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Protect Biodiversity



Enjoy nature



Long lasting preservation

Jointly for our common future



SOUTH EAST EUROPE

Transnational Cooperation Programme



NATURA 2000



Programme co-funded by the EUROPEAN UNION



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Drawings: Vasilis Hatzirvassanis • Texts: Vasilis Hatzirvassanis, Irini Loi
Translation: xxx xxxxxxxxxxx • Layout design: Aris Vidalis
Photos: Aris Vidalis, XXX XXXX
Production: ATEPE Ecosystem Management Ltd.

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BeNatur

by the water

better management
of natura 2000 sites

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Consorzio di Gestione



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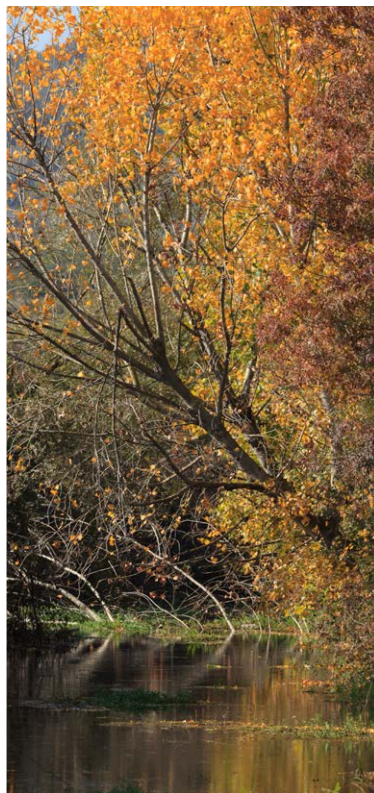


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BeNatur

by the water



Near, in and under water

River banks, lake shores and the bottom of water bodies are important habitats that host numerous animals and plants. They provide breeding grounds, shelter and food to animals that live, feed or reproduce in or near water. Banks and shores may consist of layers of mud, sand, pebbles or boulders. Reeds, grasses and riparian trees stabilize them against the force of water. Hazardous chemicals and the loss of riparian vegetation threaten animal habitats. Pollution, loss of vegetation, erosion, introduction of invasive species and unsustainable use by man cause destruction to the ecosystem which in turn affects the well being and survival of the species within.



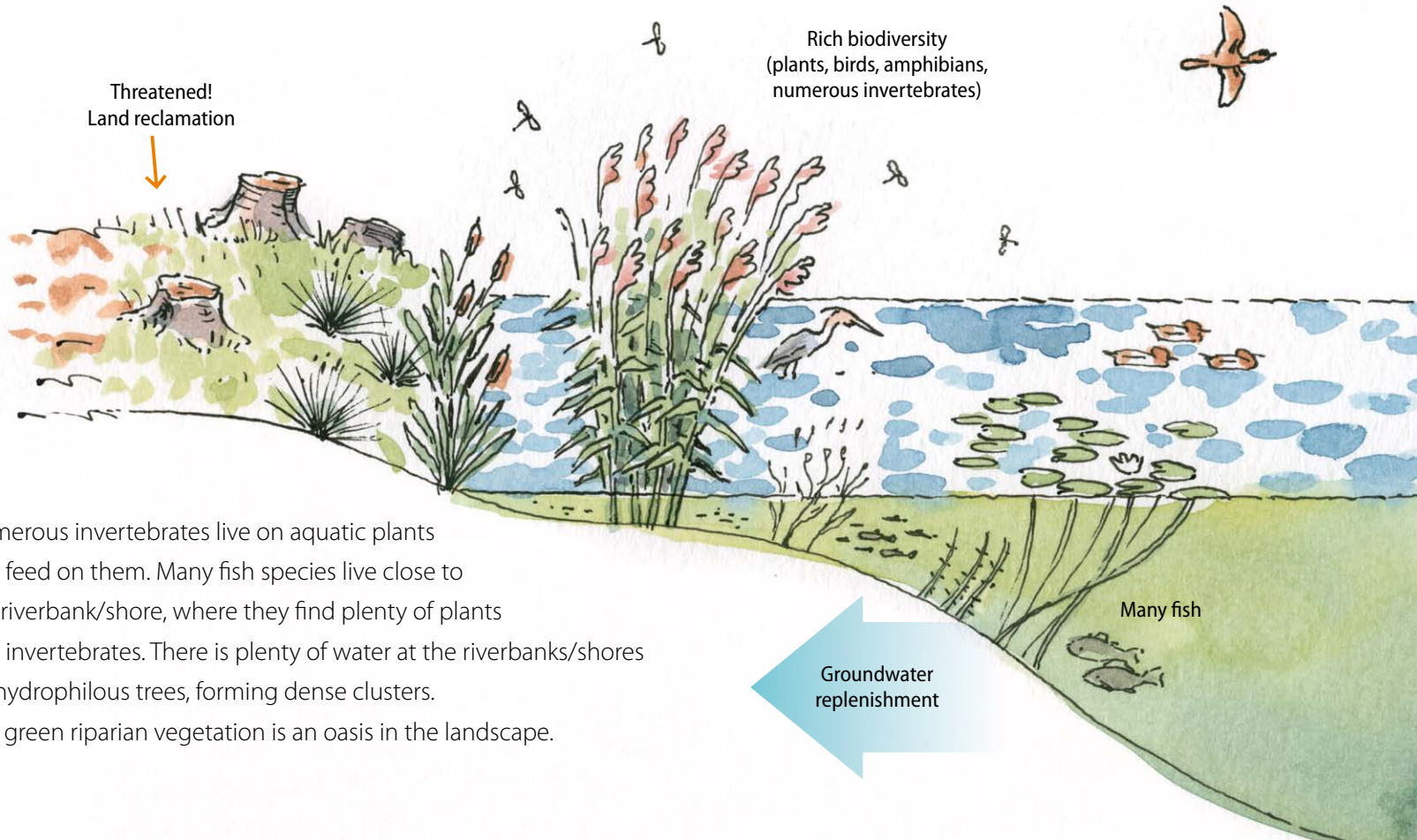
Late autumn in Amvrakikos wetlands, Greece.

