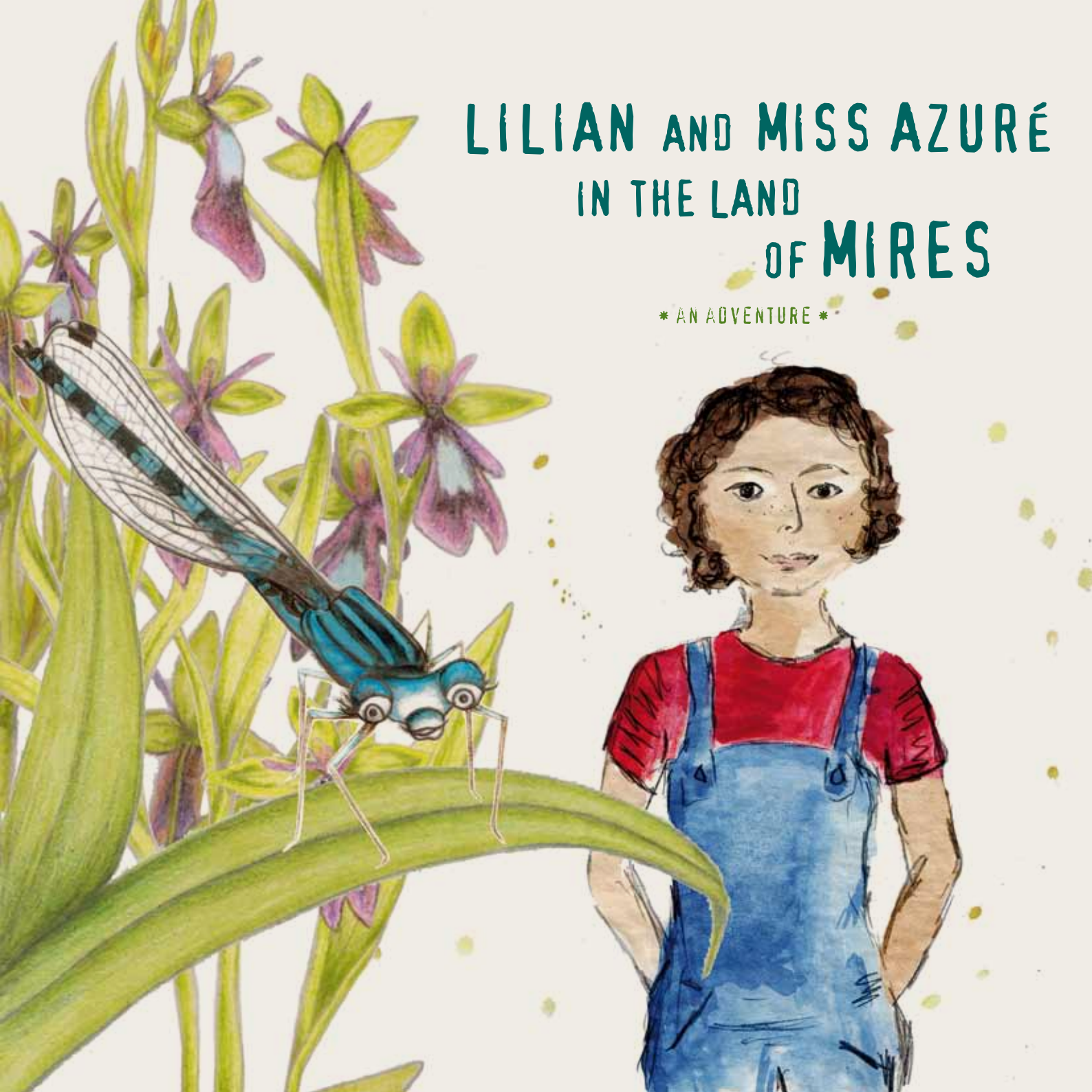


LILIAN AND MISS AZURÉ IN THE LAND OF MIRES

* AN ADVENTURE *



More about Lilian and her adventures:
www.Lillys-Adventures.com

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THE PATH TO THE ENCHANTED MIRE

Lilian spent every summer at her grandmother's house in the countryside. She loved helping out in the garden, playing with Oscar the cat, having baths in the old zinc bath tub and just lounging around lazily outdoors. However, last summer something very special happened to her which she would never ever forget. This is how the story begins:

It was late afternoon on a hot, lazy day. Lilian sat on the garden bench looking across the meadow towards the woods in the distance. Oscar dozed beside her, purring.

Gran had forbidden her from going too far into the meadow, and certainly nowhere near to the woodland which she said was a dangerous place. Lilian didn't understand why and that day in particular she began to wonder what it was like out there. Then, suddenly she really couldn't stop herself from getting up from the bench and starting to walk in the direction of the swaying trees. Lilian waved to Oscar the cat: ›Gran is out shopping and she



won't be back for ages, so I will just take a little walk! I won't be long Oscar.‹

Walking across the meadow seemed to take for ever but as she got nearer and nearer to the trees Lilian began to notice that the ground underneath her feet was getting wetter and wetter. Every step she took made a loud gurgling and slurping noise. Finally, she reached the edge of the woodland and looked up at the tall, twisty trees. She had never seen such a strange place before. She always thought trees grew in dry land, but here all the trees were standing in lots of water.

›Could trees really live in water?‹ she wondered. There was no carpet of fallen leaves like she had seen under the trees that grew in the park by her school. Instead the water reflected the treetops and the wispy clouds in the sky. Between the trees, strange grassy plants rose up from the water. To Lilian they looked like

huge tufts of grass or oversized feather dusters. In between the trees was an irresistibly inviting darkness, like something out of a fairy story.

