

Kristianstads Vattenrike Biosphere Reserve Activities 2024



Kristianstads Vattenrike is a Unesco-designated biosphere reserve that serves as a model area for sustainable development. There are some 700 biosphere reserves worldwide, seven of which are in Sweden.

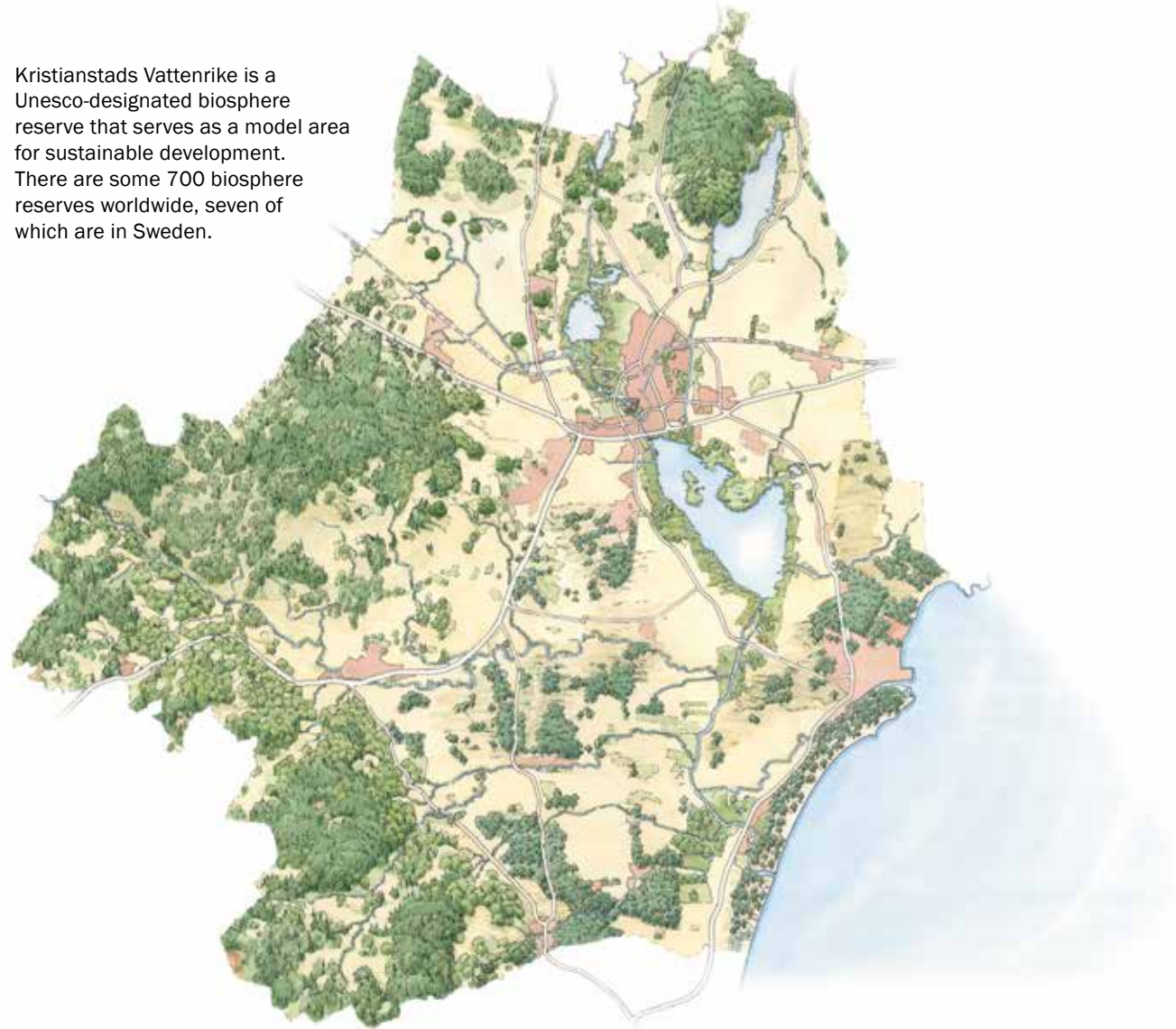


Illustration: Carina Lindkvist Naturcentrum AB

Kristianstads Vattenrike Biosphere Reserve

Kristianstads Vattenrike Biosphere Reserve (Vattenriket) occupies most of the municipality of Kristianstad. This rich cultural landscape is endowed with almost every type of natural habitat to be found in Sweden.