What is **BeNatur**

People from Hungary, Italy, Austria, Serbia, Romania, Bulgaria and Greece gathered and work together in order to help some ecosystems that lie close to water bodies to survive. This project is called Be-Natur and is carried out by fourteen partners from seven countries. The areas of management are part of the Natura 2000 network. Why have we Europeans created it? Because it is very important to know how some ecosystems function and how we can protect them from danger. Every country has to take measures and act in a way that assures the future of these ecosystems and all animals and plants living there and listed by the Natura Network.

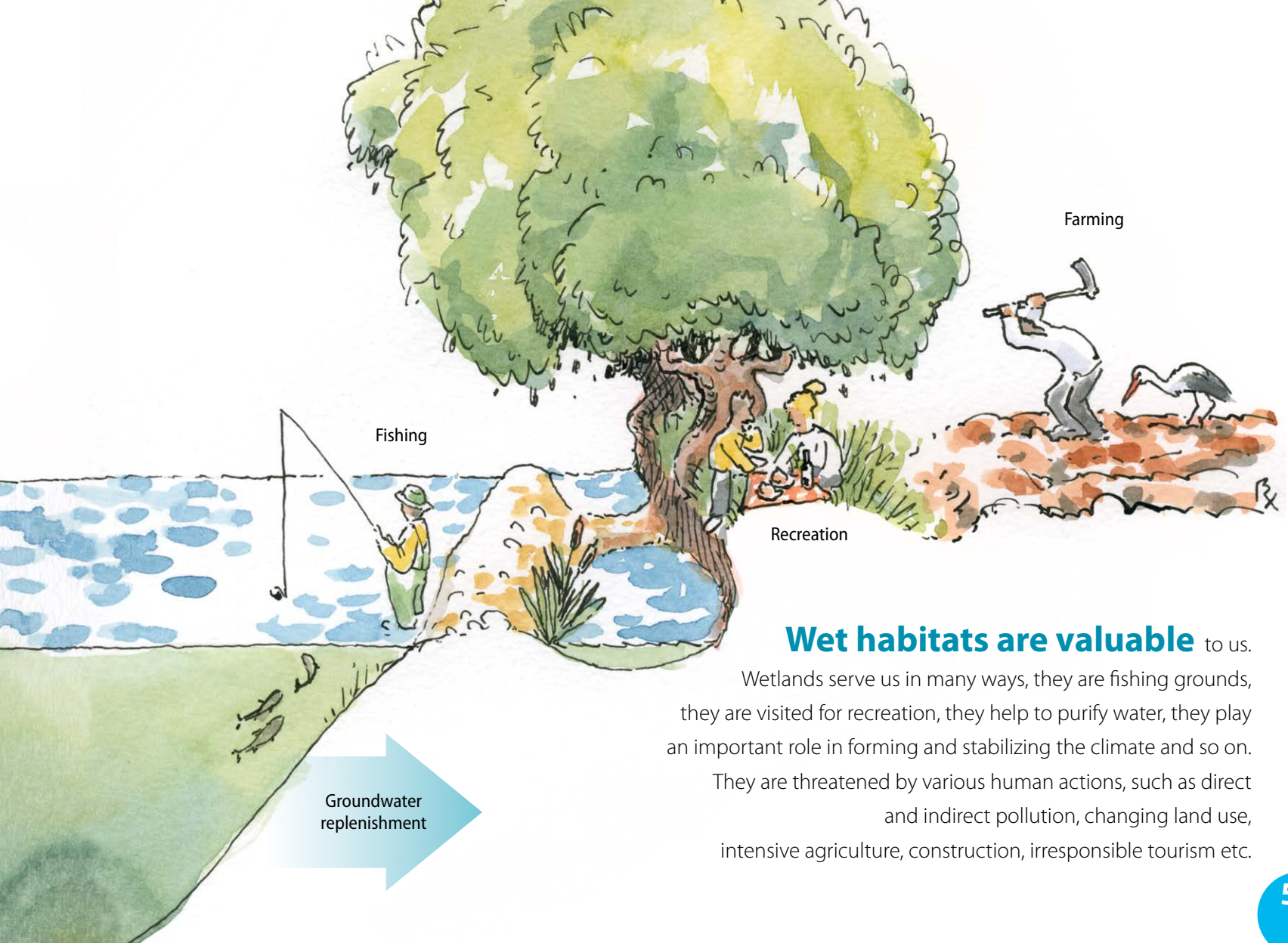
Wet habitats are rich in plant and animal species.