Lilian really wanted to go and explore but with all the water around she really wasn't sure what to do. She stared into the gloom while she wandered around the edge of the wood and thought about what to do next.

As she came to a little clearing she spotted what looked like planks of wood stuck together like the beginning of a path. She carefully paddled through the water to reach them. The pathway was old and quite overgrown but Lilian thought: ›I'm here now. So I might as well go in.‹ And that's how Lilian's adventure began.

She was slowly swallowed up by the thickets of trees and low growing plants.

Lilian was amazed by all the different shades of green created by the different plants.

She heard birds singing that she didn't recognise and little frogs and toads jumped out of the way as she walked past.





As she carried on the woods began to thin out until at last, a vast endless land appeared in front of her. It was an amazing sight. She could see several big pools of water and lots of unusual plants including the low-growing, tufted plants that she had seen before. Along the edge of the woods, broken tree stumps and young trees rose up out of the watery ground. There was silence, but Lilian had the feeling that there was lots of hidden life. She had never seen anything like it before. The land was neither forest nor meadow, neither lake nor river, yet somehow it was everything rolled into one. ›Should I turn back?‹ Lilian hesitated. ›No, I'll go just a little bit further.‹

Lilian looked down at her feet that were on the old wooden path.

They began to carry her deeper into the boggy wetland. Occasionally she could feel the wooden path sway, just a little, as she walked. The ground seemed unstable and beside her everything appeared to be covered by a soft and lush green carpet.

Now and again the green was broken up by a bright cluster of flowers in every imaginable colour. Then, ahead, Lilian caught a glimpse of a white shimmer. Her eyes lit up when she finally reached the mysterious source of the colour. Everything around her was covered

with white, fluffy flakes. What looked like cotton wool on long stems wafted all around her, settling on everything, including Lilian. ›What amazing plants!‹ she marvelled. ›I'm going to call them cotton grass‹. With her hand brushing along the odd plants, Lilian walked on as the vegetation around her changed, growing taller and taller. Some plants even reached her shoulders. ›They look like big heads of hair growing out of the ground,‹ she thought.

The path continued to a large, open area of water. The breeze picked up, rustling the tall, thin grasses at the water's edge.

There were reeds and bulrushes and their soft rustling made her feel a bit sleepy. The light was starting to change as the afternoon began to let the evening creep in and Lilian knew she would have to turn back soon before Gran missed her.

Her legs were tired after such a long walk and she decided to sit down for a little rest. Before she knew it her eyelids began to feel heavier and heavier and in no time at all she had fallen fast asleep.

As she slept she didn't notice darkness falling over the wetland as the evening became the night.

WHAT DOES A MIRE LOOK LIKE?



BROAD-LEAVED COTTON GRASS [ERIOPHORUM ANGUSTIFOLIUM] belongs to the sedge family. The fruits form a white woolly tuft which makes a striking scene on some mires when a lot grow together. Contrary to expectations, the cotton heads are too brittle to make clothes but have been used to stuff pillows and as a wound dressing in the past.

- Height: approx 40cm -





THE MOOR FROG
[RANA TEMPORARIA]
turns from frogspawn to tadpoles to young frogs. Frogs are usually greenish-brown and catch their prey on a long sticky tongue. They feed on spiders, insects, snails and slugs. Frogs are found throughout Europe although they are less common than they were as a lot of small ponds and pools have disappeared. .
- Size: approx. 7 cm -

WOW! THE WORLD LOOKS SO DIFFERENT

Lilian woke up at dawn and yawned loudly. »Where's my bed?« she wondered.

She quickly remembered where she had walked yesterday ›but, wait a minute!‹ This place didn't look anything like the one she'd seen yesterday. Mighty stems rose up high into the sky like an enormous jungle, and ahead of her was a body of water as big as an ocean. Lilian suddenly felt very small. Where was she?

What had happened?
But before Lilian had a

chance to think clearly, she heard a deafening SPLASH and saw a huge green frog land on the grass in front of her. It must have been five times bigger than her. Lilian stood frozen with shock. For a few

seconds, they just looked at each other until the frog opened its mouth. Lilian thought the frog was going to swallow her up like a fly and screamed with fear. Then things happened very quickly.

She saw four huge wings above her and realised she was being lifted into the air. In the spot where she had been standing, a huge frog's tongue groped around in vain, just missing her. »Bother!« she heard a deep, croaking voice say, »Bring back my breakfast!« From above her head Lilian heard a burst of laughter. »Catch me then but you know I'm much too quick for you!« Lilian looked around and then looked down and realised that she was flying through the air!

The strange creature held her firmly but quite gently and they flew away from the giant frog, across the great stretch of water. Once they reached the bank on the other side, Lilian was placed carefully onto a tussock of sedges. In front of her she now saw what had saved her from seeing the inside workings of a frog's stomach! A wonderful looking dragonfly was

looking at her in bewilderment. It had a thin, blue-black body, four wings and two huge eyes.