The majestic River Helge å is a central feature. Fed by streams from the ridges and plains, it flows into Lakes Araslövssjön and Hammarsjön before reaching the sea in Hanöbukten Bay. The river is fringed by wetlands and seasonally flooded grasslands, but there are also leafy forests and dry sandy arable lands within the reserve. Such variety creates numerous nat-

ural habitats: the species-rich reserve, less than one fifth of one percent of the area of Sweden, is a refuge for some 20 % of the nation's red-listed species. Kristianstad Municipality is committed to making the biosphere reserve a model area for sustainable development. Producing and sharing knowledge about the landscape and nature is crucial for an ecologically, economically and socially sustainable society, so we make inventories, publish reports, work with researchers, host conferences and welcome some 90,000 visitors a year to the naturum Vattenriket visitor centre. We collaborate with local associations, companies and landowners to use and conserve natural values. We create wetlands and restore sandy grasslands. Species diversity and efficient ecosystems help us to cope better with challenges such as climate change.

Enabling people to experience nature inspires them to help conserve it. Vattenriket has some 20 visitor sites with observation towers, marked trails and outdoor museums. The jewel in our crown is the naturum visitor centre with exhibitions, a meeting room, restaurant and wide programme of activities. Here we explain how the biosphere reserve works and encourage visitors to explore the area for themselves. Results have been positive. At the Pulk-en visitor site, migrating cranes, visitors and farmers co-exist in harmony. Cat-fish have been successfully reintroduced into the river, and otters fish close to the naturum. Thanks to a new-found respect for natural values, the wetlands are no longer seen as a problem, but as a valuable resource for Kristianstad – proof of a new insight into how we use our natural assets.

2024 – The year in review

2024 can best be described as a year of commitment, collaboration and progress. A new theme, 'Nature's Smart Solutions', has inspired interest in how nature responds to social challenges, while projects like the construction of wetlands at Fredriksdalsviken that reduce iron and aluminium levels in the water demonstrate how we can work together with nature to strengthen local ecosystems.

Throughout the year the naturum visitor centre supported our new theme with many interesting programmes, not least through lectures and activities focusing on biomimetics, nature's own problem-solving strategies. Also, the spectacle of colourful crocheted tree stumps and embroidered mosses in the naturum, and other creative programmes featuring everything from 'cunning cones' to 'smart spiders', inspired visitors to delve deeper into nature's treasure trove of ingenious solutions.

Particularly encouraging was the project 'Imagining a Sustainable Future in Vattenriket'. This shared vision of the year 2040, with people and nature living in harmony within the limits of our planet's

resources, inspired hope and confidence in a future that is achievable, if we choose to make peace with and work together with nature.

A special thank-you must also go to our biosphere ambassadors, crane wardens and the Friends of Vattenriket, whose contributions mean so much. In addition to generously sponsoring buses to take school classes out into the biosphere reserve, the Friends helped breathe even more life into the exhibition at Lillö. Their work in keeping Lillö Castle open all summer is invaluable for our visitors' overall experience of the Linnérundan Trail.

We have again met many groups at local, national and international level in 2024 and shared our experiences and successes through worldwide networks such as EuroMAB in Germany. It is always an inspiration for us to describe how our work can serve as a model for others and to learn from the experiences of other biosphere reserves across the world.

