles. Photo: Attila Dávid Molnár

In 2013, four boats made from plastic bottles set out on the Tisza River. What began as an adventurous journey, grew into the [Plastic Cup Initiative](#), whose volunteers have been referring to themselves as plastic pirates from the very beginning. In recent years, the plastic pirates have uncovered **5,700 polluted areas across six countries** and removed nearly 400 tons of waste from the river. So far, **180 plastic bottle boats have been built. The largest one, called PETÉNYI**, is kept afloat by 4,000 one-and-a-half-liter plastic bottles. In 2015, another organization also began focusing on river cleanup in Germany. [Plastic Pirates Go Europe!](#) uses citizen science methods to monitor plastic pollution in 14 countries and works to preserve good water quality. The two organizations work together in perfect harmony. They agree that plastic is a durable material, not meant for single use, and has no place in rivers and seas.



The Plastic Pirate removes waste from the river — but collecting it is just the beginning. He or she has no intention of tossing it away, dumping it in a bin, or sending it to a landfill. River cleanup efforts only make sense if the waste collected is sorted and then reused to the greatest possible extent. After all, we aren't cleaning the water just to pollute the soil! At the heart of the Plastic Cup Initiative lies the principle of **reuse**. Guided by this, the Plastic Pirates saw an opportunity: single-use plastic bottles could be repurposed into ships for river cleaning! Thousands of bottles have already been given a second life, serving the cause of a cleaner river. If you agree with the first principle of plastic literacy — that plastic is **not single-use and has no place in the natural environment** — it's time to take action! Start preparing and organize your first river cleanup! In Volume 2 of the Riversavers' Handbook, you'll also address waste that has accumulated along the riverbanks — but only after careful planning. First, revisit Chapter 4 of Volume 1 and review the **safety guidelines** for working along the riverside. Always stay on dry land, keeping both feet firmly on the ground, and never attempt to retrieve waste floating in the water, even if it seems close to shore. In this chapter, you'll start learning the ins and outs of organizing **community river cleanup actions**. Let's get started!

PLASTIC IS DURABLE
- IT'S BETTER WHEN USED
MULTIPLE TIMES



What to collect:

only and exclusively riverine litter carried, washed and deposited by the river — mostly plastics

What not to collect:

waste from illegal riverside dump sites, improperly discarded household or infectious waste

Where to collect:

only and exclusively along the riverside, in the floodplain, in safe locations next to the river; but maintaining a safe distance from the water

Into what and how to collect:

Wearing gloves and moving as a team, collecting glass, plastic, metal, and non-recyclable waste into different colored bags.

Where to place the loot:

in a designated place on the shore, from where the garbage truck will be able to pick it up

Best locations for river cleanup:

near the school, on an adopted shoreline, where we had previously successfully carried out waste mapping

Who to tell:

to children and parents, if necessary, to whoever is responsible for the area (e.g. water management), to the waste management partner, and to the public service provider

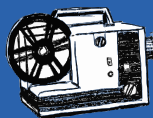
What to prepare for:

a challenging hike, in addition to the usual equipment (clothing, food, drinking water) bring personal hygiene supplies, gloves, and bags

www.petkupa.hu



INITIATOR



It's time for the sailor's initiation! If you're ready to learn something new, click on the frame to the right to open the [PRESENTATION](#) Summarizing Chapter 1.



If you are done with the presentation, let's watch a movie: an hour-long film about the history of the pet pirates and the Plastic Cup Initiative.

CLICK ON THE [VIDEO!](#)

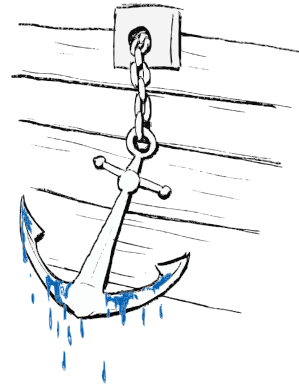
YOU CAN ALSO WATCH THE FILM IN [ENGLISH.](#)



ANCHORS AWEIGH!

Group PLAYER TASKS

If you have watched the initiation presentation, it's time to test your knowledge! The chapter's main message is that plastic pirates use pollution itself to fight against pollution. Anchors aweigh, and let the adventure begin! Three tasks await you: a message in a bottle with related quizzes, an indoor activity, and an outdoor exploration. The message in a bottle along with the quizzes is about the plastic pirates and serves to check the factual knowledge acquired(1.1). During community river cleanup actions riverine litter is collected selectively in color-coded bags; the indoor activity helps practice this through photos and interactive group activities (1.2). The outdoor exploration is a field survey, where you explore the area selected for river cleanup (1.3). Don't worry if there isn't much pollution in the given area! The main goal is to leave the area free of plastic after the cleanup, and to identify key locations such as meeting points, waste collection spots, and so on during the field survey. On the following pages, you will receive help for all three tasks - and you can always revisit the presentation as well. By clicking on the QR code or link of the Initiation Presentation, you will also find the slides related to the tasks with detailed descriptions. We wish you an exciting game and good luck with the tasks!



1.1. MESSAGE IN A BOTTLE

Read the message in a bottle, then form teams, and click on the quiz! Now we'll find out who paid attention :-) ...

For more information:
NEXT PAGE

1.2 INDOOR ACTIVITY

Form teams, pay attention to the pictures in the presentation, then get ready to play! Get ready for some riversaving!

For instructions,
TURN TO THE DETAILED
DESCRIPTION.

1.3. OUTDOOR EXPLORATION

Grab a paper, pencil, smartphone, and head to the riverbank! Measure, calculate, draw!

For full task details,
TURN TO THE DETAILED
DESCRIPTION.



Riverine litter carefully sorted by Riversavers. The polystyrene (top left) goes into the municipal waste bag and ends up in the landfill. The PET bottles (top right) and the metal cans (bottom left) belong in the selective collection bag. We handle light bulbs and other fragile waste separately, for example, by placing them in a box - all the while being careful not to let the shards cut anyone. Photos: Zsófia Kabarcz



Among the riverine litter, there are many discarded and abandoned plastic toys. Rubber ducks excel at traveling long distances; after the Friendly Floatees shipwreck in the Pacific, some even made it to the Atlantic Ocean. The ducks shown in the picture were retrieved from the Tisza. If it hadn't been for the efforts of the Riversavers, they would have swum until the Black Sea. Photo: Zsófia Kabarcz



Hello! You are reading the first message in a bottle of the second book. This message is about a dedicated captain who sailed across the Pacific Ocean on a boat made from plastic bottles (!). David de Rothschild decided at a young age to use his wealth and influence to fight against plastic pollution. The sailboat named *Plastiki* was kept afloat by a total of 12,500 two-liter recycled plastic bottles. The boat was powered only by renewable energy, mainly the sun and wind. In 2010, under Captain Rothschild's command, the *Plastiki* traveled 8,000 nautical miles from San Francisco to Sydney. The *Plastiki* served as one of the inspirations for the Plastic Cup Initiative to start cleaning the Tisza River using plastic bottle boats in 2013. Captain Rothschild himself was inspired by a Norwegian explorer and polymath, *Thor Heyerdahl*, who set out on the Pacific Ocean in 1947 on a wooden raft. He wanted to prove that Sea Peoples were capable of crossing the ocean even in prehistoric times. A book and film were also made about the legendary expedition of the *Kon-Tiki* raft, which the *Plastiki* name pays homage to, further proving that with teamwork, nothing is impossible.

IF YOU ARE DONE READING, HEAD TO THE QUIZ IN THE INITIATION PRESENTATION!





1.2. INDOOR ACTIVITY

GETTING READY FOR SELECTIVE RIVERINE LITTER COLLECTION

During community river cleanup actions, we strive to return most of the collected waste to the waste cycle. For this, selective collection is necessary, which requires preparation, care, and attention. If you find your class to be too young for this (e.g., lower primary), then leave the sorting to the adults. However, if the students are older and skilled, they can do it! In the presentation, different types of riverine litter will be displayed on separate slides. What they have in common is that they were all washed ashore by the river – however, which bag they end up in is crucial. During the river cleanup, we will collect waste into three different colored bags. One will be for metal and plastic; the other for glass; and the third for household waste not suitable for reuse. Designate three corners in the classroom; each corner should represent a different colored imaginary bag! Then start the [presentation](#). You will see different riverine litter in each picture. Point to the corner (towards the imaginary bag) where you think the given waste belongs! Discuss why selective collection is necessary. [Watch this video](#) for tips on collection.