Most of the aquatic plants grow near the riverbank/shore, because plenty of light can penetrate the shallow water.



Numerous invertebrates live on aquatic plants and feed on them. Many fish species live close to the riverbank/shore, where they find plenty of plants and invertebrates. There is plenty of water at the riverbanks/shores for hydrophilous trees, forming dense clusters.

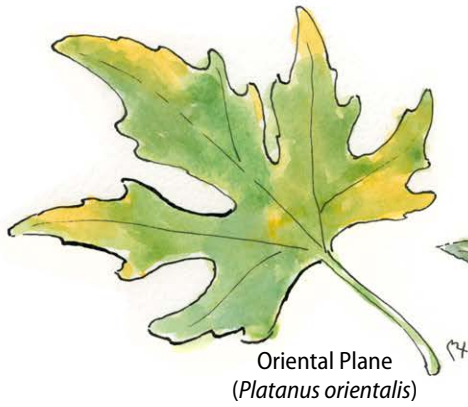
The green riparian vegetation is an oasis in the landscape.



Wet habitats are valuable to us.

Wetlands serve us in many ways, they are fishing grounds, they are visited for recreation, they help to purify water, they play an important role in forming and stabilizing the climate and so on.

They are threatened by various human actions, such as direct and indirect pollution, changing land use, intensive agriculture, construction, irresponsible tourism etc.



Oriental Plane
(*Platanus orientalis*)



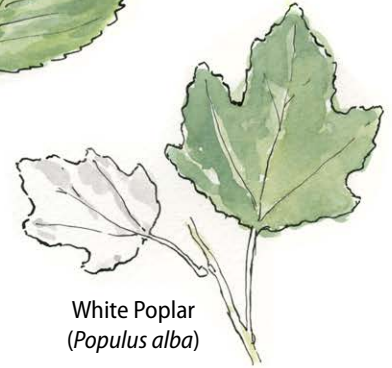
White Willow
(*Salix alba*)



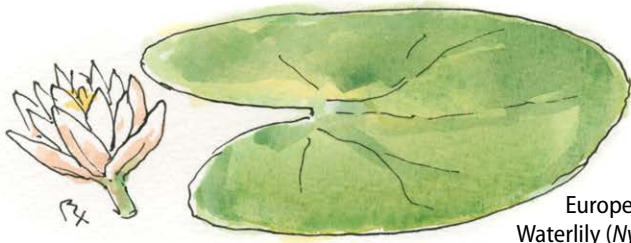
Narrow-leaved Ash
(*Fraxinus angustifolia*)