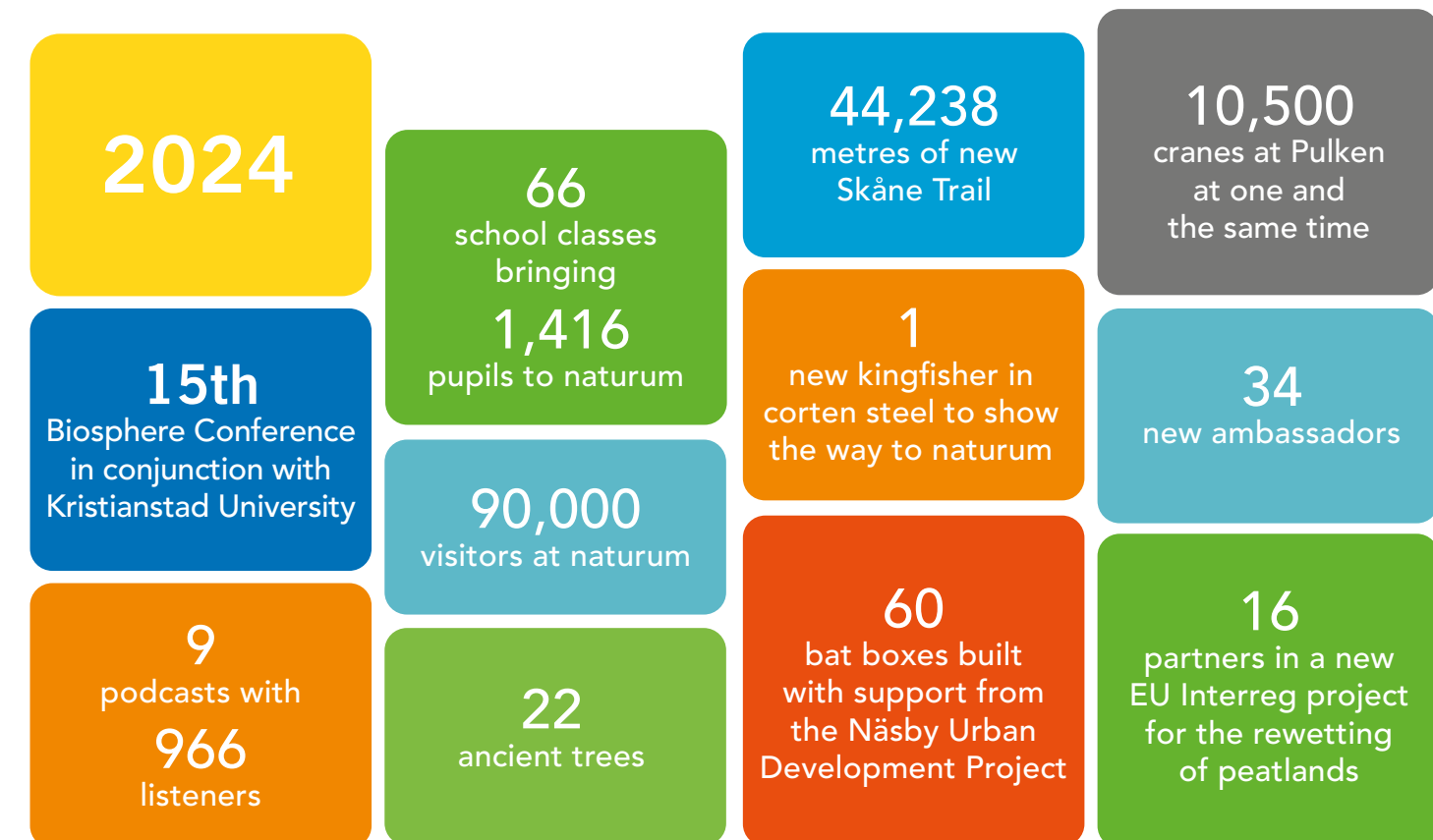
More exciting new challenges now await in 2025, as we produce a 10-year evaluation report for Unesco, formulate our

next action plan and, not least, celebrate 20 successful years of activities in Kristianstads Vattenrike. With nature's many smart solutions to guide us and a firm and passionate commitment from all those involved, we look forward to continuing to chart a path towards a sustainable future.



Carina Wettemar

Carina Wettemar
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What does your future look like?



Collecting positive ideas



Recording a podcast at Vramsån

Imagining a sustainable future in Vattenriket

Imagine a future that is as fantastic as you wish it to be.

If we make peace with nature and work together with nature, we can respond to the challenges of climate change and achieve the global aims. Our forward-thinking 'What if ...' process inspired hope and confidence in a sustainable future.

Climate change, biodiversity loss, escalating social inequality ... Today's world seems bleak at times. But what if there were a path to a much better future? What if we dare to look beyond today and imagine a future world that we want to live in? A future that is bright and promising for both people and nature.

The Biosphere Office invited employees, researchers, experts and others to envis-

age what the future might hold for Kristianstads Vattenrike. The result? Neither dystopia nor utopia, but a future that can be bright, provided we do what we know needs to be done.

'What if ...' is one example of how Vattenriket can point the way to a future where quality of life is enjoyed within the limits of what our planet can sustain. In spring, journalist and process leader Abigail Sykes

held workshops with staff and other Vattenriket stakeholders, using the 'What if ...' concept to paint an appealing vision of the future. What emerged now forms part of the groundwork for our new action plan.

Participants appreciated meeting and exchanging ideas with knowledgeable and enthusiastic partners, and many expressed their gratitude for the positive, constructive scenario that this way of working together inspired.

Comments from participants in the 'What if ...' process:

"It's good to base thinking on a positive yet realistic scenario. A great reassuring vision to aim for"

"Fun to envisage the future in so positive and constructive a spirit."