1.3. OUTDOOR EXPLORATION

FIELD SURVEY OF THE RIVER CLEANUP ACTION

Go to the riverbank and find a section suitable for cleaning! It doesn't matter if there's not much riverine litter, the main goal is to leave the area plastic-free after your action. For the field survey ask for permission from the parents. Watch the weather! Do not go under the trees in windy, rainy weather, as the dried branches can break off in the strong wind! Wear bright, visible clothing and move in groups. Only look for waste carried and deposited by the river, and only on the shore. The ideal riverside section is accessible by a short walk from a road or railway; can be cleaned up in one day; the collected waste can be transported by vehicle; has a suitable meeting point, enough shade; the vegetation is not too dense; and the riverbank is not steep. Plan with realistic distances and consider the way back as well. If you haven't made a waste map of the area (for waste mapping see [Riversavers Handbook](#), Volume 1, Chapter 3), then survey the area now! Mark the polluted areas; discuss where the meeting point will be, where you will gather; where you will place the full bags; where you will rest, wash up, and eat. Once the map is ready, don't forget to admire the river a little :-)



Plastic Pirate returns from the floodplain with the day's loot.
Photo: Vanda Molnár

TREASURE CHEST

TOOLS and ACCESSORIES

- ☐ INTERNET, PROJECTOR,
- ☐ COLOR-CODED BOTTLE CAPS FOR EACH GROUP
- ☐ CLIPBOARDS
- ☐ BLANK SHEETS OF PAPER
- ☐ COLORED MARKERS
- ☐ PET TABOO CARDS






2

RIVERSAVERS' HANDBOOK

Volume 2, Chapter 2

RIVERSAVING ACTION - Let's go!

After all the preparations, the class is ready to roll and rise to the challenge against plastic pollution!

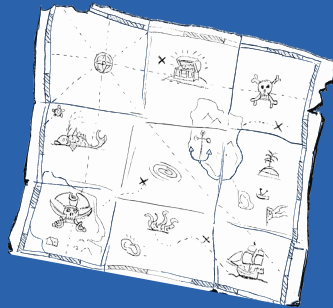




The receding flood waves leave behind a lot of plastic in polluted rivers.
Plastic Cup Initiative volunteers, equipped with protective gloves, set out to collect riverine litter.
Photo: Vanda Molnár

TREASURE MAP

Where does the SECOND CHAPTER lead?



3. You review the tasks together. You make sure that the entire community (school, municipality, waste management company, water authority, national park, etc.) knows about your community river cleanup action in advance. You pack the backpack and check the weather forecast. Later that evening, Dad packs some hand sanitizer just in case... ;-)

1. After you have already started the preparation and understood the difference between riverine litter and trash discarded on the shore, your teacher opens the second presentation.

2. Excitement kicks in, and you're ready to organize your own action. Some can ask their parents for colored bags, or a company might offer support to help you get gloves and safety goggles. If there is no polluted river section nearby, tidy up the adopted riverbank!

4. On the big day, you'll receive bags and protective gear, and you will start the river cleanup action as a team, while looking out for each other. At the end, you will save a few bottle caps for later (it will be important ;-)), and you will happily look at the clean, plastic-free riverbank...

COMPASS



A plastic-pirate style river-saving action is more than a haphazard garbage collection. With us, plastic gets a second chance. Let's see how!



Volunteers remove the caps one by one from the bottles found on the riverbank. Later, they sort them into different colors and wash them to make reuse as easy as possible. Photo: Szilvia Dóra

Water makes up 60% of the human body, and an even larger proportion of the body of a newborn baby: 75-78%. **To the rivers, we owe nothing less than our lives.** Every plastic pirate knows how much the rivers help us, so doing something for the rivers fills them with joy. In the second chapter, you take another step towards becoming plastic pirates yourselves! **You participate in a river cleanup** and collect waste that the river has swept away from somewhere and then washed ashore. Every piece of litter you find has its own story. If we reuse the waste, this story becomes even more interesting and special. During river cleanups, we collect waste selectively because plastic can be more useful if we give it a new life through recycling. Let's see how!



Community river cleanups are always exciting adventures. If we follow the rules, at the end of the day everyone can return home dirty - but safe and sound -, and the river can rest cleaner. What should we pay attention to? Firstly, we only collect on the riverbank, in the floodplain, with both feet on dry land. We do not go into or lean over the water! Secondly, we only collect riverine litter carried, washed, and deposited by the river! We don't deal with the illegal dump sites created by careless people, we simply report them to the municipality. Thirdly, we always wear protective gear during river cleanups. Our most important protection is the team, we never collect alone! Gloves are important part of our protective gear, but also remember to bring shoes with serrated soles, protective glasses for the areas with dense undergrowth, and mosquito repellent. Next, following plastic pirate traditions, we collect waste into color-coded bags. We work with three different colors. Let's say that the store only sold red, white, and green bags. In this case, bottles go in the red bag, plastic and metal in the white, and all leftovers in the green. Lastly, we make sure that the waste is reused. We make sure that the red (glass) and white (plastic and metal) bags go into the recycling bin. The green (household, non-recyclable waste) bag can go in the trash. After the basic rules, let's see what are the most important steps of a successful community river cleanup action!

PLASTIC WASTE DESERVES A SECOND LIFE



Get ready!

Get the supplies, inspect the site, and check the weather.

Communicate!

Inform the national park, water management, local government, hunting and fishing association about our action.

Get in sync!

Before the big day, discuss what to expect; practice using the color-coded bags

Work in a team!

Be precise, gather the equipment, form teams

Take care of each other!

Collect trash carefully and cheerfully! Make sure to always be in sight and within hearing distance of each other

Do a thorough job!

Make sure that the selective bags and glass were transported separately. Set aside the nicer PET bottles and clean bottle caps from the loot - they will come in handy later ...

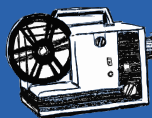
Spread the word!

Take photos, write a report, and upload it to the school's website, and/or share it on www.tisztatisza.eu

www.petskupa.hu



INITIATOR



It's time for the sailor's initiation! If you're ready to learn something new, click on the frame to the right to open the [PRESENTATION](#) Summarizing Chapter 2.



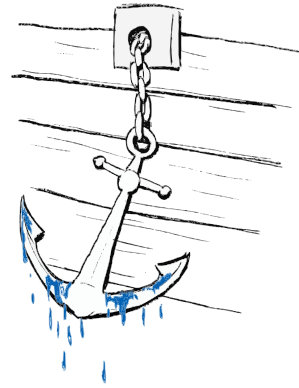
If you're done with the presentation, let's watch a movie! In the 5 Countries 1 River film Series, you can see several Riversaver actions, subtitled in all of the "Tisza languages".
CLICK ON THE [VIDEO!](#)



ANCHORS AWEIGH!

Group PLAYER TASKS

Anchors aweigh, and let the adventure begin! As usual, three tasks await you: a message in a bottle quiz, an indoor activity, and an outdoor exploration. The message in a bottle shows how many strange things can drift on the waters, including rubber ducks (2.1). The indoor activity is designed to prepare us as best as possible for the community river cleanup action – this way, everyone will know what their task will be in advance. If you're preparing for a short, one- to two-hour action, the program is simple. But if you're planning a full-day event, you'll need to consider not just the waste but also rest, refreshments, and food (2.2). We have prepared a schedule template for the outdoor community river cleanup action (2.3). Feel free to deviate from it, modify it as you like! It's okay if there's little waste on the riverbank! Make sure to only collect riverine litter, as this has already been washed and rinsed by the river. On the following pages, you will receive help for all three tasks - and you can always revisit the presentation as well. By clicking on the QR code or link of the Initiation Presentation, you will also find the slides related to the tasks with detailed descriptions. Are you a teacher who still has some remaining questions? Or you simply would like to chat with an experienced Riversaver before the action? Contact us through our website: www.tisztatisza.eu! We wish you an exciting game and lots of success with the tasks!