»Who are you and what are you doing here?« asked Lilian feeling rather silly talking to the animal. The dragonfly answered, smiling:

»I should ask you the same thing, little girl. I just flew past by chance and saw you and Mr Rana, the frog. He grabs virtually anything that appears in front of his nose. He doesn't know that frogs don't eat people, even if they are so small... and I've never come across anyone as tiny as you. Oh sorry, how rude of me, I haven't introduced myself. They call me Miss Azuré. It's pronounced the French way »AH- ZOO - RAY.«

»Hello, Miss Azuré, My name is Lilian. Thank you for saving me from the frog. But can you tell me where I am?«

»This is a mire, Lilian. People use lots of names for these places, Wetlands, Fens, Bogs, Marshes - but they are all different types of mire. It has been years and years since someone lost their way and ended up here. Discover the secret path, did you?«

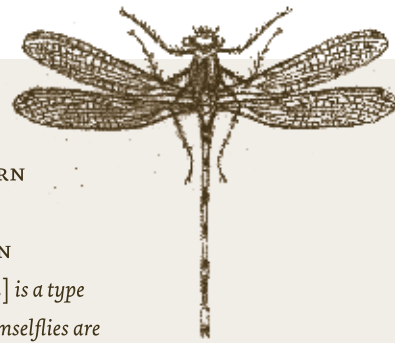
WHAT IS A MIRE?



»I didn't know it was a secret path but it must be the same one«, Lilian replied.
»I followed it for a long time until I reached the water. Then I felt so tired that I stopped for a little rest and fell asleep. When I woke up I was suddenly really small, and everything around me was so big. What happened? I really need to go back home. Gran will be so worried.«

»Don't be scared,« replied Miss Azuré. »All sorts of wonderful things happen here. Things you will only understand if you look more closely. For example, did you know that we are basically just standing on water here?«

»What do you mean? I'm standing on solid ground!«



THE SOUTHERN DAMSELFLY [COENAGRION MERCURIALE] is a type of damselfly. Damselflies are prey-catching insects that feed on other insects. They grow in the water as nymphs before climbing up onto the stem of a plant where they hatch as an adult insect. The Southern Damselfly is a very rare species in Europe due to a lack of grazing in its boggy habitat.

- Size: 4 to 5 cm -

»Well, yes and no,« began Miss Azuré, pleased that her distraction trick was working. »It may seem that way to you, but have you noticed that the ground sways and even caves in when you step on it? It's a bit like walking on an air bed floating on a swimming pool«

»That's true. I have been sinking into the ground with every step I've taken that hasn't been on the wooden path« replied Lilian.

the animals that live here. The mire is also the underground part you can't see. It's made up of lots of layers of rotting plants that fall and die each year, building up on top of each other. But most of all the soil in a mire must be soaked full of water. Mires are like sponges, huge, wet sponges!

That's why it sways when you walk. If you were to squeeze all the water out of a mire, it would shrink by several metres. All the layers of dead plants which are covered by water form a dark layer of soil which is called peat. It's amazing, a new layer of peat is formed in the mire every year and it just carries on growing, making a whole millimetre every year.

And if I tell you that the peat here is over four metres thick, can you work out how old the wetland must be?!«

»Four metres. That's 4000 millimetres.« Lilian paused briefly and then said: »so this mire is 4000 years old. That's astonishing!« »It

is, isn't it? Mires really are time machines. If you were to dig a hole down to the ground underneath the peat, you would have passed through 4,000 years of history.«

»That's it! And do you know something else? The mire is so much more than the plants that you can see growing on the surface and

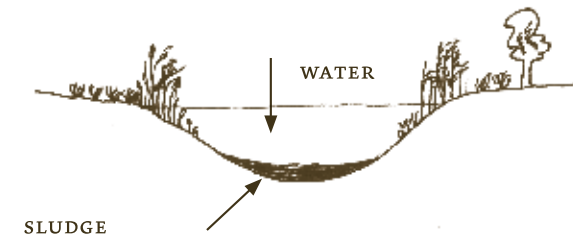


Mires are wetland habitats and can be present anywhere on Earth where there is a constant excess of water. This is especially the case in some parts of Britain, Russia, Germany, Poland, France and Canada. We usually class mires as Fens and Bogs in the UK. The difference between a bog and a fen is that Fens mostly get their water from underneath (groundwater) or along the edges from springs.

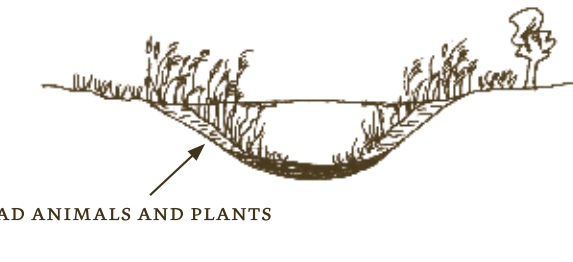
Bogs (or raised mires) get their water mostly from above as rainwater. Mires can be found in all sorts of completely different places. There are mires which form where water trickles off slopes, where a spring emerges, along coastlines, or at the edge of rivers and streams with surroundings that are constantly flooded with water.

Mires are often found where a lake or pond silts up:

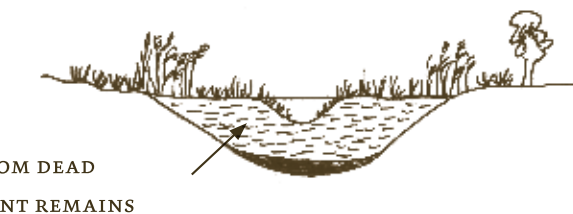
HOW DOES A MIRE GROW?



Plants start growing on and around pools, lakes or ponds and sediment or sludge starts to collect at the bottom of the pool. These include sedges and reeds and very importantly mosses.



As more plants grow, and then die each year dead and rotting plant material builds up in the pool, more mosses and water plants grow on this and add to the build up



Eventually the pool becomes totally overgrown except for a small area in the middle. The dead plant material turns to peat but is still added to each year.

LOOK!
FLYING
DISCOVERY



»I would love to see more of the wetland. I've seen so many new plants and animals here and I'd like to know what their names are. Can you help me?« asked Lilian, forgetting all about Gran worrying at home.