"Positive to let your thoughts fly free. Challenging, creative. Both realistic and fanciful."

A vision: "It's very green. Lots of water. A watery landscape. Fragrant flowers all around, birdsong in the air, the buzz of insects, fish splashing in the water. Bees and butterflies have returned. Invasive species are gone. At last, people now understand the value of biodiversity."

Communication and dissemination

To expand and communicate the project Abigail also created a series of 'What if ...' podcasts, collaborating with local and national experts to sketch out a road map for a sustainable future for Vattenriket with lifestyles that do not deplete the planet's finite resources.

In addition to sharing the project's aims and outcomes through press releases, blog posts, e-newsletters, social media and on the Vattenriket website, Abigail hosted a digital workshop for the general public as part of the naturum visitor centre's 'Future Week' programme. A full report of all the project results was produced for both national and international networks, and Abigail also led a workshop detailing the project's activities at the EuroMAB conference in Germany.

Residens Framsyn

'Residens Framsyn' is a foresight initiative from Sweden's innovation agency, Vinnova. Various experts are invited to help organisations understand and manage future questions, such as technology trends and social change.



The podcast 'What if ...'

... the yellowhammer taught us how to count
About how nature pedagogics promote learning and well-being, how the biosphere reserve's visitor sites make ideal outdoor classrooms, and how to study subjects on the school curriculum in natural surroundings – in context and with all our senses.

... we could grow our minds by growing our food
About how cultivating plants helps us to understand our place in nature and the ecosystem, how cultivating together strengthens a sense of community, integration and social justice, and how regenerative agriculture has a positive impact on the environment and soil carbon sequestration.

... wetlands are the answer to climate issues
About how peatlands store more carbon than the rain forest, how emissions from Sweden's drained wetlands are as great as those from all of Sweden's road traffic, and how the right rewetting initiatives can stop CO2 emissions and store carbon in the soil.

... the Baltic Sea was teeming with life
About how eelgrass prevents eutrophication and mitigates climate change, how predators like pike and perch play a key role along the Baltic coast, and how important it is to stop peeing in the sea.

... we chose to let nature heal us
About how natural sunlight protects us from disease, how nature cheers us up and improves our concentration, plus tips for simple exercises to help us harness the healing power of nature.

... nature was in charge of urban planning
About how child's play can be an equalising factor in green surroundings, about the importance of biodiversity in urban environments, and inspiring examples from pocket gardens and Swedish municipalities with biodiversity advisors.

... pollinators predominated on the plain
About how there are up to 50 species on every square metre of grazing land, how food prices are linked to biodiversity, and how critical the situation is for Sweden's wild pollinators— although most species can be saved, if we act quickly and wisely.

... we rethought the way we do things
About how working together with nature creates values for us all, how the business sector plays a key role in sustainability, and how dialogue and creativity can turn an 'impossible' situation into a win-win solution, with lots of actual examples from Kristianstads Vattenrike biosphere reserve.

Available wherever you get your podcasts and on the Vattenrike website.