2.1. MESSAGE IN A BOTTLE

Read the message in a bottle, then form teams, and click on the quiz! Now we'll find out who paid attention :-)

For more information:
NEXT PAGE

2.2 INDOOR ACTIVITY

Form groups and get ready together for the tasks involved in the river cleanup action.

For instructions,
TURN TO THE DETAILED
DESCRIPTION

2.3. OUTDOOR EXPLORATION

If you have parental permission and have packed your backpack, the river cleanup can begin!

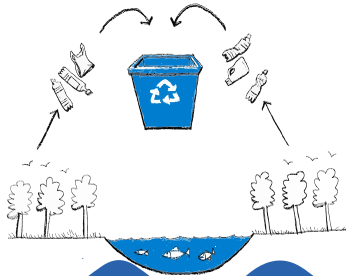
For full task details,
TURN TO THE DETAILED
DESCRIPTION



Hi Everyone! This is the second message in a bottle in this book – filled with items that ended up in the water and then went on a peculiar journey. Our first example is [the Moses basket](#). According to legends, a number of mythical heroes escaped on the waves in woven reed baskets like this one. Moses was set adrift on the Nile, Romulus and Remus on the Tiber, Sargon on the Euphrates, Krishna on the Yamuna River, and Perseus on wooden raft on the Aegean Sea. The longest verified case of castaway survival is linked to a Salvadoran fisherman, [José Salvador Alvarenga](#), whose fishing boat was swept away by a storm off the coast of Mexico in November 2012. Alvarenga drifted for 438 days before reaching the shores of the Marshall Islands on the other side of the ocean in January 2014. A storm was also the reason why, in 1992, a container was swept overboard from a cargo ship, releasing [29,000 yellow rubber ducks](#) and other floating toys into the sea. The first ducks reached the shores of Alaska, many reached Hawaii, and there were also some that were fished out of the Atlantic Ocean. The incident inspired both the book *Moby Duck* and the website [PlasticAdrift.org](#), which illustrates how ocean currents weave a network across the world's seas.

IF YOU ARE DONE READING, HEAD TO THE QUIZ IN THE INITIATION PRESENTATION!





2.2. INDOOR ACTIVITY

PREPARING FOR THE COMMUNITY RIVER CLEANUP ACTION

Form at least four groups at random for the rehearsal of the riversaving action! You can use the “bottle cap method” for this (see method description in Riversavers’ Handbook, Volume 1, Task 1.2). Once the groups are formed, each should be assigned a specific task. There should be an organizing team, a waste management team, a catering team, and a communications team. Next, each group should think about how they would prepare for an event, what kinds of problems might arise during a river cleanup action, and how they would solve them. During group work, use the world café method (see Riversavers’ Handbook, Volume 1, Chapter 5). When you are ready, each group should present their ideas to the others!

Next, [download the schedule template](#) for community river cleanup actions. The program is divided into two parts: preparations and the outdoor program itself. Discuss what is needed for your event. Make sure to check if you’ve done all the necessary preparations (parental consent, protective gear, acquiring bags, etc.). Once you are ready with the preparations, move on to the action itself! Form teams again! Each team should name itself: come up with a fantasy name. Then each team should review the schedule and give a presentation to the others about their tasks. Ask questions, have discussions! The rehearsal was successful if everyone knows what to bring to the action, when and where to be, and what their tasks are. If you’re ready and still have time, check out videos [about river cleanup actions – here!](#)

2.3. OUTDOOR EXPLORATION

COMMUNITY RIVER CLEANUP ACTION

Before you head out, pack your backpack and check the weather. Safety first, so cancel the event in case of windy-rainy-stormy weather! Arrive at the meeting place on time. Listen to the briefing, where you will learn where the bags and protective gloves are, where you can wash up, go to the bathroom, or get refreshments, how long the river cleanup will last, and when the breaks will be. During the briefing, indicate if someone has an allergy, for example to bee stings - in such cases, special caution is warranted! After that, all four teams (organizers, waste management, caterers, and communications) will introduce themselves in a maximum of 2 minutes. After roll call, most of the class can start collecting - only two people should be left behind at the meeting point to supervise the equipment.

During waste collection, stay within sight of each other, move together, and wear highly visible, colorful clothing. When the time allocated for collection is up, report to the meeting point and do a roll call to check the headcount! Once everyone has returned from the collection, follow the instructions of the catering group to freshen up, eat, drink, and rest! Discuss what things could be improved. Try to solve problems on the spot! Once the work is done, place the bags full of waste at the designated collection point and clean up after yourselves. Don’t forget to keep a few nice, colorful bottle caps - they will come in handy at the River Litter Lab! After packing up, do a final roll call, take a team photo with the filled bags, and then head home – a well-deserved rest awaits you! :-)





The litter picker is very helpful when we want to maintain a safe distance from the waste. Photo: Vanda Molnár

TREASURE CHEST

TOOLS and ACCESSORIES

- ☐ INTERNET, PROJECTOR
- ☐ COLOR-CODED BOTTLE CAPS FOR EACH GROUP,
- ☐ CLIPBOARDS, BLANK SHEETS OF PAPER
- ☐ COLORED MARKERS,
- ☐ PET TABOO CARDS
- ☐ TRASHBAGS, GLOVES, FIRST-AID KIT
- ☐ TOOLS LISTED BY YOU





The signs of a successful community river cleanup action: full bags, dirty shirts..., and of course, big smiles :-)

Photo: Boglárka Rosta



The RILL, or the River Litter Lab, traveled the Tisza River Basin as part of the 5 Countries, 1 River project.
The picture was taken in Serbia, in Magyarkanizsa. Photo: Katalin Vészity



RIVERSAVERS' HANDBOOK

Volume 2, Chapter 3

River Litter Lab 101

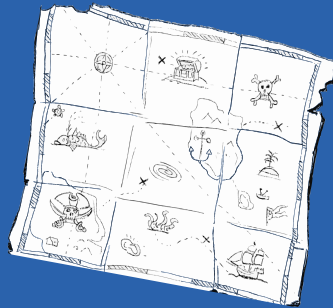
Time to find out how a discarded plastic bottles and plastic bags can be transformed into useful and durable everyday items!



Necklaces and earrings from bottle caps! The RILL, or the River Litter Lab, showcases exciting workshops that demonstrate how many things can be made from plastics with a bit of creativity. Photo: Viktória Doró

TREASURE MAP

Where does the THIRD CHAPTER lead?



3. Most of you knew about microplastics, so it doesn't surprise you that plastics can be dangerous. You will find out why pouring hot tea into a plastic bottle might not be the best idea, why loose tea is better than bagged, and why it's not safe to use just any plastic container in the freezer!

1. The Riversaver operation has successfully come to an end. You have plenty of caps both from the river plastic bottles - and of course from home. Now you sit down and eagerly watch the [third presentation.](#)

2. Most of you are hearing about the River Litter Lab, or RILL, for the first time. You would love to immediately dive in, but the book advises caution!

4. After the "mandatory training" ;-) it's finally time for the RILL workshop! At first, you will only work with scissors, cutting tools, paint, and brushes, but if you successfully overcome this obstacle, you'll be ready for the next chapter and the next challenge: melting!

COMPASS



A handful of caps fished from the river, a few bottles rescued from the bin by the snack bar, and some stray plastic bags. How will this become anything? Grab your compass and stay the course!



One of the stops of the traveling exhibition River Litter Lab in Magyarkanizsa, by the Tisza river.
Photo: Erzsébet Huszta

Humanity has been using wood since ancient times. For millennia, our beds, chairs, and tables were made out of wood. Ask a passerby on the street how many types of wood they know! **They can surely list 5-10 types.** We can list much fewer types of plastic, even though in many places the bed, chair, and table are made of plastic. **Polyethylene, polypropylene, and PET** are the most common plastics, yet few people know them by name. This is because humanity only began to get acquainted with plastics around 1870, and large-scale production didn't start until the mid-20th century. Even though we use a lot of plastic, our knowledge about them is very incomplete. This is what the **River Litter Lab** (RILL) sets out to change in Chapter 3. In recent years, it has introduced thousands of children to the secrets of plastic revival at 50 locations across 6 Danube countries!