»Why not? It would be great fun Lilian! Hop onto my back.« As Lilian scrambled on to Miss Azuré's back they were already heading upwards, flying right over the wetland.

»Miss Azuré, what are those plants called - the ones that look like huge tufts of grass?« asked Lilian.

»You probably mean the sedges. The sedge family is very popular here. It loves wet ground. There are different types but my favourite is the saw sedge. We have lots of rushes here too.

Some people get mixed up between sedges and rushes but sedges always have triangular shaped stems and rushes all have round stems. This, for example, is the blunt-flowered rush.«

»And what about the green carpet?«
»You mean the moss? Mosses are very small plants which prefer to grow in places where they won't be driven out by tall and powerful plants. They grow together in clumps and can

store a lot of water, but they definitely can't live without it - that one is the commonest on the mire - the yellow starry feather-moss.«

Miss Azuré continued: »Can you see that nest down there between the sedges and rushes? That's where the common snipe, which is a bird, lives. And can you hear the singing over there in the reeds? That's the reed warbler. The pink flower there at the back belongs to a very rare plant - the orchid. There are many, many rare orchids here, the fly orchid is a very cute and clever one.«

They continued their journey of discovery through the mire and after a while Miss Azuré finally said: »Wetlands are home to so many special plants and animals, but one day isn't enough to see everything. Let's rest for a little while.«



THE COMMON REED [PHRAGMITES AUSTRALIS] AND BULRUSH [TYPHA] are reed plants. They grow on the water's edge up to a depth of 1,5 m and form breeding and resting places for many species of animals. These plants rustle in the wind.
- Height: up to 4 m -



THE FLY ORCHID [OPHRYs INSECTIFERA] is very rare species found in mires. The flowers are shaped like little flies or wasps. That's why insects are attracted to them and pollinate the flowers. The fly orchid needs its habitat to be carefully grazed.
- Height: 1,5-5 cm -



THE SAW SEDGE [CLADIUM MARISCUS] belongs to the extensive sedge family and thrives on swampy, wet ground. It forms large, impressive beds in lime rich areas with a diameter of up to 1.50 m. It has sharp saw like teeth to deter animals from eating it.
- Height: 0,8-2 m -

THE REED WARBLER
[ACROCEPHALUS SCIRPACEUS] lives in dense reeds and rushes and builds its nest between the stalks. It is warm brown above and buff coloured underneath. It feeds on small insects, spiders and snails. Its song is rhythmic and melodic. It visits the UK to breed in the summer and winters in Africa.
- Size: 13 cm -



THE COMMON SNIPE
[GALLINAGO GALLINAGO] is a skulking wading bird with short legs and a remarkably long straight bill. Brown above, with paler buff stripes on the back, dark streaks on the chest and pale under parts. In the air they can be recognised by their fast zig-zag pattern. In winter, birds from northern Europe join UK resident birds.
- Size: 25 to 28 cm -



HELP! A STICKY TRAP

As they sat together Miss Azuré explained how important mires were for people. They help provide clean water, and collect rainwater, and so slow down the speed that water reaches streams and rivers, helping reduce flooding. They are also good places to graze traditional farm animals.

She was just explaining how important peaty soils are for absorbing and storing carbon when Lilian noticed the most beautiful yet strangest plant she had ever seen in her life.

It was glistening and shining and giving out an irresistible smell. Its leaves had dainty red stems with crystal clear, round water droplets on the end. They reflected the sunlight in all directions.

Lilian was totally captivated and suddenly felt an overpowering thirst. She wanted to taste the drops of water. Just as her hand touched them, Miss Azuré screamed: »NO! Don't touch!!« But it was too late. Instead of a cool, refreshing drop of water, Lilian's hand sank into a sticky mess, a very sticky mess. Then the leaves started to take on a life of their own.

The red stems transformed into slow but deliberate moving tentacles. Lilian tugged at her hand but she couldn't get it out and the more she struggled, the more tangled up she became in the sticky web of leaves. She was trapped!

The carnivorous sundew plant had played a nasty trick on her with its beauty and its scent. Many insects give into the temptation of the sundew's nectar trap, but now the plant had managed to lure in a particularly juicy meal. »Miss Azuré, help me!« Lilian called out in terror. Miss Azuré flapped her wings nervously. »I can't take my eyes off you for one second! This morning it was a frog, now a sundew!«

She flew over to help Lilian and pulled and pulled her, but the sundew would not let go. Miss Azuré had to get more help, and flew off quickly. Shortly afterwards she came back with her dragonfly friend, Merci.



THE YELLOW STARRY FEATHER-MOSS
[CAMPYLUM STELLATUM] Mosses grow in clumps and are a main ingredient of peat. They are yellow-green to reddish and incredibly important to mires. Mosses hold water and have been traditionally used to soak up blood in wounds.
- Height: up to 10 cm -



THE BLUNT-FLOWERED RUSH [JUNCUS SUBNODULOSUS] belongs to the rush family. These grasses are known for their rigid, rounded and pointed leaves. They are usually hollow on the inside or filled with a spongy ventilation tissue.
- Height: 20 to 80 cm -





THE ROUND-LEAVED SUNDEW [DROSERA ROTUNDIFOLIA] is a carnivorous plant. Its leaves have a number of tentacles which have little glandular heads at the end with a sticky secretion. This attracts small insects, which it then catches and digests.
- Height: about 7 cm -

Together they joined forces and tried to pull Lilian out, but it still wasn't enough. »We need more help. Wait here,« called Merci.