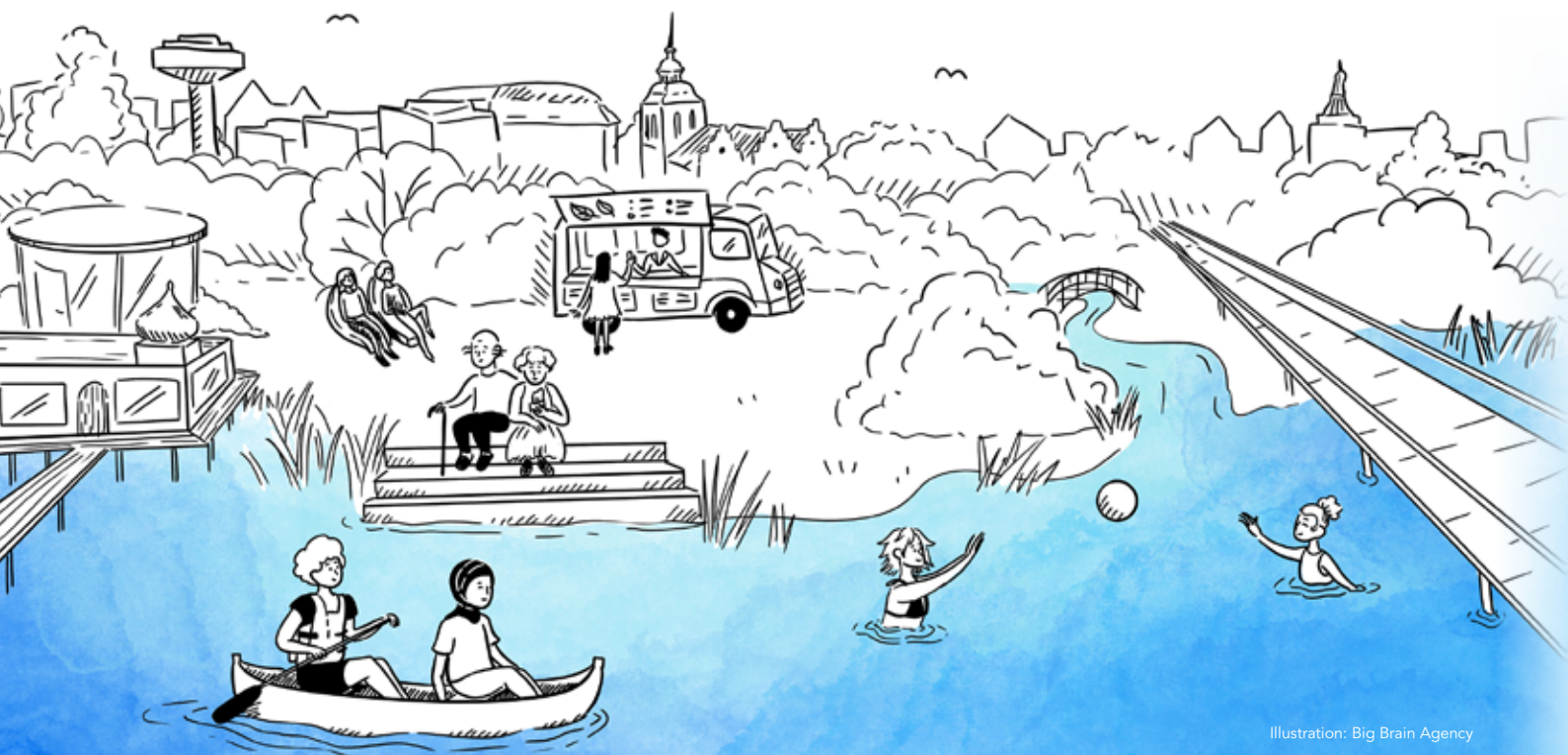


Illustration: Big Brain Agency





Nature's water treatment plant
Wetlands absorb nutrients, and remove particulate matter and humus from the water. The facility at Fredriksdalsviken uses natural processes to reduce the leaching of iron and aluminium.

Photo: Patrik Olofsson/N

Nature's solutions lead the way

In 2024 our new theme, 'Nature's smart solutions', focused attention on nature-based solutions to meet the challenges facing society. We developed strategies for teaching biomimetics and helped naturum visitors to discover nature's own astonishing array of ingenious solutions.

'Supported by nature' is one project embracing the new theme and aims to increase understanding for how nature-based solutions can improve conditions in the Baltic Sea. Kristianstads Vattenrike biosphere reserve is one of 17 learning sites in nine countries around the Baltic that will focus on multifunctional wetlands, coastal habitats and watercourse restoration.

Measures include initiatives for improved water quality and climate-adapted spawning areas for sea trout in the River Mjöån.

To support plant and animal life, a stone reef has been laid in the sea off Åhus and textured stone slabs are now in place in the harbour. The EU-funded Interreg project began in February 2024, with sites identified and actions undertaken in consultation with the authorities involved.

Nature-based solutions to reduce iron and aluminium levels in water
On Kristianstad Plain, as elsewhere in Sweden, land is drained for agriculture. In some places water pumped up and channelled away in ditches is high in iron, aluminium and other metals harmful to flora and fauna.

Autumn 2024 saw the construction of Sweden's first wetland specifically designed to sequester iron and aluminium through natural processes. The Fredriksdalsviken facility has deep areas where metals can sediment and shallow basins where the water is oxygenated and metals are absorbed by the vegetation. This prevents leaching into the River Helge å and also benefits the local ecosystem.

The project, led by the Biosphere Office in collaboration with the Eel Academy, Råbelöf AB, the County Administrative Board of Skåne, Kristianstad University and

the Rural Economy & Agricultural Society, is funded by Region Skåne, Absolut Company, KLF agricultural cooperative and others.

The new theme was in evidence at the naturum visitor centre with activities for young families and the general public, and educational sessions for school classes and teachers-to-be.

