

*Biosphere Reserve*

**Kristianstads Vattenrike®**

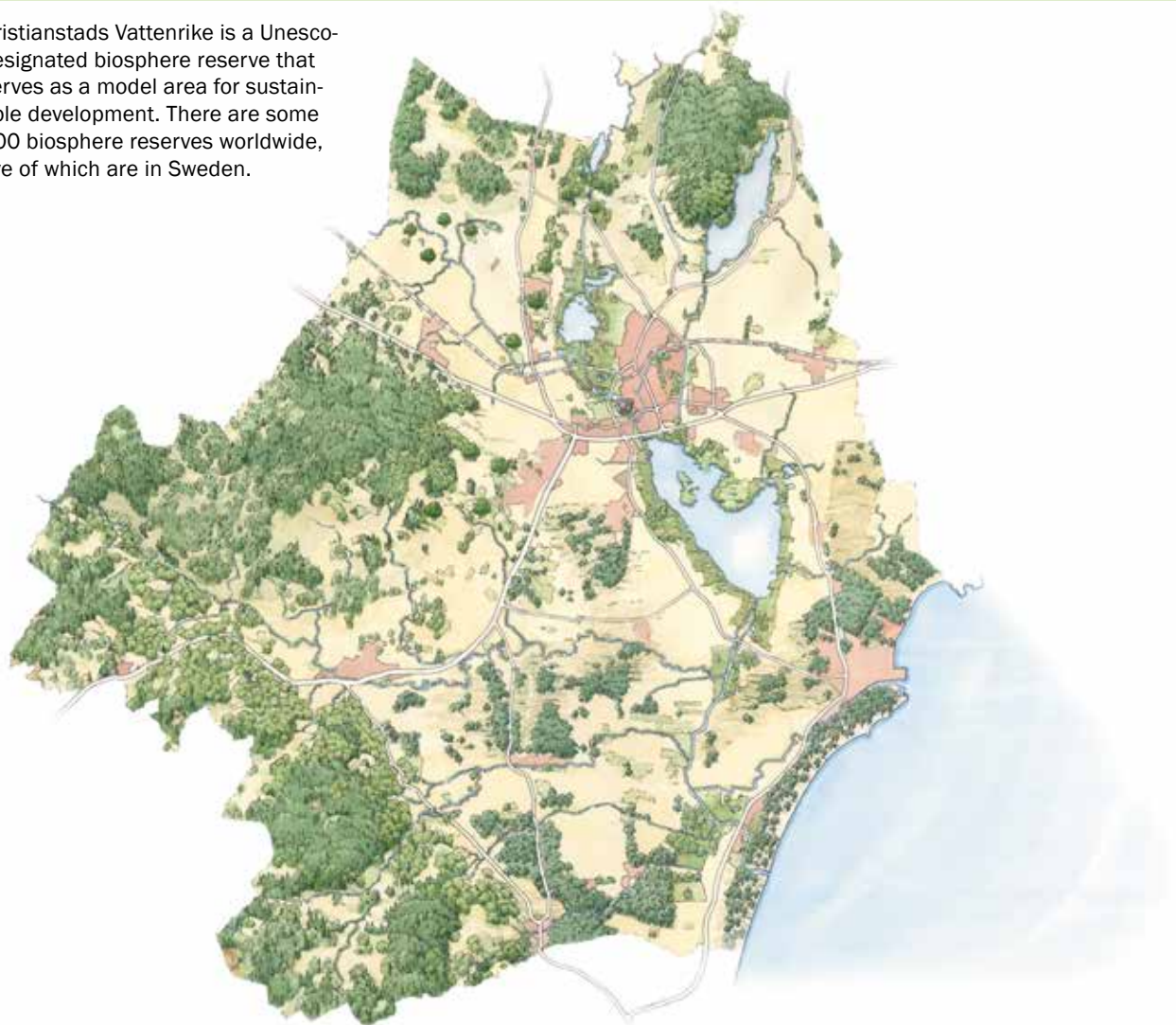
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# Kristianstads Vattenrike Biosphere Reserve

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



Illustratör: Carina Lindkvist Naturcentrum AB

**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 Lake Araslövssjön and Lake 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 natural habitats. The reserve is rich in diversity and a refuge for many threatened species. Here, in less than two tenths of one percent of the area of Sweden, live no less than 20% of Sweden's red-listed species!