He returned with a butterfly called Fritt, that was orange-brown and chequered

who just nodded knowingly when he realised what was happening. The row of insects gave another big pull, but again, nothing happened. Lilian was becoming really worried when suddenly the group could hear singing in the distance:

» ... and he marched them up to the top of the hill and marched them down again, ooooh the grand old duke of York he had ten thousand men, he marched them up ...«

»That's Captain Cha Maeleon, the soldier fly!« said Merci. And so it was, as the striking yellow and black fly appeared alongside them. The Captain looked around, puzzled. »What's going on here?«

»Please help us, Captain Cha Maeleon!« pleaded Miss Azuré. Now there were two dragonflies, a butterfly and a soldier fly, all trying to free Lilian. But even that wasn't enough. Then along came a little mosquito. She was quietly buzzing to herself.

She had just come from visiting her larvae children in a nearby pool and was happy they hadn't all been eaten by the frog when she came across the strange group.

»Well, well, what's going on here?« she buzzed.

»Oh, Lady Culex-Pippiens, can you help us free Lilian from the sundew?« asked Miss Azuré, who knew that Lady Culex-Pippiens could be very determined.

»Yes, yes, of course. Come on everyone, do as I say...

HEAVE!« Suddenly they all flew free in a large arc, dragging Lilian with them.

She was finally free and everyone burst out laughing. »Oh thank you all so much!« said Lilian.

»Tsssk tsssk!« came a hissing noise from under some leaves.



THE COMMON MOSQUITO

[*CULEX PIFIENS*] is a delicate insect with two wings and long legs. The females have a long proboscis for sucking blood. But they also drink sweet nectar like the males. After mating, the females lay their eggs in water. To begin with, they live here as larvae until they pupate and hatch as mosquitoes.

– Size: 3 to 7 mm –



THE SOLDIER FLY

[*STRATIOMYS CHAMAELEON*], sometimes called the clubbed general it seems to like calcium rich, damp areas. It is classed as endangered in the UK. There are many soldier flies which use distinct yellow and black warning stripes to pretend that they are wasps.

– Size: 14-17 mm –

THE COMMON LIZARD

[*LACERTA VIVIPARA*] is a thin, short-legged reptile. Their main colour is brown, sometimes grey. A dark, dotted stripe often runs along the length of their back. The common lizard feeds on spiders and small insects. It is the northernmost living lizard.

– Size: up to 18 cm –



MARSH FRITILLARY

[*EUPHYDRYAS AURINIA*] is a type of butterfly. Their wings have a chequered pattern of orange, brown and yellow markings. Marsh fritillaries are the UK's most colourful fritillary species but also one of the most endangered. The bright colours fade after a few days of emergence. Butterflies start out as caterpillars that feed on leaves (marsh fritillaries choose the leaves of the devil's bit scabious plant) until they turn into solid pupae, then finally hatch into adult butterflies. They have a long proboscis which they use to drink flower nectar.

– Wingspan: 3 to 5 cm –



AN UNEXPECTED VOICE

»This really isn't right! You've been helping a human, when all they do is ruin everything for us! You should be ashamed of yourselves! You should have left her for the sundew!«

These words came from Mr Vivipara, a common lizard. He was quite old and was thought to be very wise, but he was also rather grumpy.

Lilian was scared of the bad tempered lizard, especially as he was a lot bigger than she was and had a very long tongue! Miss Azuré, who by now had grown rather fond of Lilian said: »That is such a mean thing to say! This girl hasn't done anything wrong.«

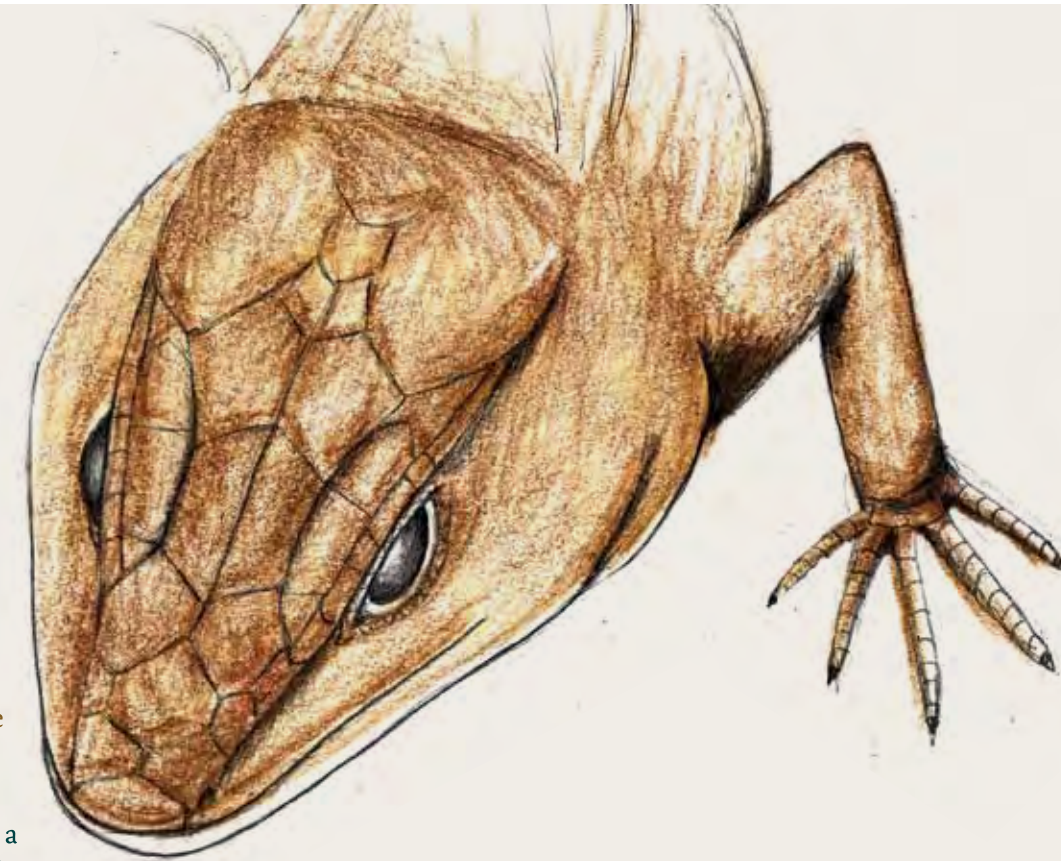
The grumpy lizard and the helpful creatures of the mire became very quiet and started to