Biomimetics (from the Greek bio, 'life' and mimesis, 'imitation') is a term explaining how we solve human problems by looking at nature's solutions. In collaboration with Kristianstad University, nature educator Sam Peterson informed trainee middle-school teachers how they can integrate examples of nature's smart solutions into lessons to inspire pupils and raise awareness of the resourcefulness of the natural world. Biomimetics demonstrates the validity of sustainable development, points the way to solutions and offers hope.

Also, with support from Kristianstad's Health Garden, visitors to naturum were able to learn from nature how to enrich the soil in their flower beds and create drought-resistant gardens that look beautiful all year round.



Studying biomimetics



Enriching soil the natural way



Horticultural hints from the Health Garden

Inspired by Vattenriket's nature

Cunning cones and smart spiders are just two of Vattenriket's many life forms that visitors to naturum discovered more about in the year's activities. One fascinating experiment showed how different plants use the wind to spread their seeds far and wide.

Nature guides spun the Copy Nature wheel to reveal natural solutions that have inspired smart human inventions. And there are many more fantastic plants and animals with lots yet to teach us.

Some of Vattenriket's visionaries



Kingfisher
The shape of the kingfisher's beak solved noise problems for Japan's bullet trains.



Large blue butterfly
The scales on this butterfly's wings have inspired the eco-friendly production of coloured textiles.



Burdock
Hook-and-loop fasteners are modelled on the burrs of the burdock plant.



Roudback slug
The slug's slime prompted the idea for a medical adhesive used when operating on animals.

Tawny owls
Owls fly almost without a sound. Their wings have inspired solutions to make wind turbines quieter.



Long live our trees!

Trees play a key role in the ecosystem. By offering shade, cleaning the air and mitigating rising temperatures, large old trees provide multiple ecosystem services. In 2024 the Biosphere Office began to mark these ancient trees, which are so important to preserve.

Even when they die, trees are important for mosses, lichen, fungi, insects and other organisms that live in the decaying wood. Modern landscapes are lacking in old trees and dead wood, so marking ancient trees is one way to protect them, preserve biodi-

versity and increase awareness of the trees' role.

In 2024 the Biosphere Office, municipal Land Development Unit and Parks & Recreation Department marked more than 20 heritage trees. There are special criteria that define a tree as 'heritage tree'. Private individuals with trees that meet these criteria can apply to have a badge and a diploma for their tree.



A fantasy forest in wire and textiles at naturum

In autumn, while artist Sandra Magnusson's crocheted tree stumps and embroidered mosses temporarily took pride of place in the naturum exhibition, visitors could also study real mosses close up and conduct their own experiments to see how much water moss absorbs.

By bringing the forest into the visitor centre, Sandra showed there are many ways of coming closer to nature. Her work served as a creative reminder of how good it feels to breathe in the scent of pine needles and relax on a bed of moss.

With a focus on the forest's potential as a source of strength, inspiration and joy, Sandra used mosses, stones and sticks to inspire participants in two fully booked art embroidery workshops and create a closer bond with nature.



It's true! Nature gives us that feelgood sensation

Katja Malmberg (Bergen University) and Marleen Schwarze (Stockholm Resilience Centre) conducted a participant-based survey, using a questionnaire to assess how residents and visitors rate the many landscape values in Vattenriket.

163 respondents specified sites and answered questions about how nature contributes to their well-being. This provided the basis for identifying hotspots for the biosphere reserve's cultural, provisioning and regulating ecosystem services.

Recreation ranked highest, with Vattenriket's visitor sites among the hotspots, along with the area's hiking and biking trails. The result offers clear proof of the enjoyment many people derive simply from being in natural surroundings.



From Adventure Scouts to Biosphere Heroes

Some 20 Adventure Scouts from Vä met at Ekenabben for their first ever Bat Safari – the first in a series of meetings arranged with the Biosphere Office. In May the scouts can add a new activity badge to their uniforms – as the first cohort of biosphere heroes.

The Biosphere Office initiated the project to stimulate young people's interest in nature, deepen their knowledge of the biosphere reserve and provide opportunities to acquire new skills, for example by making quill pens and practising wire craft. After seven meetings at various Vattenriket venues the scouts can claim 'biosphere hero' status.

The aim is for scouts to learn more about Vattenriket, maybe find a new favourite spot in their local surroundings and better understand the interrelationship between people and nature.



The year in review



Forestry policy supports sustainable management

In 2024 Kristianstad Municipality published its Forestry Policy. The document, drafted by the Biosphere Office and the Land Development Unit with input from a reference group, marks a shift towards continuous cover forestry, which not only benefits biodiversity and climate stability, but public health too.