Kristianstad Municipality is committed to conserving Vattenriket as a haven for nature and people. The Biosphere Office's projects give nature a helping hand and people an opportunity to use and enjoy natural values without compromising them.

To do this effectively the Biosphere Office conducts research projects and shares new insights. We make inventories, publish reports, work with researchers and host conferences. We collaborate with 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 climate change and other challenges.

Enabling people to experience nature inspires them to help conserve it. So we have created 21 visitor sites with observation towers, marked trails and outdoor museums. The jewel in our crown is the naturum Vattenriket visitor centre with exhibitions, meeting rooms and a restaurant. Here we explain how the biosphere reserve works and encourage visitors to explore the area for themselves.

Our activities have led to many positive results. At the Pulken visitor site migrating cranes, visitors and farmers co-exist in harmony. Catfish have been successfully reintroduced into the river and otters fish close to the naturum. Today the wetlands are no longer seen as a problem, but – thanks to a new-found respect for natural values – as a valuable resource.

# 2017- The year in review

At the 2015 UN General Assembly world leaders adopted the 2030 Agenda for Sustainable Development. Knowledge, commitment and wise choices are the key to achieving the agenda's 17 global goals by 2030. These goals describe the work to be done and form the foundation for the future welfare of humanity worldwide.

As a biosphere reserve, we have an important role in this process. Our day-to-day work creates bridges between people and nature, links local initiatives to national strategies, and encourages new research and education to promote sustainable development at local, regional, national and international level.

This takes the form of face-to-face meetings in the naturum visitor centre, advisory services relating to the valuable sandy grasslands, the creation of new wetlands and visitor sites, participation in municipal decision-making, the training of biosphere ambassadors, and much more besides.

Another focus of the past year's work has been ecosystem services, the many free-of-charge benefits that nature provides. Several naturum activities have enabled visitors to "sample" ecosystem services, and early in the year the film "Ecosystem Services in Kristianstads Vattenrike" was premiered. I'm delighted to report that it has since been screened more than 2,000 times, both here in our local

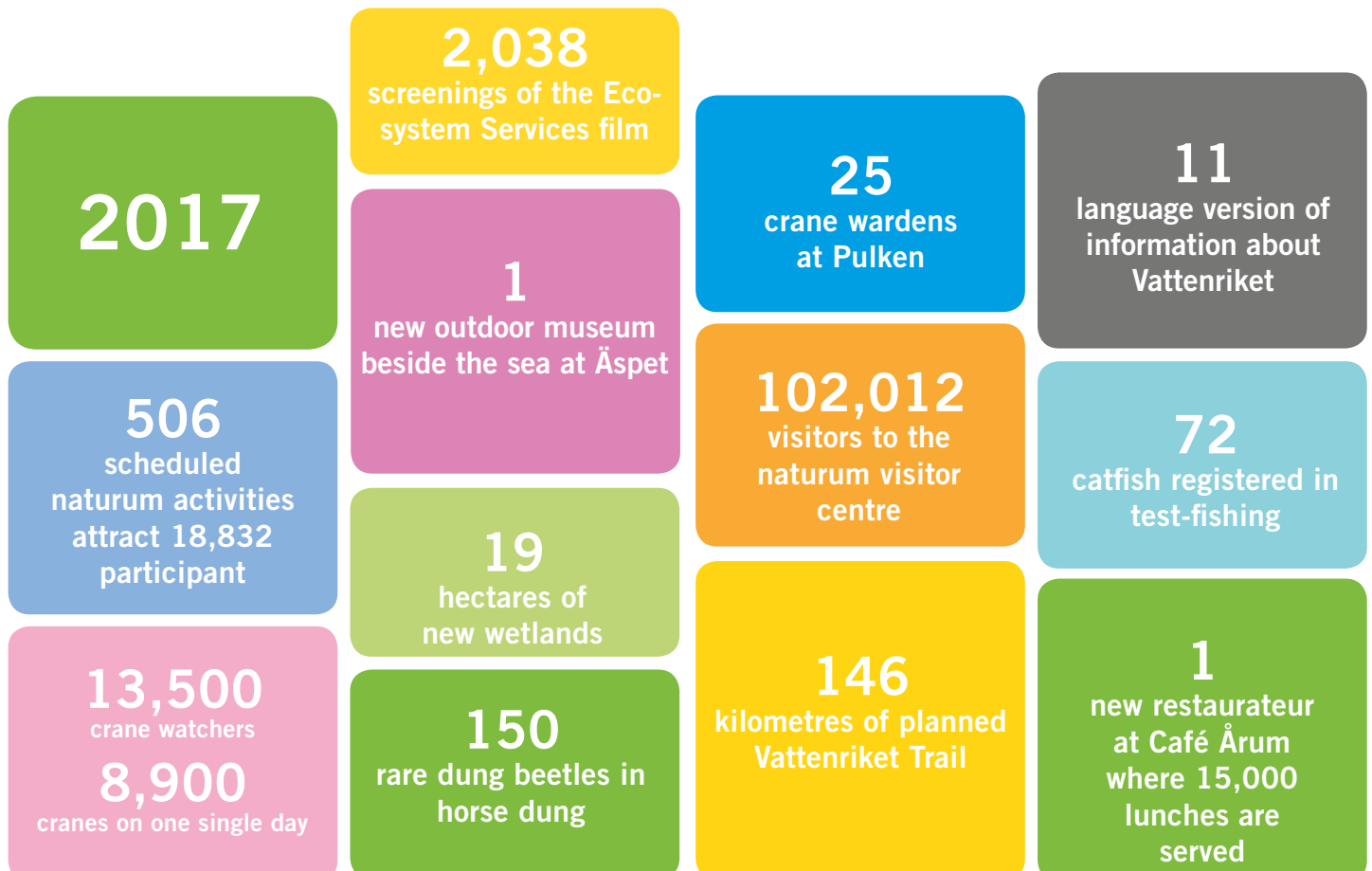
schools and in various national and international contexts.