move silently away. Finally, only Lilian and Miss Azuré were left behind.

»What did Mr Vivipara mean when he said that humans destroy everything?« Lilian asked cautiously.

»You'll have to forgive him, Lilian,« replied Miss Azuré. »Our little kingdom is threatened and unfortunately it is people like you – human beings – that we have to worry about.«

»Why?« Lilian asked, shocked.



MIRE TREASURES



»It's such a long story Lilian and goes way back. Very early on humans realised what treasures could be found in mires and started to use them for themselves. About 4,000 years ago, during the so-called Bronze Age, they started to extract peat. You remember the layer of peat beneath the ground, do you? They would dig it out in little squares and dry it.

»Why would they do that?« asked Lilian.

»To use it on fires for cooking food and keeping warm. Some people still do it now«, said Miss Azuré. »Many centuries later humans also began draining water from the mires with ditches and pipes to use them as farmland.

In the beginning the mires could cope, but as more drains were dug, and as more pollution was washed in from outside the peat started to break down, the plants died and the animals left. The mires were drying up.

This is what has happened to most of the best mires across Europe. It's still happening today, even though there are so few left.«

»That really is sad for you«, said Lilian.

»It's sad for humans, too«, replied Miss Azuré. »Many people don't understand how much they rely on places like this. You remember that mires act like a huge sponge, do you? We need mires to store and filter water for animals and for people to drink. These giant sponges also trap and slow down the

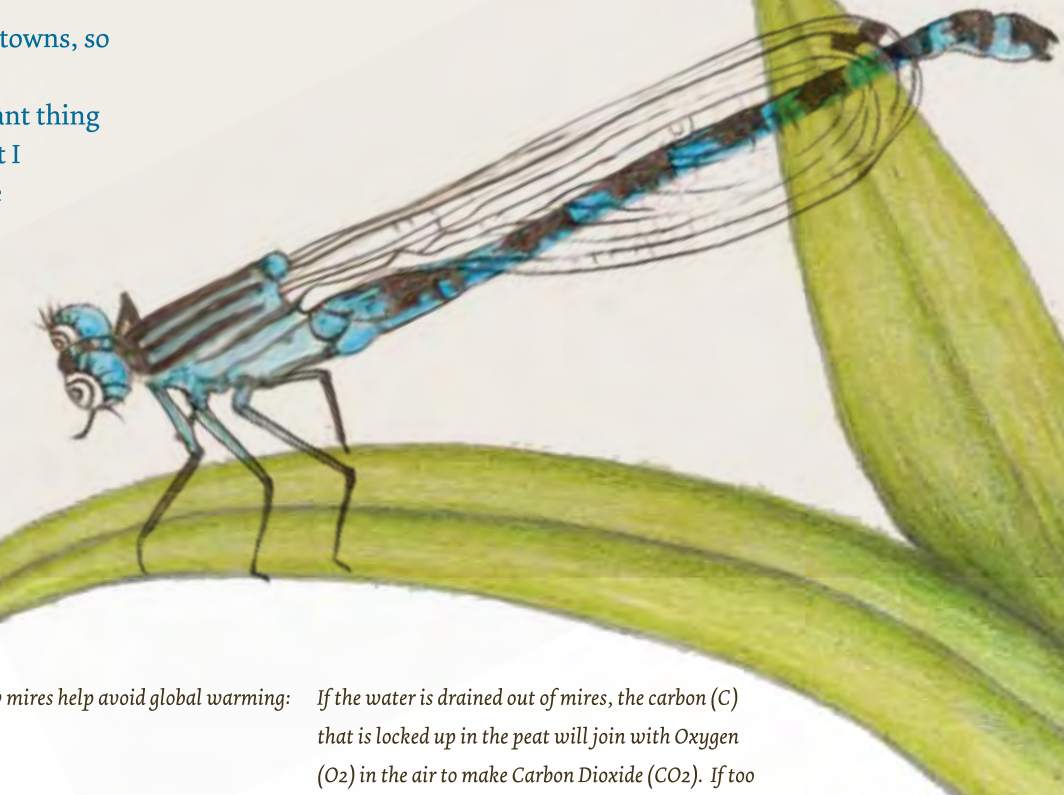
speed at which rainwater flows into towns, so they help reduce flooding.