Everyone has seen pictures of oil spills in the ocean. Plastic pirates know that plastic pollution in rivers has a lot in common with oil spills in the ocean. First of all, **all plastic is made from petroleum**, which formed from the remains of plants and animals that existed millions of years ago. The second similarity between oil spilled into the sea and plastic waste in rivers is that they both pose serious threats. The third basic rule of plastic literacy is this: **plastics can harm plants, animals, and people alike**. A plastic bottle crunches under the paws of a stealthy fox. A bag drifting in the water wraps around a stork's neck. A sensitive eagle abandons its nest, disturbed by glittering bottles popping in the heat of the Sun all across the riverbank. But the real danger is harder to see. Under sunlight, plastic bottles break down into tiny fragments — microplastics. These particles end up in the water, are eaten by fish, make their way into the human body as well. Should we panic and ban plastics altogether? Not at all. **The real solution is to understand plastics and learn how to use them responsibly**. That's where the plastic pirates come in. They say no to single-use plastics and work to ensure that every piece of plastic gets a second life — as a durable, useful object. Chapter 3 dives into how to make the most of plastic's advantages while avoiding its risks. Let's explore the secrets of the **River Litter Lab** — starting with the basics!

PLASTIC, IF HANDLED POORLY,
CAN HARM LIFE AND POSE HEALTH RISKS



Hot tea in a plastic bottle

sudden heat can cause the additives in plastics to leach out.



Poor quality plastic container in the freezer

in very cold weather, some plastics can become rigid and shatter into splinters.

Plastic bag at a campfire

when exposed to open flame, the plastic burns with a large flame and toxic smoke, leaving behind polluting ash

Plastic bottle in the nature

over the course of several years, plastic that has entered the environment starts to break apart and eventually crumbles into smaller particles

Plastic in the recycling bin

recycling is important; but it has a high energy demand and often encourages consumption

Microplastics in tea

microplastic particles can get into the drink from the teabags

Plastic and plastic pirates

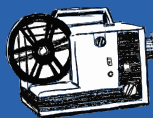
people who know plastic well, say no to single-use items

Plastic bottles and bags in the RILL

plastic pirates make durable and useful objects from single-use plastics and put them to work for the benefit of the environment

www.petkupa.hu

INITIATOR



It's time for the sailor's initiation! If you're ready to learn something new, click on the frame to the right to open the [PRESENTATION](#) Summarizing Chapter 3.



If you're done with the presentation, let's watch a movie! In the 5 Countries 1 River film Series, we will visit several River Litter Labs all over the world, subtitled in all of the "Tisza languages."

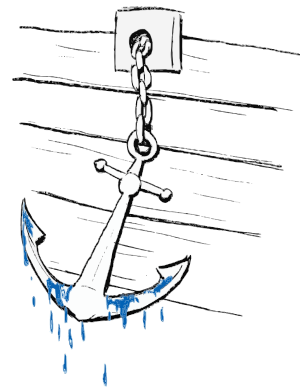
CLICK ON THE [VIDEO!](#)



ANCHORS AWEIGH!

Group PLAYER TASKS

Anchors aweigh, and let the adventure begin! Three tasks await you: a message in a bottle with a related quiz, and two practical workshop tasks. After the message in a bottle (3.1), it's time for a fun plastic identification task (3.2)! Look for the individual identification marks on the washed and dried plastics collected from your home! (A magnifying glass might come in handy for the work.) After this fun plastic identification, it's time for the plastic revival 101 – making durable and useful items from a plastic or detergent bottles (3.3). We'll bring simple examples, and use simple tools. In this chapter, we won't heat or melt the plastic, just reshape and transform it. For the tasks, you will need clean, washed, and dried yogurt cups, plastic, detergent, and dishwashing liquid bottles. We'll shape the plastics with scissors and other cutting tools, and make them pretty with a brush and acrylic paint. Every session should be preceded by a little accident prevention guide (have a band-aid handy, for example); but if you follow the guides and use the scissors wisely, there will be no problem. First, work in groups, then encourage each other to work individually as well! Set aside the most beautiful items for exhibition purposes! On the following pages, you will receive help for all three tasks - and you can always revisit the presentation as well. By clicking on the QR code or link of the Initiation Presentation, you will also find the slides related to the tasks with detailed descriptions.



3.1. MESSAGE IN A BOTTLE

Read the message in a bottle, then form teams, and click on the quiz! Now we'll find out who paid attention :-)

For more information:
NEXT PAGE

3.2 FUN PLASTIC IDENTIFICATION

What is the soft drink bottle made of, and what kind of plastic is the yogurt cup? Time to find out!

For instructions,
TURN TO THE DETAILED
DESCRIPTION

3.3. PLASTIC REVIVAL 101

Reviving PET bottles and ethylene flasks in a creative way.

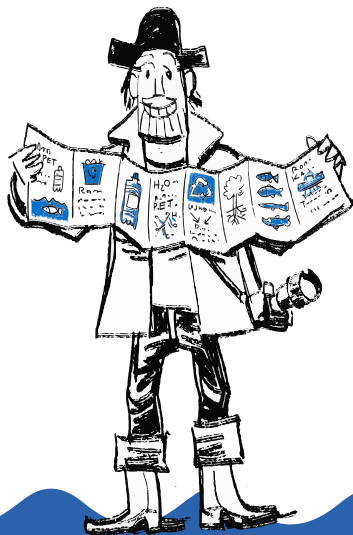
For full task details,
TURN TO THE DETAILED
DESCRIPTION



Hi Everyone! This is the third message in a in this book, telling the story of how African elephants had almost been hunted to extinction by the mid-1800s. Consequently, the price of ivory – which was used for piano keys and billiard balls – skyrocketed. In 1863, a New York company offered a \$10,000 reward to anyone who could find a material to replace ivory and make good quality billiard balls. 150 years ago, \$10,000 was a huge amount of money — today, this grand prize would be equivalent to more than half a million US dollars. The advertisement caught the interest of John Wesley Hyatt, who patented one of the first plastics in 1870. However, the celluloid billiard ball was not perfect, as it often exploded upon impact — so in the end no one won the \$10,000 grand prize. Nevertheless, the new plastic allowed for the production of excellent combs, buttons, shirt collars, and light-sensitive photographic plates, providing Mr. Hyatt with a respectable livelihood for the rest of his life.

IF YOU ARE DONE READING, HEAD TO THE QUIZ IN THE INITIATION PRESENTATION!





3.2. FUN PLASTIC IDENTIFICATION

Get everyone to bring two or three carefully washed and dried plastic items from home! The individual contributions can be anything: a soft drink bottle, a yogurt cup, a fabric softener container, or even a shampoo bottle. In class, place the clean and dry plastics into a bag, and before examining them, download and read the [Plastic Guide!](#) Once you've done that, take a close look at the packaging materials you brought from home. Look for the numbers and abbreviations (PET, PE, PP, PS) that reveal the plastic types. Sort the plastic items from home into groups based on their material type. Then form as many groups in class as there are distinct types of plastic. Each group should choose one type of plastic, then review its properties. Once you're ready, present it by personifying the material: what makes you special, what are your advantages, and why do people choose to buy you? (For example, PET – identification number: 1 – is shiny and transparent.) Don't forget to mention the disadvantages too (like PET doesn't handle heat well!)



3.3. PLASTIC REVIVAL 101

If you think about it, you don't need any special tools or training to turn single-use plastics into something durable and useful. Take the plastic pirates' boat, for example: it's made entirely of plastic bottles and a bit of wood — and it still floats! Use the same simple logic during the basic plastic revival activities. At this stage, do not melt the plastic under any circumstances — just use scissors, cutting tools, paintbrushes, and maybe a little glue! A bit of transformation and creativity is all it takes to turn a soda bottle into a flower pot, water gun, or rocket. Watch the videos below for inspiration — or come up with your own brand-new ideas! Set aside the most successful creations for exhibition or demonstration purposes.