We are now looking forward to the challenges and opportunities that 2018 will bring, spurred on by an awareness of the importance of biosphere activities, the desire to make a difference, and the resolve to create a future that benefits both people and nature.



*Carina Wettemark*

Carina Wettemark  
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# SUSTAINABLE DEVELOPMENT GOALS



## Biosphere reserves are key to achieving UN global goals

The UN's global goals pave the way towards a better world – and biosphere reserves show how these goals can be achieved. System ecologist and consultant Malena Heinrup has studied the biosphere reserves' role in Agenda 2030.

The 2015 UN General Assembly's global sustainable development programme, Agenda 2030, comprises 17 goals (SDGs) on which the future welfare of humanity worldwide depends.

As part of September's "Future Week" at naturum, Malena Heinrup, author of the Swedish EPA's report "Sweden's biosphere reserves – arenas for the implementation of Agenda 2030", lectured on the key role biosphere reserves play in achieving these SDGs.

Many of the government authorities and organisations working towards the goals

have a narrow focus on their own sector. Biosphere reserves can help to transcend this compartmentalised approach by acting as a forum for dialogue and collaboration.

### ***Biosphere reserves show the way forward***

Biosphere reserves work with collaboration and conflict management. They interpret and integrate sustainability goals, strengthen ecosystems, improve people's understanding of their place in nature, and promote learning about sustainable development. Malena Heinrup maintains that Agenda 2030 tells

us what we need to do, and the biosphere reserves show how to do it.

The management of cranes at Pulken was just one of many examples Malena gave the 20 or so attendees of how Kristianstads Vattenrike Biosphere Reserve is working to meet the UN's 17 SDGs. Most important of all, however, she sees biosphere reserves as arenas for collaboration, bringing together those involved and promoting learning about sustainable development.



**17 PARTNERSHIPS FOR THE GOALS**





## Advice to save the sandy grasslands

Small initiatives can make a big difference for plants, insects and people's experiences of nature. In the LONA project "In the sand close to you", Vattenriket ecologist Karin Hernborg shared advice on how homeowners along the sandy coast can best manage their land.

Karin Hernborg visited Birgitta Brännström Forss among the sand dunes, pines and mosses in her garden. Using old maps, she outlined the history of the area and the high natural values linked to what once was open countryside.