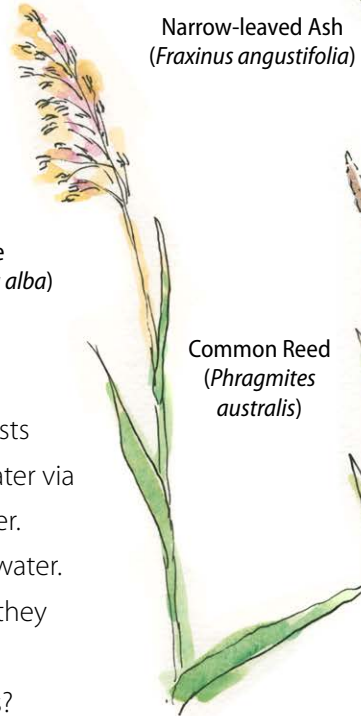
European Alder
(*Alnus glutinosa*)



White Poplar
(*Populus alba*)



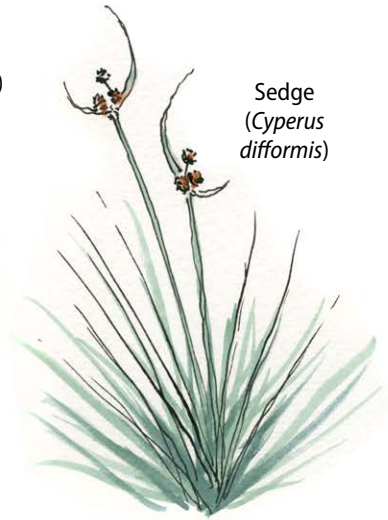
European White
Waterlily (*Nymphaea alba*)



Common Reed
(*Phragmites
australis*)



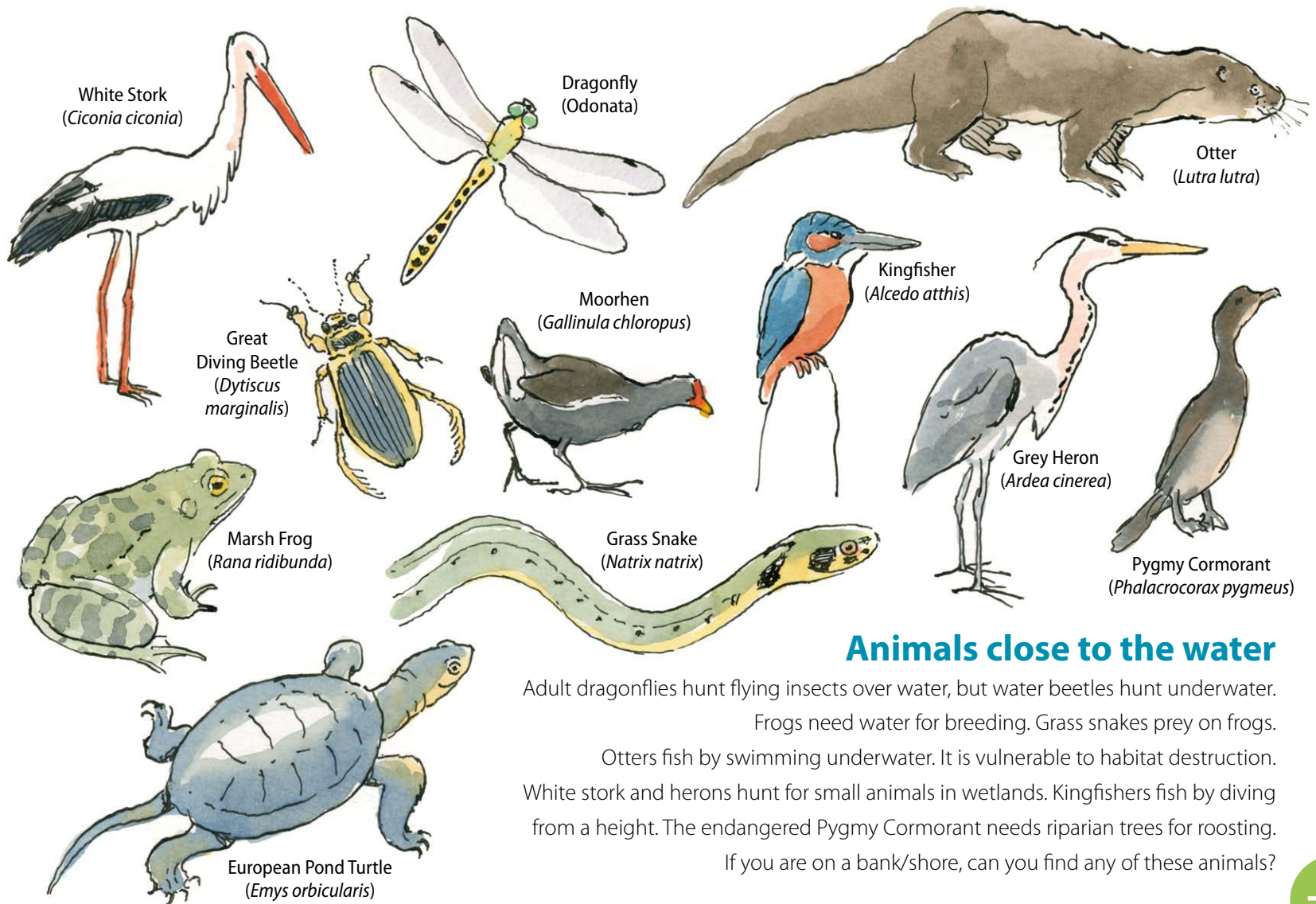
Bullrush
(*Typha* sp.)