The policy covers 1,200 hectares of municipal forest on reserved land, providing guidance for sustainable forest management and serving as a basis for future forestry plans, without leading to new costs. Forest management should cover its costs but be free from financial return pressures, instead re-investing revenues in measures to benefit conservation and outdoor recreation.

The aim is to increase the proportion of broadleaf species and reduce clearcuts to create more varied and resilient forests that provide pleasant recreation areas. The policy also provides support in dialogues with private landowners about forestry management techniques.



Assessing and repairing Vattenriket's birdwatching towers

Most of the birdwatching towers at Ekenabben, Hercules, Norra Lingenäset, Pulken and Åsums ängar, were built in the late 1980s or early 1990s. After years of providing a way for visitors to enjoy the surroundings and rich birdlife of Vattenriket, in 2022 and 2023 a thorough inspection of the structures was undertaken, based on their age, visitor numbers and recommendations from those responsible for maintenance. The final report issued early in 2024 pointed to defects, some of them serious, in all towers. Three of the towers – at Härlövsborg, Lerduvetornet at Näsby and the small tower at Åspet – were in such bad condition that they had to be taken down. Others – at Ekenabben, Hercules, Norra Lingenäset, Pulken and Åsums ängar – were repaired during the course of the year.



Naturum contributes to climate research

The Swedish Centre for Nature Interpretation asked Sweden's naturum visitor centres to test a variety of methods of working with climate issues. Naturum Vattenriket took part in a project focusing on nature's seasonal changes.

The project included establishing a photo point along the Linnérundan Trail, some 200 metres from naturum towards Härlövsängaleden. Here a post was erected encouraging people to take a photo and send it to the Swedish University of Agricultural Sciences (SLU). Since the start in May some 357 photos have been uploaded, charting changes in the colours of nature that have helped SLU researchers to analyse how plants adapt to seasonal and climatic changes.

Naturum Vattenriket also led local walks to shed light on Mother Nature's calendar, and staff acted as 'phenology monitors', recording the natural cycle of trees – flowering, leafing and autumn leaf development – close to naturum. Observations of birds in the immediate area were also reported to SLU.



Fresh Air & Fun in the busy beating heart of the city

For the second year in succession Kristianstad Culture & Leisure Administration, the Biosphere Office and local associations arranged a Fresh Air & Fun event, this time close to the city centre. On 18 May, by the Kanalhuset outdoor museum and in a Tivoli Park filled with sunshine and birdsong, visitors could test their skills at hand-netting, fishing, canoeing, birdwatching, mountain biking, disc golf and grilling marshmallows. Tivoli Park was chosen as a venue as it is a popular urban green space, close to public transport. Spontaneous visitors had opportunities to observe the park's birdlife, erect tents, test mountain bikes, taste fluffy dessert pancakes and much more besides. A quiz walk led to the Kanalhuset outdoor museum, where naturum staff were hand-netting small invertebrates. The day's events also included a Trash Blitz for litter pickers and the official inauguration – with speeches and much applause – of the SL6 Vattenriket subtrail of the Skåne Trail.

Skåne Trail's SL6 Vattenriket subtrail inaugurated

It started with a citizens' initiative. The Biosphere Office drafted a budget proposal, the Municipality invested SEK 2.6 million and the state SEK 650,000. On 18 May 2025 Camilla Palm, Chair of the Municipal Executive Committee, and Anna Jähnke, Chair of Skåne's Regional Development Committee, inaugurated the Skåne Trail's SL6 subtrail. It runs from Vattenriket's northern forests, past Lakes Råbelövssjön and Araslövssjön, along the River Helge å to the naturum visitor centre in the city, then past Lake Hammarsjön and across the plain to Hanöbukten Bay, before turning inland again to Degeberga's rolling hills.

Passing ten visitor sites with information boards, birdwatching towers and picnic areas, the route is a sustainable way to experience Vattenriket's natural values. A local nature conservation initiative paved the way for three new attractions along the subtrail: a Story Trail at Norra Lingenäset, a 'Frog Hop' activity circuit at Ekenabben and a display of nesting boxes for birds, bats and insects near the naturum visitor centre.



Fearless visitors find out what pike prefer to eat

In summer a big, greedy pike moved into the naturum visitor centre to replace the previous display of fishing flies, and took up residence next to the aquarium. Since then fearless visitors have been able to offer the pike different things to eat. This fishy fare – everything from bleak and crayfish to pine cones and fishing lures – is greeted with a 'Mmm ... that's yummy!' or a disappointed and disgusted 'Yuk!'