In the 1940s there were still plenty of sandy glades in the coastal pine forests. Since then the forests have grown denser and species dependent on open patches of sand have been forced elsewhere.

Today, with no risk of sand drift, moss can be removed to uncover the sand for heat-loving plants and insects. This creates a mosaic of natural environments that attract a variety of life.

Karin advised Birgitta to remove some of the grass and moss in the lawn and to plant drought-tolerant species such as wild thyme, lavender, Balkan clary and dianthus. The plants provide pollen and nectar for bees and butterflies. The sunlit sand provides a place for insects to warm themselves and build their nests, and for flowers to spread their seeds.



### Facts:

Advisory services are part of the Vattenriket project "In the sand close to you", financed by local nature conservation (LONA) funds. The project aims to spread knowledge and inspire property owners to manage the sandy grasslands in a way that benefits diversity.



## Creating the first large-scale wetland in forested land



Several new wetlands were created during the year. In Hylta the first large-scale wetland was created in an area of intensive forestry activities.

Wetlands in forest environments reduce brownification. Streams and lakes are less brown in areas where wetlands capture sediment and humus.

The new wetland at Hylta was created in an area where tests have shown that the inflowing water is very brown and deficient in oxygen at certain times of year. The long-term aim is to improve water quality so that more organisms can thrive in the Bivarödsån River, Lake Hammarsjön and the Baltic Sea.

New wetlands were also created in agricultural land to reduce nutrient run-off in the Baltic.

### Facts:

The Hylta wetland was completed in November at a cost of 1.3 million kronor funded by the Swedish Agency for Marine and Water Management.

#### New wetlands in forest environments:

Hylta 10 hectares (Bivarödsån)

#### New wetlands in agricultural areas:

Ljungen: 2.1 hectares (Vramsån)

Vittskövle 7.5 hectares (Helgeå)

Gaddaröd: 0.6 hectares (Segesholmsån)

Färlöv: 1.3 hectares (Vinneå)

Vankiva: 0.6 hectares (Almaån – Helgeå)





Photo: Patrik Olofsson/N

## Naturum Vattenriket received glowing praise in EPA assessment

**Once every five years the Swedish Environmental Protection Agency assesses naturum visitor centres in Sweden. This year it was the turn of naturum Vattenriket to be assessed. The result was highly positive. Staffing, displays and activities all exceeded expectations.**

Naturum Vattenriket was given the thumbs up by the Swedish EPA and received positive reports from the Swedish Centre for Nature Interpretation SCNI and the Swedish Museum of Natural History.

The Swedish EPA praised the visitor centre's thematic approach as "a unifying element in internal and external communication, accentuating the relevance and timeliness of activities and enabling staff to broaden their competence in a range of areas. The result is a varied offering of activities that can be repeated over time."

Communication and opinion-forming ac-

tivities were also endorsed: "There are many good examples of how humour and a novel approach are used to arouse public interest in nature. To gain acceptance and support for the work it is doing, naturum Vattenriket also demonstrates the economic value of nature, both in the visitor centre and in the biosphere reserve."

There was praise, too, for the biosphere classrooms and hand-netting equipment, the Friends of Vattenriket and the crane wardens.

The SCNI report said: "Visitors to naturum Vattenriket are made to feel truly welcome.

A richly varied offer of guided and self-directed nature interpretation activities for a broad spectrum of target groups awaits both first-time and returning visitors."

The Museum of Natural History appreciated the high quality of the display and exhibits – and the occasional dash of humour: "The animated fish fingers that appear among the other fish bring a smile to visitors' lips and get people talking."

No one was in any doubt that naturum Vattenriket had earned the right to function as a visitor centre for a further five years.



## Multilingual Vattenriket

A new touch-screen added to the naturum exhibition in 2017 introduces Vattenriket and naturum to visitors in 10 languages.

The touch-screen is part of the “New in Vattenriket” project, welcoming visitors with short texts. Hanan Alkhuder, a lawyer from Syria who worked as an intern at naturum, also helped by using her broad network of contacts to attract a whole new segment of visitors.

Hanan translated posters about naturum activities into Arabic and acted as a contact person, using the Arab Children Association to invite new participants to a family activity focusing on Vattenriket’s migrating cranes. In a highly successful initiative, Hanan translated nature interpreter Sam Peterson’s description of the exciting life cycle of the crane into Arabic for some 60 appreciative participants.