[Making Tools from PET Bottles](#) (PET pot, pencilcase, insect hotel)

[Further inspiration](#)





TREASURE CHEST

TOOLS and ACCESSORIES

- | | |
|---|---|
| <input type="checkbox"/> EMPTY AND CLEAN PET BOTTLES | <input type="checkbox"/> GOOD INTERNET CONNECTION |
| <input type="checkbox"/> EMPTY AND CLEAN DETERGENT
AND FABRIC SOFTENER BOTTLES | <input type="checkbox"/> GOOD MOOD :-) |
| <input type="checkbox"/> TOILET PAPER ROLLS | <input type="checkbox"/> PET TABOO CARDS |
| <input type="checkbox"/> DETERGENT BOTTLES | <input type="checkbox"/> FISHING LINE |
| <input type="checkbox"/> BOTTLE CAPS IN VARIOUS COLORS | <input type="checkbox"/> BOTTLE CAPS |
| <input type="checkbox"/> ACRYLIC PAINTS, MARKERS | <input type="checkbox"/> THICK NEEDLE |
| <input type="checkbox"/> NAIL AND PAPER SCISSORS BOX | <input type="checkbox"/> SCISSORS |
| <input type="checkbox"/> CUTTER, FIRST-AID KIT | <input type="checkbox"/> GLUE |
| | <input type="checkbox"/> BRUSH |



This shred was made with a powerful machine from the bottle caps collected from the river. Photo: Vanda Molnár



With the arrival of autumn, the dense floodplain forest dresses in various shades of yellow and red. Photo: Krisztina Pálvölgyi




4

RIVERSAVERS' HANDBOOK

Volume 2, Chapter 4

River Litter Lab ADVANCED

It's time to find out how you can change the shape of plastics and give them a completely new purpose.

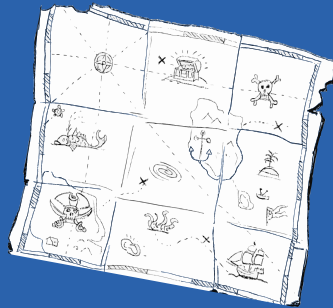




Every river-saving object has its own story. The raw material for this yellow ruler was carried by the river all the way to Tiszafüred, where the plastic pirates pulled it from the water. Then it was carefully shredded into tiny pieces and shaped into a ruler at the RILL.
Photos: Enikő Kubinyi, Csanád Ivánfi, Vanda Molnar; www.riversaver.eu

TREASURE MAP

Where does the FOURTH CHAPTER lead?



3. Everyone understands and accepts that plastic processing (on an advanced level) involves melting. It is not advisable to experiment with such things at home! Fortunately, with a few donations, the school's RILL soon collects a used iron, a fan, and an old contact grill.

1. The first RILL workshop was quite a success: bottle caps turned into a curtain, PET bottles became insect hotels, and detergent containers were transformed into small garden shovels. You are curious about what's next... so you open the [fourth presentation!](#)

2. You have already learned that plastics can freeze - for example, a lower quality garden furniture can shatter into pieces during a frosty winter. But the fact that plastic can be melted under workshop conditions is new to many!

4. Carefully read the safety warnings, then the work can begin! Bottle caps are transformed into medals and bracelets, plastic bags become bags and aprons.

COMPASS



The River Litter Lab is a lifeline for the river. The objects made here remind us that not only the river, but plastic also deserves a second chance. Grab your compass and stay the course!



A bracelet made from river plastic in front of the first boat made from recycled plastic, symbolizing unity. Photo: Boglárka Rosta

Every volunteer who has participated in the river cleanups of the Tisza Plastic Cup Initiative for **at least three years** receives a very special gift as a token of appreciation. A bracelet made from recycled materials, adorned with three charms symbolizing three years of service — each charm crafted **from plastic waste found in the Tisza River**. From then on, volunteers receive a new charm for each additional year of “service.” Some riversvers already have over ten charms on their bracelet! The charms were created using machines from the Dutch [Precious Plastic](#) initiative, in the workshop of the Hungarian company [CRKL](#). This inspired the idea to start processing river waste ourselves. And so, the River Litter Lab — RILL — was born. In RILL, waste takes on a new form, since **plastic can change its shape when exposed to heat**.



The fourth rule of plastic literacy is that plastic changes its shape when exposed to heat. There are, of course, thermosetting plastics — for example, the handles of kitchen pots are often coated with this type — but we are surrounded by far more plastics that **soften when heated**. From garden watering cans and fabric softener bottles to ice cream tubs, nearly all our plastic items become pliable when exposed to warmth. Advanced RILL workshops require that the class is able to distinguish **at least four types of plastic**: PET, high-density polyethylene (HDPE), low-density polyethylene (LDPE), and polypropylene (PP). Fortunately, most products have clearly visible identification numbers on the bottom to help with classification. During advanced RILL sessions, we will work **exclusively** with plastics marked as polyethylene (HDPE, 2; LDPE, 4) and polypropylene (PP, 5). In Chapter Four, we use simple tools — such as an iron or contact grill — and follow safety measures (like using baking paper and ensuring proper ventilation) to heat the plastics to near their melting point. At around 200 degrees Celsius, both polyethylene and polypropylene become soft and malleable. It is important that **RILL sessions are only carried out at school, under the supervision of a qualified teacher, in a well-ventilated area, and with proper safety precautions!** (In the unlikely event of an accident, make sure a fire extinguisher and a first aid kit are on hand.) If you're feeling inspired to start working with recycled plastic, let's take a look at the different types of plastic — and what we can make from them!

PLASTIC CAN CHANGE SHAPE
WITH CHANGES IN TEMPERATURE



Types of plastics

Overview of thermosetting plastic and thermoplastics



The four most important plastics

An overview of PET, polypropylene, low and high-density polyethylene

Transforming bottle caps into pendants and necklaces

Making decorative objects and jewelry from river or household bottle caps
- with the use of baking paper and an iron

Transforming plastic bags into bags, aprons and curtains

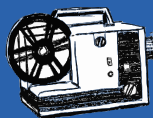
curtain or apron from colorful shopping bags - with the help of scissors and an iron

Flowerpot from a detergent bottle

Transforming a shampoo or fabric softener bottle into a lamp, mobile charger or soap holder

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INITIATOR



It's time for the sailor's initiation! If you're ready to learn something new, click on the frame to the right to open the [PRESENTATION](#) Summarizing Chapter 4.



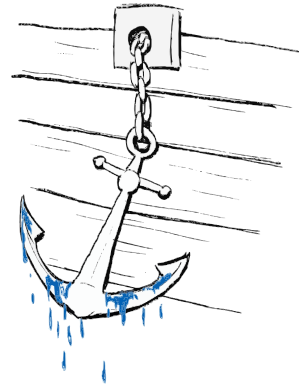
If you're done with the presentation, let's watch a movie! The film Series "5 Countries 1 River" showcases products made from waste, subtitled in every "Tisza language." CLICK ON THE [VIDEO!](#)



ANCHORS AWEIGH!

Group PLAYER TASKS

Anchors aweigh, and let the adventure begin! Three tasks await you: a message in a bottle with a related quiz, and two practical workshop tasks. The message in a bottle sheds light on the downsides of single-use plastics (4.1); while the first workshop task demonstrates how to shred and grind plastic with homemade tools (4.2). Just like grated cheese on pasta, finely shredded plastic melts much better; we can take advantage of this when we use various colored bottle caps and a little bit of ground plastic to melt an eye-catching pendant (4.3). Among themselves, the plastic pirates call this colorful and unique disc a “petak” – it can be worn as a necklace, earring, bracelet, or used as a keychain. While working, make sure to use only polyethylene and polypropylene for melting – PET is not suitable for this workshop! On the following pages, you will receive help for all three tasks, and you can always click back to the presentation as well. By clicking on the QR code or link of the Initiation Presentation, you will also find the slides related to the tasks with detailed descriptions. We wish you an exciting game and lots of success with the tasks!



4.1. MESSAGE IN A BOTTLE

Read the message in a bottle, then form teams, and click on the quiz! Now we'll find out who paid attention :-)

For more information:
NEXT PAGE

4.2 SMART PLASTIC SHREDDING

Form teams, review the guide together, follow the safety instructions - and the work can begin!

For instructions,
TURN TO THE DETAILED
DESCRIPTION

4.3. PLASTIC REVIVAL BY MELTING

Take the colorful plastic shavings, a few colorful bottle caps, and let the melting begin!