Sedge
(*Cyperus
difformis*)

Plants close to the water

Poplars (*Populus* sp) and willows (*Salix* sp) form gallery-forests along the rivers. Plane trees (*Platanus* sp) absorb groundwater via their very long roots. Reeds (*Thypha* sp) prefer shallow water. Rushes (*Juncaceae*) grow on land that is seasonally under water. Water lilies (*Nymphaeaceae*) take root on the bottom, but they have floating leaves and flowers. If you are on a bank/shore, can you find any of these plants?



White Stork
(*Ciconia ciconia*)

Dragonfly
(Odonata)

Otter
(*Lutra lutra*)

Great Diving Beetle
(*Dytiscus marginalis*)

Moorhen
(*Gallinula chloropus*)

Kingfisher
(*Alcedo atthis*)

Marsh Frog
(*Rana ridibunda*)

Grass Snake
(*Natrix natrix*)

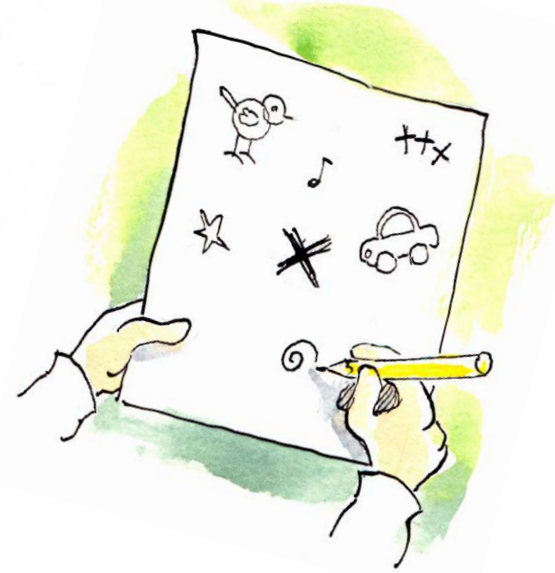
Grey Heron
(*Ardea cinerea*)

Pygmy Cormorant
(*Phalacrocorax pygmeus*)

European Pond Turtle
(*Emys orbicularis*)

Animals close to the water

Adult dragonflies hunt flying insects over water, but water beetles hunt underwater. Frogs need water for breeding. Grass snakes prey on frogs. Otters fish by swimming underwater. It is vulnerable to habitat destruction. White stork and herons hunt for small animals in wetlands. Kingfishers fish by diving from a height. The endangered Pygmy Cormorant needs riparian trees for roosting. If you are on a bank/shore, can you find any of these animals?



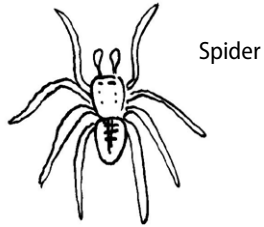
Mapping the sounds

In nature it isn't just about what you see, but also about what you hear.

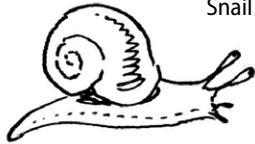
Sit down at a riverbank/shore or a coast with a piece of paper in your hands. Put a sign in the centre of the paper: this is your position. Stay in silence and listen. For each sound you hear, put a sign (that reminds you of this particular sound) for the direction and approximate the distance from which you heard it.

After a while, you can compare your map with the ones your friends made. Did you hear the same sounds?

Can you make a map noting smells? A map noting what you touch?