## New chef takes over at Café Årum

Café Årum on the upper floor of the naturum visitor centre offers a magnificent panorama over the city and the naturum pond. In June a new chef, Alexandre Albaret, took over in the kitchen.

Alexandre serves food and snacks produced from locally produced raw ingredients. Lamb, organic asparagus, strawberries and early vegetables from the Rathckegården Farm in Yngsjö are just a few examples.



Café Årum

## New Opteryx film takes us on a watery journey

Naturum Vattenriket firade februarilov med premiär Naturum Vattenriket’s new Opteryx film, “Forest Therapy”, takes visitors on a journey from bubbling springs through the forest to the sea.

It’s a pleasant trip through beech forests and babbling brooks, from the forested slopes of Linderödsåsen Ridge to the sands of Gropahålet and the sea beyond. Along the way we make the acquaintance of plants and animals above and below the water – signal crayfish, minnows and freshwater pearl mussels in the swirling streams, and the flowing tresses of river water crowfoot.

This is the third Opteryx film. The first was a tour of the naturum’s surroundings, the River Helge å and Kristianstad. The second was a more action-filled film from the driest parts of Vattenriket around Åhus.



Photo: Patrik Olofsson/N



# New outdoor museum at Äsp

**Äspet outdoor museum by the sea in Åhus was inaugurated with pomp and ceremony on World Oceans Day. The display describes life below the waves, sunken ships and much more.**

Vattenriket works with researchers, government bodies, associations, school classes and the public to achieve the UN's sustainability goals. Promoting an understanding of nature and the role of water is a crucial tool in this work.

There are 21 visitor sites in Vattenriket. Some have outdoor museums that provide more detailed information. The sixth of these, created by the biosphere office with funding from the Swedish Agency for Marine and Water Management (SwAM), was opened at Äspet in the summer.

Carina Wettemark and Åsa Pearce untied the ribbon aided by SwAM's Thomas Johansson, and Bengt Olsson, director of the local public works department that had done the landscaping. The display is shaped like a ship, with benches as the gunwales and information boards as sails. These tell of life below the waves, the

history of Åhus as a bathing resort, sunken ships and their treasures, and the challenges facing the Baltic Sea.

After the formalities there were refreshments and a chance to look at the display, become acquainted with the locality by playing bird bingo, and discover what the school classes had netted among the rocks and seaweed.



## Scouts explore life below the waves

**Sun, blue skies and gentle breezes. The conditions could hardly have been better when scouts attending Jamboree 2017 swam and explored below the waves in Hanöbukten Bay.**

The scouts made a beeline for the beach at Östra Sand, swapping their uniforms for swimming trunks and goggles. Many were attracted by naturum Vattenriket's beach flag, where they and their leaders could borrow aquascopes and waders or diving masks and fins.

Others chose to explore the rock pools with scoop nets, returning a short while later with flatfish, Baltic prawns, jellyfish, bladderwrack – and 1,001 questions for naturum staff.

Do jellyfish sting? What happens when they die? Is bladderwrack edible? Sam Peterson, Håkan Östberg and Karin Magntorn patiently provided answers, as plants and animals were temporarily transferred to the display tank.

This was soon filled with species both common and rare: broad-nosed pipefish, marine isopods, sticklebacks, blue mussels, tiny scuds, sand shrimps, Baltic prawns, jellyfish and more. The day's most unusual and exciting find was a *Saduria entomon*: these isopod crustaceans have been inhabiting the Baltic Sea bed at depths of up to 300 metres since the last Ice Age.





# Best visitor site



Photos: Mattias Roos/  
Municipality of Kristianstad

## Crane wardens greet visitors at Pulken

**Ornithology club members counted a record 8,900 cranes at Pulken. There were thousands of human visitors, too – and “crane wardens” to help them enjoy the spectacle.**

Skeins of cranes high in the sky and the sound of their trumpet calls are sure signs of spring. And the best place to see cranes is Pulken. Here the birds come face to face with visitors, nature interpreters and nature conservation organisations. The popular regional journal, *Magasinet Skåne*, nominated Pulken as “Meeting Place of the Year”, and the only reason Malmö’s Indoor Market beat it to the top spot was the lack of a crane or two on the jury!