And there is another very important thing about mires. Do you remember what I was telling you when you were more interested in the sundew? Well, have you ever heard of carbon?«

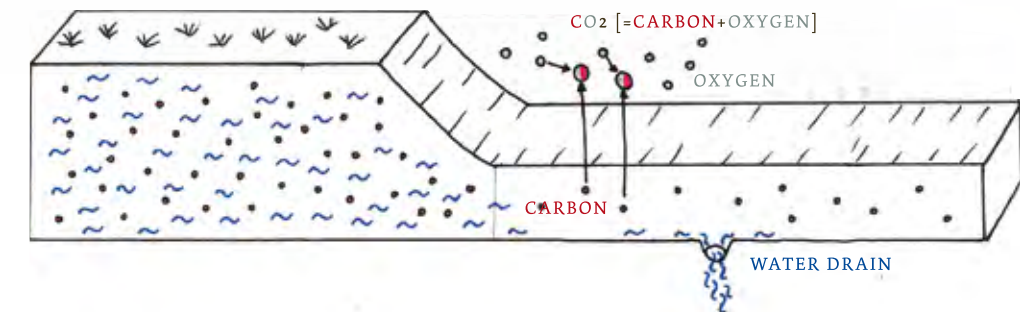
Lilian shook her head.

»It's a chemical that is locked up in peat soil. There is more carbon inside the soils of a small country like Wales than there is in all the forests of Germany and France put together!

But if the peat dries out or gets polluted it releases its carbon which means that the planet gets warmer and warmer.«



How mires help avoid global warming: If the water is drained out of mires, the carbon (C) that is locked up in the peat will join with Oxygen (O₂) in the air to make Carbon Dioxide (CO₂). If too much CO₂ collects in the atmosphere then global temperatures rise.



MIRES – IRREPLACEABLE HABITATS

»You see Lilian, mires are very special places and lots of the animals and plants that I've shown you cannot be found anywhere else.

The common snipe we saw needs the sedge plants and water to build its nest. It wouldn't be able to live anywhere else. That goes for so many other species I haven't even shown you, like the common butterwort over there,

or – look! – the bog asphodel. So every time a piece of wetland disappears the creatures and plants that live there begin to disappear too. Now do you understand why it's so important to save the last existing mires?»

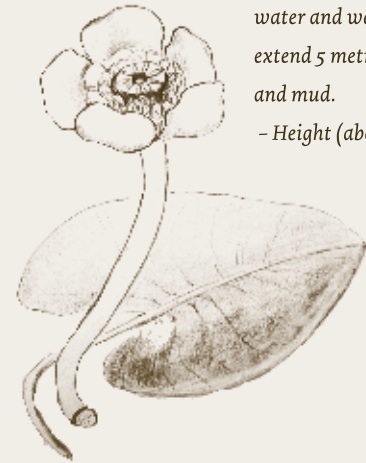
»No wonder Mr Vivipara the lizard was so bitter« said Lilian, »I can see now how unique and irreplaceable wetlands are! Miss Azuré, we need to save the last existing mires!«

Miss Azuré knew only too well how right Lilian was.





THE COMMON BUTTERWORT
[PINGUICULA VULGARIS]
is, like the sundew, a carnivorous plant living in mires. Its leaves are arranged in a starfish shape and it is topped with a purple funnel shaped flower. The leaves are coated in a slimy buttery feeling substance that traps small insects which it then digests.
- Height: 3 to 16 cm -



THE YELLOW WATER LILY
[NUPHAR LUTEA]
is an aquatic plant. It has large, cup-shaped yellow flowers and saucer-like leaves which float on the water surface. It's found in shallow water and wetlands. Its roots can extend 5 metres down into the water and mud.
- Height (above water): 5 to 7 cm -



THE BOG ASPHODEL
[NARTHESIUM OSSIFRAGUM] is a small perennial plant with sword-shaped pointed leaves and slender bright yellow flowers which turn rust orange at the end of the summer. It grows on wet, boggy ground low in calcium.
- Height: 10 to 30 cm -



A YELLOW NAMESAKE

Lilian was deep in thought for a long time. She'd seen and learnt a lot that day. As it was starting to get dark again Miss Azuré said:
»Come with me, Lilian. I want to show you something special before I take you back.«

They flew off one last time. From Miss Azuré's back, Lilian saw that the setting sun was turning red.

Finally, they reached a place dotted with yellow. »You see these plants?« asked Miss Azuré. »These are lilies, just like you. They are so beautiful that I wanted to show them to you.«

»They're wonderful«, said Lilian and she made herself comfortable on a big green leaf.

Her eyes watched the swaying yellow blooms and she fell asleep, exhausted and happy.

LILIAN BECOMES A MIRE ASSISTANT



Lilian woke with a start, something harsh was scratching her cheek. It was Oscar the cat. Just then, Gran came around the corner, smiling at Lilian. Lilian jumped up and said:

»Gran, I'm so happy to see you! I'm so sorry I was away for so long! I was in the mire and was almost eaten by a frog, but Miss Azuré the dragonfly saved me and ...«

»What are you talking about? I think you've been dreaming!« smiled Gran. »You've just been lying there on the garden bench. You were asleep all the time I was away.«

»Sleeping? But I was away for at least a day and night.« Lilian looked out beyond the garden fence, puzzled.

»Was that all really just a dream?«

»Come in the house and you can tell me all about it while we put the shopping away«, suggested Gran.

That evening they sat together in the kitchen for a long time and Lilian told Gran her incredible adventure. Gran listened carefully

and Lilian noticed that now and again she had a conspiratorial and knowing smile play across her lips. But she didn't say anything and just smiled. She was happy to know that her own adventure in the mire a long, long time ago hadn't been just her imagination.

Lilian often went back to her Gran's house in the summer. Together they visited the mire and always discovered new things. Whether they ever saw Miss Azuré and the other inhabitants of the mire again, well, that remains their secret.