Spider



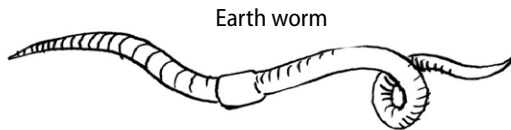
Snail



Beetle



Ant



Earth worm



Walking in the Microcosmos

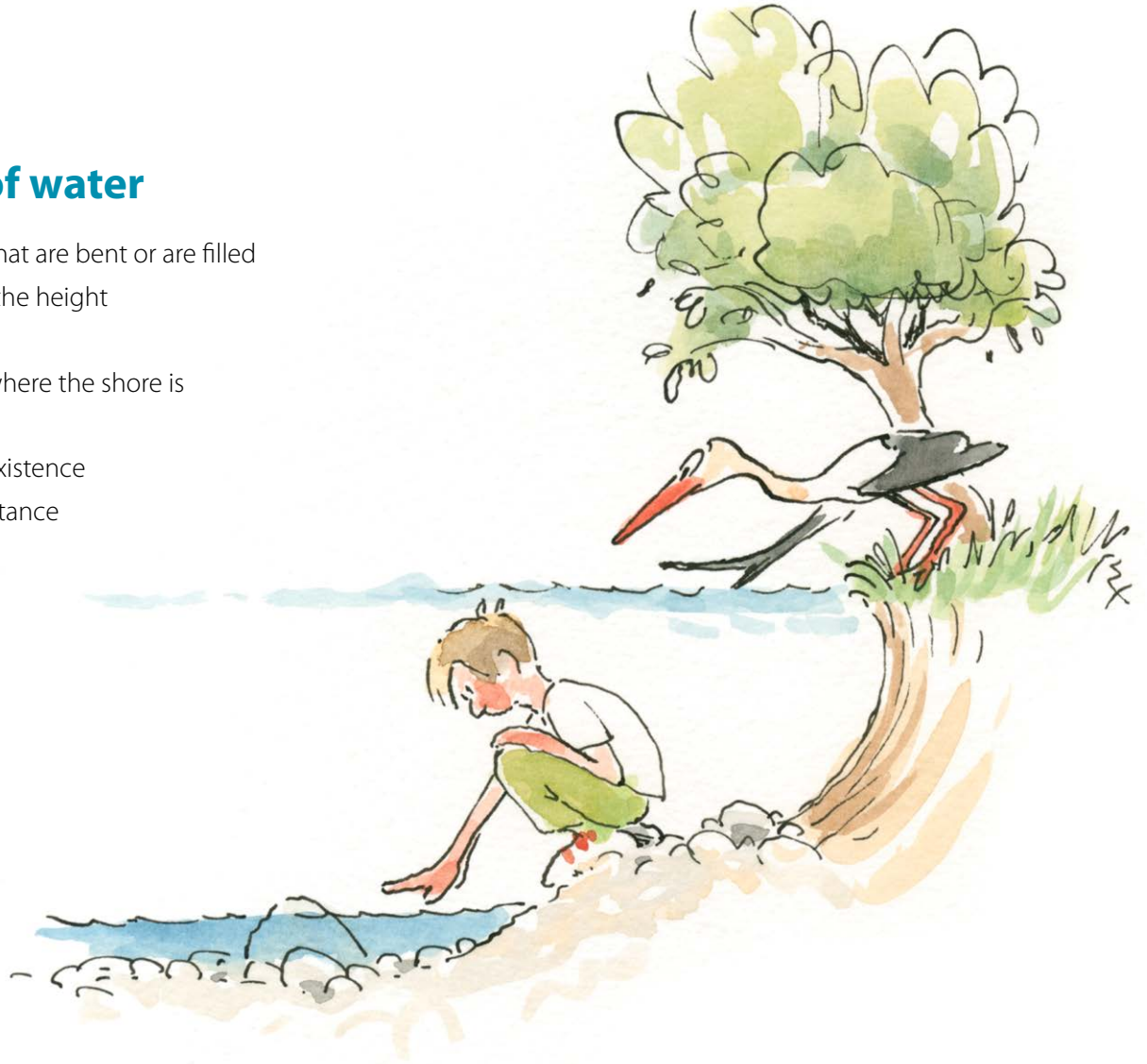
There is another world that lives under your feet. You can see it easily as long as you lie down on the ground. Stretch a meter of string on the beach or the bank/shore and sit down or lie down next to it. Very slowly, follow the string and start observing everything interesting next to it. It is better to look from a distance, not more than 30 centimetres, and have a magnifying lens with you.

Find the marks of water

At a riverbank, the branches that are bent or are filled with weeds and debris show the height of the highest flooding level.

On a lake, reed stands show where the shore is during the spring snow-melt.

The riparian trees reveal the existence of subterranean water at a distance from the river bank.