To provide the best welcome for visitors, crane wardens were on site as part of a project run jointly by Vattenriket, the local ornithologists’ club, the Swedish Society for Nature Conservation and the Friends of Vattenriket.

Wardens received training about cranes and the biosphere reserve, and a token sum of money was awarded to participating associations. Their work began on 25 March, the traditional Crane Day in parts of southern Sweden, when around 1,000 visitors gathered to see the cranes, listen to the guides and feast on “crane cakes”.

Crane wardens were in place every day to lend a hand with the spotting scopes and provide information about the cranes at Pulken and other visitor sites in Vattenriket. The initiative was so popular with both visitors and guides that it may well be repeated in coming years.





## The year in review



### Film about Vattenriket's ecosystem services

By 2018 biodiversity and ecosystem services must be factored into all major societal decisions in Sweden. As this requires decision-makers to be better informed, the Biosphere Office has produced a film to highlight key ecosystem services and projects. The film, available in Swedish and English on Vattenriket's website and on YouTube, aims to improve the potential for nature to continue to deliver these free services. The film has also been adopted for use by teachers in local upper secondary schools.

A film is just one of many ways to raise awareness of ecosystem services. These have also been the focus of many naturum Vattenriket activities in recent years. A temporary exhibition and photos in the auditorium charting the life cycle of an apple are other initiatives to increase knowledge in this important area.



### Friends mark first 5 years with new kingfisher

Sadly, the kingfisher that showed the way to the naturum visitors' centre was smashed to pieces in an autumn storm. However, thanks to a generous donation from Friends of Vattenriket, a new kingfisher created by artist Jenny Ahlström was back on its perch last summer, glittering in blue, green and red mosaic.

In 2017 Friends of Vattenriket, a voluntary independent association dedicated to supporting the development of projects in Kristianstads Vattenriket Biosphere Reserve and naturum Vattenriket, celebrated its fifth anniversary. Regular Sunday openings at Lillö Castle in the summer, funding to enable more children to explore Vattenriket, sponsorship of the naturum's bug hotel, the Opteryx film and decorative features at the Hercules outdoor museum are just a few examples of the support given by the Friends.



### Senior citizens' day out at Ekenabben

More than 100 senior citizens enjoyed the spring sunshine at Ekenabben as part of a joint activity arranged by municipal social services and the naturum visitor centre in May. There was accordion music, refreshments and a barbecue down by the lakeside and a nature walk with Friends of Vattenriket. In addition, naturum's Josefin Svensson and Brita Nilsson led sessions in qigong and "forest bathing" in the shade of Ekenabben's huge oaks.

Through its action plan Vattenriket is committed to developing opportunities for healthy ageing over the next five years. The biosphere reserve aims to help to improve public health and quality of life by serving as a haven of peace and relaxation. Promoting health is one of the focus areas of Vattenriket activities, and the Senior Citizens' Day is one aspect of this work.



### Summer holiday activities at naturum

Naturum Vattenriket conducted 24 summer activities. Children and adults alike looked in wonder at the water scorpions they had scooped up in their hand nets or tried to leap as far as a hare can.

On 18 occasions we fished from the naturum jetty for aquatic insects. On four occasions we explored life among the seaweed at Snickarhaken in Åhus. And young and old took part in naturum's own two-day summer olympics.

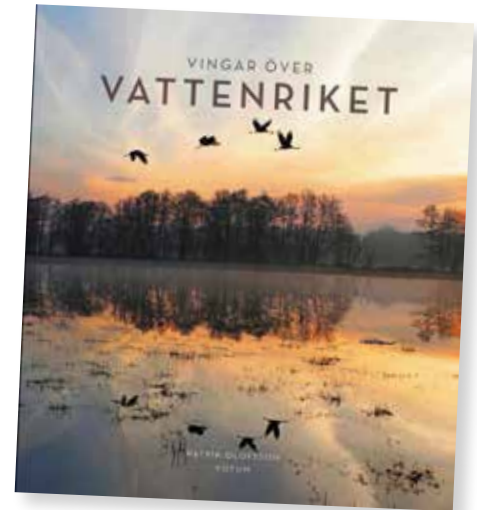
The activities attracted 1,350 participants, with boys and girls equally represented among the 750 children. More than 10 percent had a mother tongue other than Swedish (excluding tourists). The activities were financed through state support aimed at personal development. The purpose is to stimulate participation from boys and girls, promote integration and establish contacts between children from diverse social backgrounds.