For full task details,
TURN TO THE DETAILED
DESCRIPTION



Hi Everyone! This is the fourth message in a bottle in this book – this time it's all about mineral water! It's completely logical that some people buy mineral water – assuming they can't get clean water any other way. However, in Europe, tap water costs less than one euro cent per liter, and in most parts of the continent, it's not only drinkable but of excellent quality. In supermarkets, bottled water costs between 0.5 and 1.5 euros per liter, but in restaurants, they can charge up to 2-3 euros per liter. Therefore, the price difference can be hundreds or even thousands of times greater. This inevitably suggests that mineral water is healthier – but studies show that due to the plastic packaging, these drinks contain a lot of microplastic particles; furthermore, the production, transportation, and waste management of bottled products place a significant burden on the environment. So maybe they taste better? Studies suggest that if served in identical glasses at the same temperature, consumers cannot tell the difference between mineral water and tap water. The only explanation left is that advertising companies were so successful in communicating that bottled water is healthy, that many people ended up believing it. Fortunately, more and more people are unhappy with the fact that less than a third of these plastic bottles are reused, with the rest ending up in landfills or in nature. These conscious consumers can easily be recognized by their cool water bottles filled with tap water :-y)!!!

IF YOU ARE DONE READING, HEAD TO THE QUIZ IN THE INITIATION PRESENTATION!





4.2.

SMART PLASTIC SHREDDING

Select the thin-walled products made of polyethylene (PE, with codes 2 and 4) and polypropylene (PP, with code 5) (e.g., yogurt cups, lightweight food containers), and only work with these materials! Although the PET bottle (PET, with code 1) is being shredded in the image above, avoid using this material in this practice. With adult supervision, create easy-to-handle, simple-to-cut flat sheets from the PE and PP products! Then, use scissors or a hole punch to shred the plastic into small pieces. Always ask for an adult's permission before using tools! Store the shredded material in an airtight container, such as a plastic bag or a jar with a sealable lid. If you separate the different colored shreds, you can later have fun playing with the colors!

Before you start, watch the [video](#) about shredding plastic sheets at home!



4.3.

PLASTIC REVIVAL BY CAREFUL MELTING

Perform this exercise only in the presence of an adult, under constant supervision, in a well-ventilated room! The goal is to create a recycled plastic pendant or "petak," which is the real plastic pirate badge. Take a few bottle caps - these can come from river bottles or from home. Sprinkle some colorful plastic shavings inside the cap. Place the cap with the shavings between two layers of baking paper on a thick wooden coaster. Then place a heated iron (set to 190-200°C) on top. Within 1-2 minutes, the cap will soften. Apply light pressure from above. Once the pendant has flattened, remove the iron and wait for the plastic to cool. Then, peel off the baking paper and admire your finished plastic pirate petdant! **WARNING:** This practice should only be done in groups, with the RILL's own iron or grill. Do not attempt this at home, as melting plastic is a fire hazard, and the iron could be damaged. Thank you!

Before you start, watch the [video](#) about melting bottle caps!

For more melting workshop videos, click on this [collection!](#)



EXTRA CREDIT ASSIGNMENT

Repeat the water tasting experiment you've learned from the message in a bottle! Take three identical glasses and buy two bottles of mineral water, preferably different brands. Use a permanent marker to label the bottoms of the bottles with a number so you can identify which glass contains which water. Then, pour clean, drinkable tap water into one glass and mineral water into the other two. Chill the waters to the same temperature in the refrigerator. Once the three glasses of water have cooled, the experiment can begin. Ask your participant to taste all three waters and try to identify which one is tap water and which are the mineral waters. Also, ask which water tastes the best. Finally, discuss the results together!



Red bottle cap, and the riversaving objects made from it.
Photo: Emese Silimon, www.folyomento.hu

TREASURE CHEST

TOOLS and ACCESSORIES

- ☐ CLEAN PLASTIC FLASKS, BOTTLE CAPS
- ☐ PET TABOO CARDS
- ☐ IRON, SOLDERING ROD, CUTTING TOOLS
- ☐ BAKING PAPER, STRING, SCISSORS, WOODEN COASTER
- ☐ FIRE EXTINGUISHER, FIRST-AID KIT
- ☐ FAN
- ☐ OVEN MITT
- ☐ GOOD MOOD AND CURIOSITY ;-)





In the River Litter Lab, single-use caps and bottles are transformed into useful and durable objects. In the picture, you can see a keychain used by the Riversavers (top left), a flower pot (top right), a ballpoint pen (bottom left), and an anchor ornament (bottom right).
Photo: Emese Silimon, Krisztián Berberovics; <https://www.riversaver.eu>




RIVERSAVERS' HANDBOOK

Volume 2, Chapter 5

5

Plastic Pirate Initiation

Let's adopt a river section, go out to the riverbank, invite friends, family members, and initiate our new plastic pirates :-)!

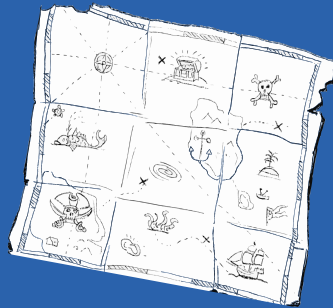




Members of the Plastic Cup Initiative's youth team are children and teenagers under the age of 18. Here they are celebrating the plastic pirate certificate they received for cleaning the Bodrog River. :) . Photo: Enikő Kubinyi

TREASURE MAP

Where does the FIFTH CHAPTER lead?



3. You start the preparations. You make small labels for the best RILL creations so they can be displayed. You collect the best stories and the most interesting tales, then you discuss who you'd like to invite to the initiation. It's up to you whether you'll invite just friends and family, the whole school, or maybe even the local press... The most important thing is to have fun!

1. You have finished all of the RILL activities, and everyone is eager to share their experiences. Your teacher will show you the [fifth presentation.](#)

2. Everyone is pleased to acknowledge that anyone who has gone through volumes 1 and 2 of the Riversavers' Handbook has met all the criteria for becoming a plastic pirate.

4. The invitees arrive to the riverbank and look around in surprise and pride seeing how far you have come... The students have become Plastic Pirates, your teacher a Plastic Pirate and a Volunteer Riversaver, and the school has officially obtained the title of a Riversaver School. Congratulations! Sparkling water for everyone ;-) !

COMPASS



Many people confuse rivers with a canal - but if you want to know what these concepts really mean, grab your compass and stay the course!



In 2009, István Palkó, also known as Pici Bá (Mr. Tiny :-)), along with his family and friends, built a boat out of plastic bottles and started river tours on the Upper Tisza. On the legendary boat, they had everything from a hammock through a grill to a parasol. Mr. Tiny joined the Plastic Cup Initiative as a co-founder along with his crew, and has participated **in 12 races** since. This means that Captain Tiny has been a plastic pirate for a quarter of a century! With his team, **he has collected tons of waste and has sailed over 1000 river kilometers on plastic bottles.** Both of his sons are plastic pirates, with the younger one, Zsombor, celebrating his second birthday on the banks of the Tisza. But how does one earn the honorable title of “plastic pirate”? In the Plastic Cup dictionary, anyone **who has witnessed river plastic pollution with their own eyes, cleaned the river with their own hands, and created something useful and durable out of waste is a plastic pirate.** When you think about it, this description perfectly fits you too! It's time to celebrate yourselves and your school!



According to the fifth rule of plastic literacy, **if used wisely, plastic can actually help clean our rivers**. Just think of the Plastic Pirate boats made from PET bottles, or Pelican, the plastic dinghy! But it's not just watercraft that helps the rivers. Any object can play an important role, that is made from reused waste and that reminds us daily: if we want clean rivers, we must rethink our relationship with water and waste. If you've made it to the end of Volume 2 of the Riversavers' Handbook, you've come a long way. That alone is a great achievement — but you can make an even bigger impact by **sharing your successes and celebrating your results**. Use photos, stories, presentations, and remade plastic objects to show what you've accomplished! Every student who has completed all the workshops has earned the title of **Plastic Pirate**. Every teacher who has guided their class through the books has earned the title of **Plastic Pirate and Volunteer Riversaver**. And every school that has at least one class actively working for cleaner rivers has earned the title of **Riversaver School**. This calls for a celebration, and it's time to hold a proper Plastic Pirate Initiation! The gym is a great place for that, but if the weather is nice, we suggest heading out to the river — and your adopted riverbank!