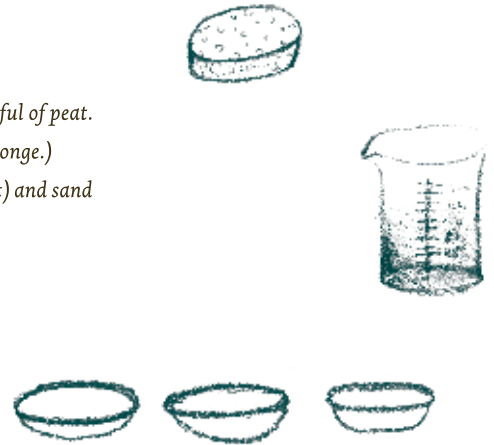


EXPERIMENT

EXPERIMENT: MIRES AS WATER TANKS

you need the following material:

- * a sponge as a substitute for peat
(Just imagine the sponge being a handful of peat.
As you remember mires work like a sponge.)
- * a handful of normal soil (without peat) and sand
- * water
- * 3 bowls (or 3 plates)
- * 1 measuring cup
- * 1 towel to clean your hands



METHOD

1. Put each soil type (sponge, sand, soil) into a different bowl.
2. Carefully pour water onto each soil until it cannot soak up any more, then leave the soils for a few minutes so that they can absorb some more.
3. In the meantime on the table here note your thoughts about which you think will be able to store the most water.
4. Take each soil one by one and squeeze the water out of them into the measuring jug and note the amount in the table.
5. Look at the table and see which was able to store the most and see if your suggestions were right.

	Sponge (as a substitute for peat)	normal soil	sand
suggestions			
measured amount of water in millimetres (ml)			

QUESTIONS TO THINK ABOUT:

- * WHY CAN MIRES STORE SO MUCH WATER?
- * WHY ARE MIRES COMPARED TO SPONGES?
- * WHY CAN MIRES HELP REDUCE FLOODING?

With friendly permission from: FOOS, EVA, Nadine NUSKO, Thomas AENIS, Jutta ZEITZ (2008): 27 Bildungsmodule zum Thema Moor. Materialband, 167 Seiten. In: FOOS, Eva, Nadine NUSKO, Thomas AENIS, Jutta ZEITZ (2008): Erlebnis "Moor". CD. Humboldt-Universität zu Berlin. Elektronische Veröffentlichung im Eigenverlag.

PROTECT MIRES! – BUT HOW?

WHAT CAN WE DO TO PRESERVE AND PROTECT MIRES?

It is exciting to experience mires for yourself. You will be amazed how many things there are to discover. Of course, you should only go to wetlands which are safe to visit, look on the internet for organisations that have special boardwalks and wetlands to visit.



When visiting mires, please be careful and try not to disturb nature, and keep to the proper path – Lilian was lucky, she could have easily sunk without trace into the wet peat or a pool of water.

Ask your teachers to arrange a visit to a local wetland where everyone can learn and see how important they are.



Do you like helping your parents in the garden? Peat is still extracted in huge quantities and used for garden compost. We should all avoid buying peat based products as there are plenty of good alternatives available nowadays, such as compost, bark humus, wood and coconut fibres.



Spread the word and tell your family and friends just how important mires are for animals, plants and people.



To support frogs, you can make a small pond in your garden which will be good for them, and good for you as they eat a lot of insects, snails and slugs.

Its great to hear them croaking in your pond in the spring.

This booklet is a collaboration between 2 EC Funded LIFE Nature Projects and one Youth Association. Two in Germany and one in Wales. Working together right across Europe is the only way to make sure that everyone gets the best out of nature sites.

THE ANGLESEY AND LLŶN FENS LIFE PROJECT

The Anglesey and Llŷn Fens LIFE Project is the largest wetland restoration project in Wales.

The main aim is to restore or improve 751 hectares of very rare fen habitats, which depend on a delicate water balance and limestone springs that flow into the peat.

Creating strong partnerships with local communities is at the heart of the project – as is a commitment to developing opportunities for local businesses and the local economy to thrive.

Improving these internationally important sites for nature will also improve our water quality, help reduce flooding, help combat climate change and bring derelict land back into production.

NATURAL RESOURCES WALES

Natural Resources Wales brings together the work of the Countryside Council for Wales, Environment Agency Wales and Forestry Commission Wales, as well as some functions of Welsh Government.

Our purpose is to ensure that the natural resources of Wales are sustainably maintained, enhanced and used, now and in the future.

MORE INFORMATION:

www.angleseyandllynfens.com

www.naturalresourceswales.gov.uk

ALKALINE FENS IN BRANDENBURG

From 2010 to 2015 the LIFE Nature Project "Alkaline Fens in Brandenburg" is currently being implemented by "Naturschutzfonds Brandenburg" a public foundation of the federal state of Brandenburg.

With this project, the "Naturschutzfonds Brandenburg" manages conservation activities intended to secure and develop the largest alkaline fens in 14 Natura-2000 areas. The Naturschutzfonds is supported by the regional authority for environment, public health and consumer protection as well as four private nature conservation foundations and societies.

MORE INFORMATION:

www.kalkmoore.de

THE NAJU BRANDENBURG

The NAJU Brandenburg (Youth Association for the Protection of Nature) is one of the youth divisions of NABU which are active in each federal state throughout Germany. The NAJU is Germany's largest young people's organisation for the protection of nature and the environment. The main goal of NAJU Brandenburg is to protect biodiversity and to conserve the natural foundations for human life through a range of active conservation measures.

MORE INFORMATION:

www.naju-brandenburg.de



MORE ABOUT LILIAN AND HER ADVENTURES:
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