Dog
(*Canis familiaris*)



Otter
(*Lutra lutra*)



Badger
(*Meles meles*)



Fox
(*Vulpes vulpes*)



Coypu
(*Myocastor coypus*)



Muskrat
(*Ondatra zibethicus*)



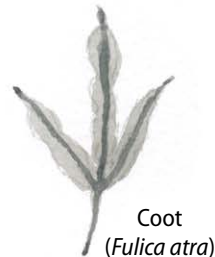
White Stork
(*Ciconia ciconia*)



Moorhen
(*Gallinula chloropus*)



Grey Heron
(*Ardea cinerea*)



Coot
(*Fulica atra*)



Hooded Crow
(*Corvus cornix*)



Mallard (*Anas platyrhynchos*)



Gull
(*Larus sp.*)

Find animals by their footprints

Most of the animals go out on the bank/shore only during the night or early in the morning. Identify as many animals as you can from the footprints left on the mud or snow.

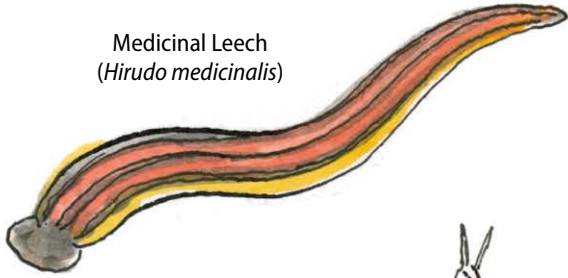
Who is able to find most of the animal species?

Looking through the eyes of a naturalist

Like the old naturalists-researchers, look carefully at any animal or plant you find interesting and take notes. Fold 1-2 paper sheets so as to make a notebook where you can note anything interesting. You can write, you can draw an animal or a leaf, you can scribble... You can name it "Lake Notes", "Diary of an explorer" or whatever you want. You can use pens, coloured pencils, crayons (3-4 colours are enough) or anything else possible to use. Try this with a few friends and compare notes at the end. Did you note the same things?



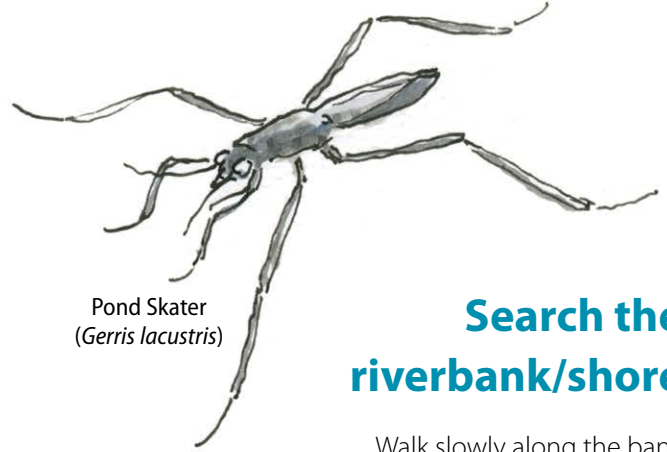
Medicinal Leech
(*Hirudo medicinalis*)



Pond Snail (*Lymnaea stagnalis*)



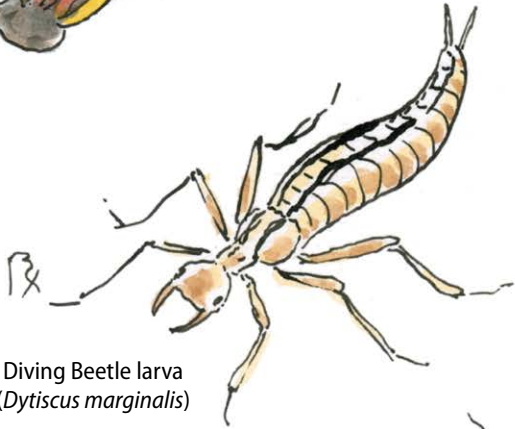
Pond Skater
(*Gerris lacustris*)



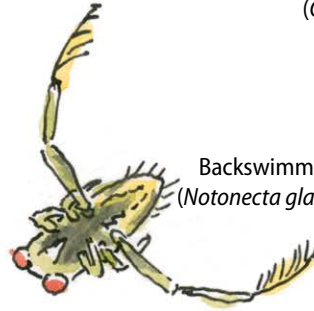
Search the riverbank/shore

Walk slowly along the bank looking carefully for small animals sitting on the edge of the water. Make a net, with a wire clothes hanger and a small piece of tulle. Drag it carefully close to the water bed or through the weeds so as to catch insects and other small animals.