PLASTIC, WHEN USED WISELY, CAN SAVE LIVES
AND CONTRIBUTE TO CLEANER WATERS



Preparations for the celebration

setting the date and location, sending out invitations

Accessories

Objects made in the RILL, photos, certificates, adoption board, preparation of delicacies

Ceremony, plaque unveiling

assembly on the riverbank, opening speeches

Performance, presentation

students' personal reports, exhibition of RILL objects

Plastic Pirate Initiation and oath-taking

ceremonial presentation of certificates, celebration of the newly appointed plastic pirates, of the adopted riverbank and/or school with sparkling water

Celebration and skipping stones

eating, drinking, informal conversation, preferably with locally prepared food, and with a complete ban on soft drinks in plastic bottles

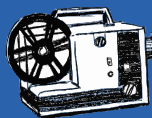
River watching and farewell

a session focused on teaching river observation to adults less familiar with river-related issues, followed by packing up and closing activities

www.petkupa.hu



INITIATOR



It's time for the sailor's initiation! If you're ready to learn something new, click on the frame to the right to open the [PRESENTATION](#) Summarizing Chapter 5.



If you're done with the presentation, let's watch a movie! In the 5 Countries 1 River film Series, Riversaver teachers talk about their experience in river-adoption, subtitled in all of the "Tisza languages."

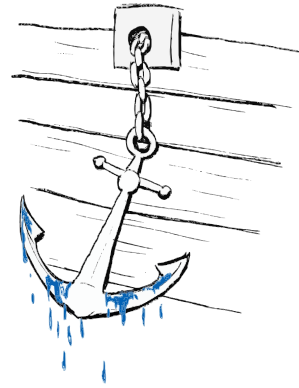
CLICK ON THE [VIDEO!](#)



ANCHORS AWEIGH!

Group PLAYER TASKS

Anchors aweigh, and let the adventure begin! Once again, three tasks await you: a message in a bottle with related quizzes, an indoor activity, and an outdoor exploration. After you have completed the Initiation section and the Message in a Bottle quiz (5.1), you can start getting ready for the celebration! At the end of the final chapter, we carefully prepare for the event (5.2), the plastic sailors are promoted to plastic pirates, your teacher earns the title of Riversaver Educator, and your school is awarded the Riversaver School title (5.3). To ensure everything goes as smoothly as possible, we've prepared downloadable templates for you, which you are free to use. It includes suggestions for the event schedule, as well as a certificate and a Riversaver School plaque. On the following pages, you will receive help for all three tasks, and you can always click back to the presentation as well. By clicking on the QR code or link of the Initiation Presentation, you will also find the slides related to the tasks with detailed descriptions. Congratulations on getting this far, class! We wish you good preparation and a successful Plastic Pirate Initiation :-)



5.1. MESSAGE IN A BOTTLE

Read the message in a bottle, then form teams, and click on the quiz! Now we'll find out who paid attention :-)

For more information:
NEXT PAGE

5.2. INDOOR ACTIVITY

Read the message in a bottle, form teams, and then click on the quiz! Now we'll find out who paid attention :-)

For instructions,
TURN TO THE DETAILED
DESCRIPTION

5.3. OUTDOOR EXPLORATION

Let's head to the riverbank! The time has come to unveil the Riversaver School plaque and initiate the new plastic pirates!

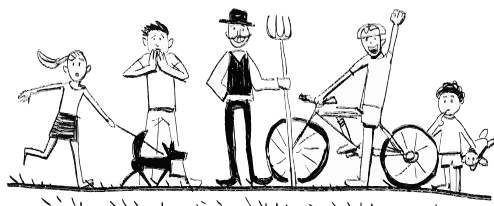
For full task details,
TURN TO THE DETAILED
DESCRIPTION



Hi Everyone! We have arrived at the last message in a bottle of this book. In New Zealand, the Whanganui tribe considers the Te Awa Tupua river to be their ancestor. This means that for them, the river is not “something” but “someone.” A pact has been in place between the British Crown and the Māori tribes for several hundred years – unfortunately, this has not prevented harm being done to the Māori people’s beloved river. The Indigenous people watched with concern as the riverbanks were taken over, built over, and increasingly polluted. Their first complaint about the river’s mistreatment was filed in 1870, and this led to a lawsuit in 1930. The longest court case in New Zealand’s history was only concluded in the following century, when a 2017 law granted the Whanganui River legal personhood. Since then, two guardians have been appointed to oversee the condition of the river – one representing the British Crown and the other the Māori. If the river suffers any harm, the case can immediately be brought before a court, and those responsible can be punished and held accountable. Granting the Whanganui River legal personhood was not only an important step for Indigenous communities but also set a precedent for environmentalists. Since then, many natural bodies of water – most of them in the Americas – have been declared legal persons.

IF YOU ARE DONE READING, HEAD TO THE QUIZ IN THE INITIATION PRESENTATION!





5.2. INDOOR ACTIVITY

PREPARING FOR THE CELEBRATION

The big day is approaching — when you'll clean up the section of the riverbank you've adopted, the plastic sailors will be promoted to plastic pirates, your teacher will earn the title of Riversaving Educator, and your school will be recognized as a Riversaving School. This deserves a proper celebration! The first and most important thing is that everyone knows their role. We suggest forming at least four groups. Have organizers who are responsible for the schedule, supplies, and permits, and who coordinate the work of the other teams. Set up a communications team to take photos and videos, request the necessary permissions, and then share the event online. Appoint a catering team to handle refreshments, food and drinks — and of course, ensure the event is waste-free. And lastly, have performers who will give speeches, put on shows, or display their creations to make the day even more memorable. Naturally, you can divide the tasks differently — the key is to start preparing in time! Download our [suggested program](#) and discuss what you like about it or what you'd do differently. Set the planned date of the event and choose a backup date in case of bad weather. Decide who you'd like to invite — such an event is a great opportunity to host other classes, friends, and family members as well. Adopting a section of the riverbank doesn't create any legal obligation, but it's still a good idea to inform the principal, the local municipality, the regional water authority, local civil organizations, parents — or even the local media — about your planned event. If you think it's necessary, request permission to install an adoption plaque and a Riversaver School sign. If you'd like to take photos during the event, make sure to get parental consent in advance!



[Materials for download](#)



5.3. OUTDOOR EXPLORATION

PLASTIC PIRATE INITIATION

A plastic pirate is a student who knows the basic principles of plastic literacy, has already cleaned a river, ensured that some of the collected waste is recycled, and created something durable and useful with single-use plastics. A Riversaver Educator is a teacher who has worked through the first and second volumes of the Riversavers' Handbook with their class. A Riversaver School is an institution where at least one teacher has earned the title of Riversaver Educator. So, at the plastic pirate initiation, we not only welcome new pirates but also honor your teacher and school with new titles :-)

Once the final program is ready and the big day arrives, pack your backpack and head to the riverbank! Print out the program in advance and have the certificates ready (downloadable templates are provided below). Everyone should bring weather-appropriate, layered clothing, as well as the usual snacks and drinks for a field trip. Make sure everyone has a reusable plastic bottle, water bottle, mug, or reusable cup. Ask if anyone in the class is allergic to bee stings. Check the weather forecast and, if the weather is bad, postpone the event. If the weather is good, stick to the schedule! Make a pledge to keep the riverbank clean and to hand it over like this to the next plastic pirate class! If the river adoption plaque has been damaged by the weather, replace it with a new one! In addition to speeches and certificate handouts, it's a good idea to organize an exhibition featuring items made in the River Litter Lab. If you can manage it, tasty food and drinks will help keep the guests around longer. It could be fun to organize a humorous, water-themed presentation, competition, or quiz. The stone-skipping contest, for example, is second to none!

It's also important that there be no disposable plastic at the event!





Zsuzsa in Slovakia, at a section of the shore adopted by the Meseország Óvoda (Fairyland Kindergarten) in 2022, which has been kept clean and plastic-free since then. Photo: 5in1 Erasmus+ program

TREASURE CHEST

TOOLS and ACCESSORIES

- ☐ INTERNET ACCESS, PROJECTOR
- ☐ PET TABOO CARDS
- ☐ BLANK SHEETS OF PAPER, COLORED MARKERS
- ☐ BLUE STRING, OR RIBBON
- ☐ PET TABOO
- ☐ RECYCLED OBJECTS
- ☐ BAGS
- ☐ ADDITIONAL TOOLS LISTED BY YOU
- ☐ CERTIFICATES
- ☐ GOOD MOOD and CURIOSITY :-)



LAND IN SIGHT!