The pike, carved in wood and painted by Vesa Jussila, is mounted against an underwater scene with sunlight filtering through water lily leaves. The foods are illustrated on a selection of different spatulas, each with a magnet that activates the appropriate sound effect when placed in the pike's mouth. The excitement of feeding and the pike's audible replies have created a popular attraction that helps young visitors learn more about Vattenriket's most important predatory fish.



Årummet outdoor museum reopens after the fire

The Årummet outdoor museum reopened in May. Once again we could stroll along the boardwalk and sit in the hide to enjoy the wetland plants and birds: yellow iris blooming among the reeds and the sounds of nightingale and cuckoo.

After the fire at Årummet in September 2022 many of us had missed this city-centre portal to the magic of the reedbeds. A decision was soon made to reconstruct the popular visitor site, but work to restore the area and recreate the exhibits took time. Also, while the original appearance and function were retained, the boardwalk was expanded to enable larger groups to gather in the hide. Openings at different levels offer fine views over the wetlands, pond and cityscape beyond. Vesa Jussila's wooden carvings of greylag geese at the entrance to the hide, and the illustrations by Carl Christian Tofte and Emma Anderssons enable visitors to easily identify the many different species.



New 'meadows' dug for pike to spawn and grow

In spring spawning pike seek out flooded grasslands where the water quickly warms up and the fish's sticky roe clings to the vegetation. Large areas along the River Helge å flood each year, creating plenty of opportunities for pike to spawn, but the water soon drains away, leaving roe and fry stranded. To improve reproductive success the Biosphere Office created so called 'pike meadows'. These optimise conditions for survival, enabling young pike to find their way to the river before parts of the wetlands dry out in the summer.

Seven hectares of damp ground were cleared downstream of the River Helge å at Kavrö Bridge. Some of the land will be used for fodder production and grazing, but one hectare has been dug to create a shallow wetland with an outlet into the river. An additional 1.5 hectares of damp pasture next to the canal at Härnestad was also repurposed as a pike meadow.





Thesis highlights the need to monitor wetland health

While there is huge potential for wetlands to contribute to improved water quality and increased biodiversity at both local and regional level, a new academic study highlights the necessity of regularly monitoring conditions. Anna Borgström’s research into the capacity for wetlands to reduce brownification and eutrophication was presented at the annual Biosphere Research Conference’s 15th jubilee in November. Over an 18-month period Anna monitored nine wetland areas, chiefly in Kristianstads Vattenrike biosphere reserve, to measure reductions in phosphorus, nitrogen, organic carbon and water discoloration. The findings in her thesis show how results are affected by factors such as water levels and vegetation. Wetlands that dry out are less effective, and proper wetland management, including adjustments of water levels, can make a significant difference. Also important is the need for landowners to have both a knowledge of and an interest in the wetlands.



Unique machine demonstrated on Big Clearing Day

The aim: open hayfields. The challenge: the soil’s bearing capacity. Three years ago, when restoring an area beside the River Helge å north of the naturum, excavators uprooting and removing dense thickets of willow used bog mats to avoid sinking into the marshy ground.

In 2024, among the innovative machines on display during the ‘Big Clearing Day’ event arranged by the Biosphere Office and County Administrative Board, was a unique ‘Softrack’ machine used to cut and collect vegetation in the meadow next to the Årummet outdoor museum.

Restoring the meadow is part of a process to show what a valuable resource the area once was. For years the meadow provided winter fodder for livestock, before parts of it were relegated into becoming a municipal rubbish tip in the 1950s. What survives today are small but conservation-worthy fragments of these once cherished seasonally flooded grasslands.



Naturum casts light on the secrets of nature by night

Sitting by a blazing campfire, hearing the hoot of an owl at night is an unforgettable experience. For the ‘Nature by Night’ event the naturum auditorium was converted into an indoor forest, complete with a full moon, stone cairns, trees and rustling autumn leaves.

Visitors around the fire could hear strange sounds – howling, bellowing and rustling among the birches. Each sound gave our nature interpreter an opportunity to talk about the animals and how they have adapted to manage in the dark. A torch lit up life-sized silhouettes and models of deer, bats and other animals.

The programme ran three times a day during the local schools’ autumn-break week. Through their storytelling skills our nature interpreters shared knowledge with visitors and replaced fears of darkness with insatiable curiosity for the fascinating secrets of nature by night.

Kristianstads Vattenrike Biosphere Reserve
– benefiting nature and people

Read more on our homepage, complete with contact details:
vattenriket.kristianstad.se