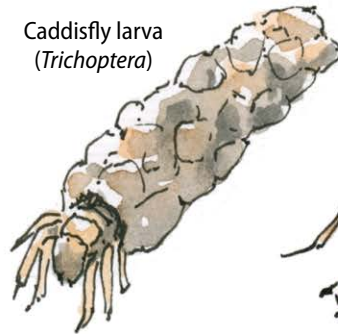
Diving Beetle larva
(*Dytiscus marginalis*)



Backswimmer
(*Notonecta glauca*)



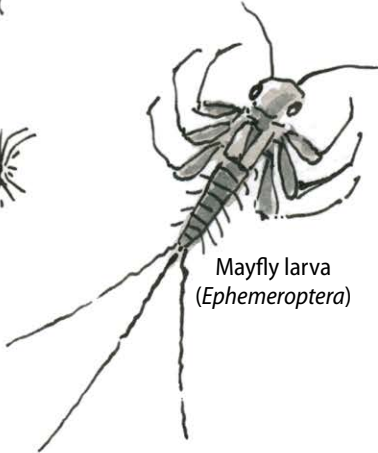
Caddisfly larva
(*Trichoptera*)



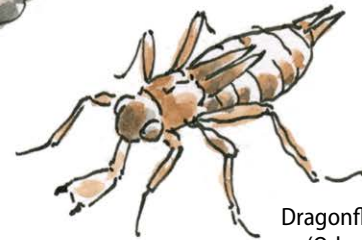
Mosquito larva
(*Culicidae*)



Mayfly larva
(*Ephemeroptera*)



Dragonfly larva
(*Odonata*)



Is the water at the shore and the surface of the bed clean?

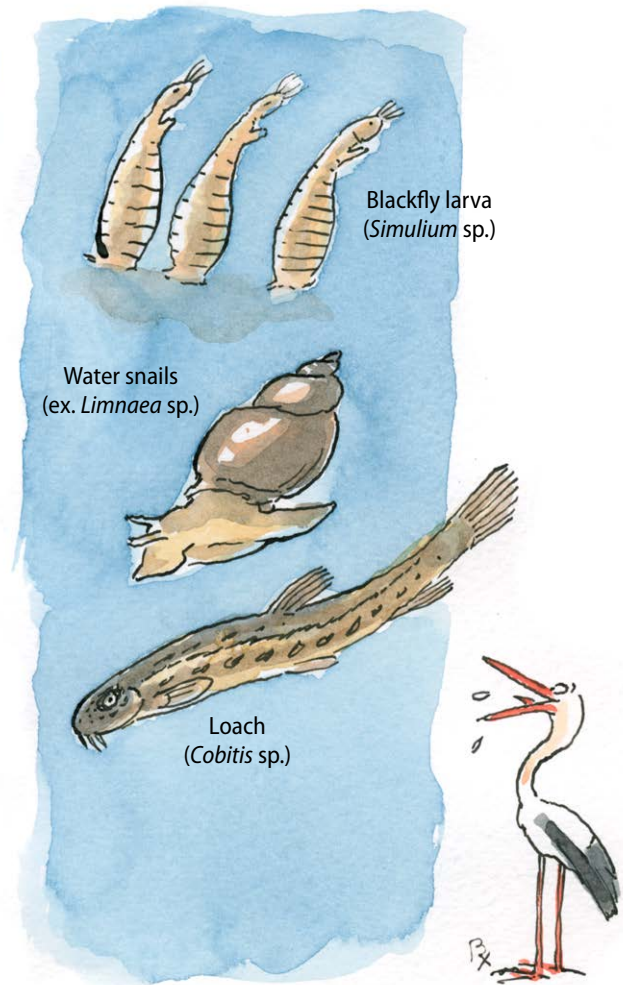
There are ways to discover hidden pollution:

The diversity of aquatic plants shows that the water quality is good.

A few aquatic plants and green slime on the river or pond bed indicates water pollution.

Frogs, water turtles and grass snakes show us that the water is clean. Clean water sometimes can be brown or green or muddy, which does not mean it is polluted.

Larvae of flies and floaters (they look like small worms hidden in the wholes or under the stones of the seabed) indicates water pollution.





Does the bank remain changeless?

Can you imagine how the bank would look like ten or hundred years ago?

From what you see, what would be here back then?

Someone that lives here could tell you or show you an old photo.

Can you imagine how the bank will be after ten or a hundred years?

What would you like to keep of all the things that are around?

Can you think of a way to keep them as they are today or improve them?