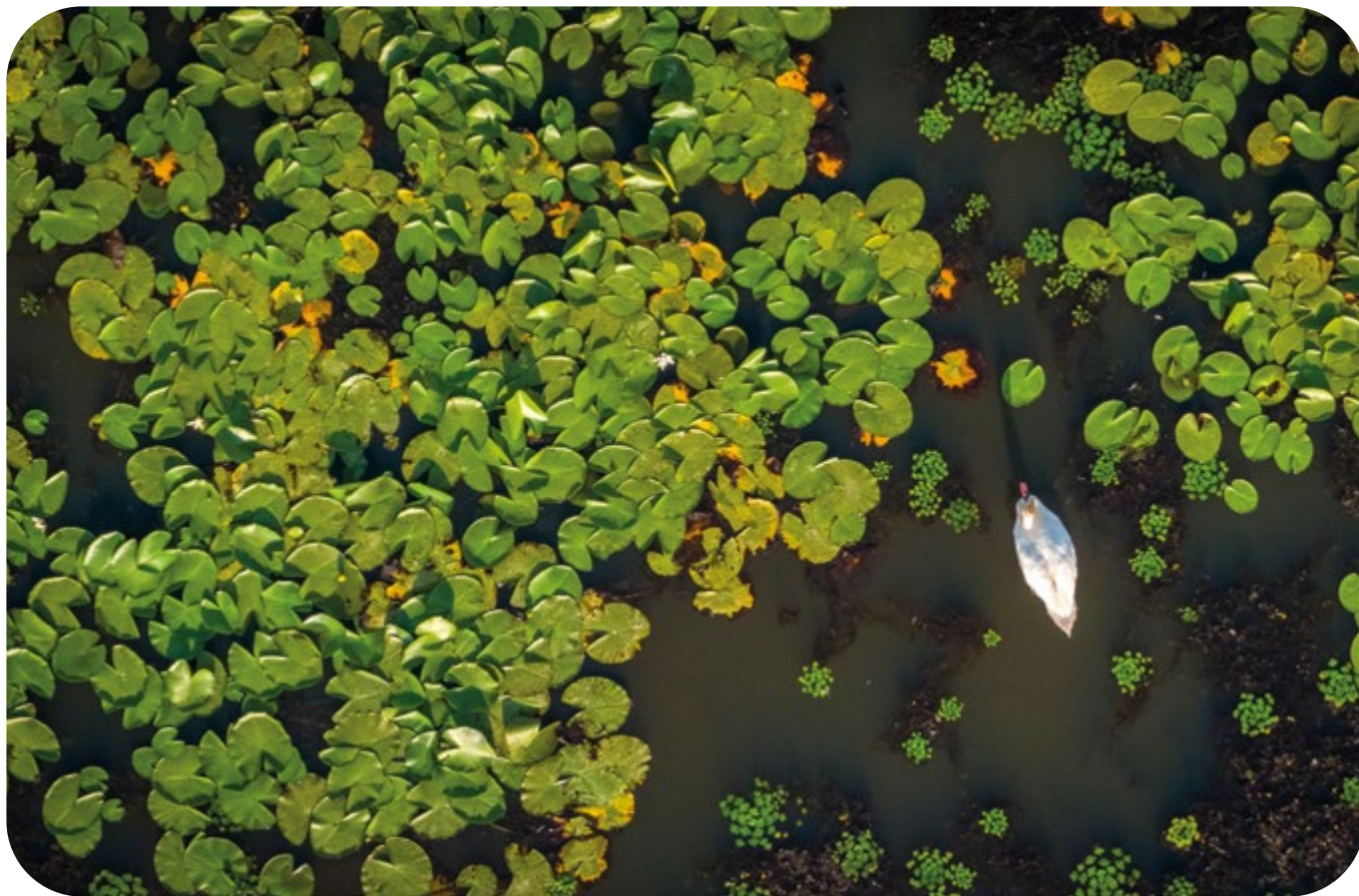
ANCHOR DROPPING and EPILOGUE

In 2020, the 5 **Countries 1 River (short: 5in1) Erasmus+ program** was launched, with the aim of having at least one school in each Tisza country where children are taught to love and appreciate the river. We thought that the more environmentally conscious children live in the Tisza River Basin, the greater our chance of freeing the river from plastic pollution. The teachers of 5in1 not only formed lifelong friendships with each other, but also created the first four volumes of the **Clean Tisza Textbook Series** (Tiszta Tisza Tankönyvsorozat). Teaching experience showed that the books are good in terms of content, but need corrections and simplifications in several places. The preparation of the second edition of the textbook series was again supported by the Erasmus+ program - this time within the framework of the **Riversaver Schools project**. Thank you for reading and using the **Riversavers' Handbook**! If you liked it, we recommend the other volumes of the Clean Tisza Textbook Series. The **3rd volume of the Riversavers' Handbook** takes river literacy and plastic literacy to a whole new level and prepares the class for participation in an actual Plastic Cup Initiative event. If you took some photos worth sharing while cleaning the river, please upload them to the [Tiszta Tisza](https://www.tiszta-tisza.hu) website or use the following tags when sharing: **#folyomentskola #riversaverschools #erasmus+!**

Congratulations to the new plastic pirates and volunteer riversavers, and a warm welcome to your school into the Riversaver Schools community!

Attila Dávid Molnár, Alíz Hajnal Bódiszné, Annamária Farkas, Zsuzsanna Bitter, Zita Szöllősi-Sebestyén, the teachers of the 5 Countries 1 River and the Riversaver School Network project, as well as the Riversavers of the Tisza Plastic Cup Initiative.










The leaves of the white water lily (*Nymphaea alba*) are held above the water surface by tiny air bubbles.
In the aquatic labyrinth, a mute swan (*Cygnus olor*) is searching for its food. Photo: Krisztina Pálvölgyi

Plastic Taboo cards



River cleaning  water cleaning action	Precaution  caution caution foresight	Ocean  sea Quiet Atlantic	Expedition  explorer adventure scout	Solar energy  renewable green energy
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Cooperation  cooperation help team	Garbage bag  garbage man waste container plastic	Protective equipment  glove safety goggles vest	Volunteer  leisure time helper colleague	Castaway  outcast survivor Robinson
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Microplastic  small magnifying glass fish	Polypropylene  common plastic PP	Polyethylene  common plastic PE	PET  bottle polyethylene terephthalate	Inventor  Leonardo DaVinci genius
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Iron  clothes hot groan	Melting point  frost ice ice cream	Advertisement  marketing spot advertisement	Drinking water  thirsty glass liquid	Tap  water bathroom kitchen
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Little Aunt  small small petcalóz	Petcalóz  pet cup volunteer	Grill oven  grilling garden barbecue	Caretaker  guardian adoption caretaker	Per  court lawyer law
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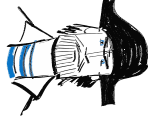
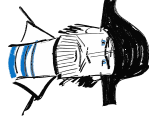
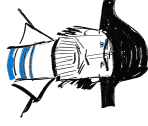
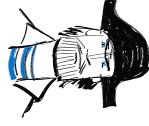
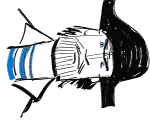
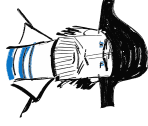
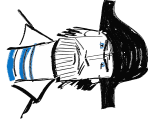
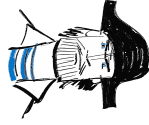
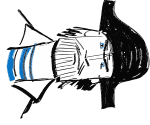
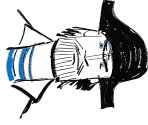
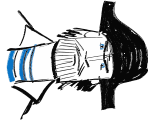
Chapter 1

Chapter 2

Chapter 3

Chapter 4

Chapter 5





Riverbank adoption in Slovakia, in the Danube River Basin.
The riverbank was cleared of waste by students and volunteer firefighters. Photo: Zsuzsanna Lelkes

RiverSavers' handbook, Volume 2.

E-book, Second digital edition.

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