## The year in review

### New Vattenriket book by Patrik Olofsson

Patrik Olofsson's first book about Vattenriket was fact-orientated. His new book revisits the same topic but adopts a somewhat different approach. Entitled simply "Vattenriket", it is a photo journal from excursions that take the reader, chapter by chapter, month by month, through the year in Kristianstads Vattenrike. February has the title "Otter Frenzy", March has "Where the Cranes Dance" and December is "Goose Days". Patrik Olofsson records fascinating encounters in familiar surroundings, as in the case of the goldeneyes around the naturum. But he also captures other moments close at hand that few of us have the opportunity to experience. The book, available in Swedish, English and German, is on sale at naturum Vattenriket.



### Diligent dung beetles find a good home

Biologist Niklas Fran was commissioned by the Biosphere Office to make an inventory of dung beetles in the sandy grasslands around Åhus. His research showed that the area is ideal for dung beetles and exhibits an exceptional diversity of species, including *Aphodius foetens*, *Aphodius contaminatus* and the extremely rare *Hep-taulacus sus*. Dung beetles need heat, sand and dung, all of which are found around Åhus. The inventory aims to improve our knowledge of biodiversity in the area but also of the ecosystem services that nature provides in farmland. By consuming animal faeces, dung beetles do us humans a great favour. Without their help, horse manure, for example, would remain in heaps where it fell. Dung beetles introduce fungi and bacteria into the dung, breaking it down into nutrients that replenish the soil. Beetle-eating birds help to spread the dung by scattering it over the ground in their search for beetles and insect larvae.



### Good results from catfish test-fishing

The result of the year's test-fishing for catfish, the seventh such project, is in line with previous years and show signs of good rejuvenation. In addition to the 72 catfish that were recorded in 15 locations, researchers netted 15 other species of fish. The most common were, in descending order, white bream, ruffe, eel and perch, with catfish as number five. The catfish are measured and weighed, and a tiny sample of the fin is taken before they are released. Most fish caught using current fishing methods are 0–3 years old. Next year, however, the Biosphere Office will change its fishing method and use bigger tackle in order to fill in gaps in our knowledge about the population of larger fish. Last summer, angler Ivar Jönsson proved that there are bigger catfish in the River Helge å when he hooked what he first imagined to be a salmon but what turned out to be an 18-kilo catfish measuring an impressive 165 cm.



### Walking trail planned for Vattenriket

Kristianstad is currently a terra incognita in terms of the Skåneleden Trail. After a local resident advocated the creation of a Vattenriket Trail, the Biosphere Office produced a proposal in 2017 that includes a variety of terrains and experiences. It extends in 8 or 9 stages some 130 kilometres from the forests in the north, across the Kristianstad Plain and the wetlands bordering the River Helge å to the coast at Åhus, the sandy grasslands and pine forests before doubling back to the ridge. The trail is unique in its proximity to several urban areas. This facilitates flexibility in planning: it is easy to buy food along the route and to use public transport to connect to and from the trail. As the intention is for the Vattenriket Trail to form part of the Skåneleden Trail, Region Skåne and the Scanian Landscape Foundation, together with municipal representatives for tourism development, are participating in the work. LONA funding has part-financed the pre-study.



## Året som gått



### The 2017 Biosphere conference

Kommunlråd Anders Tell invigde årets biosfärkonferens och sedan togs drygt 70 After local politician Anders Tell had opened the 2017 Biosphere Conference, the 70+ participants embarked on a voyage of discovery from the creation of the volcanic island of Surtsey to the insects, otters and geese of Vattenriket. They also learned how wetlands regulate the flow in the River Helge å, and marvelled at John Halmén's close-up look at compound eyes, rostrums and razor-sharp jaws. As part of a special focus on ecosystem services in farmland, Håkan Wallander, Professor in Soil Biology at Lund University explained how to work the land to prevent erosion. Christel Cederberg, from Chalmers University, described how to integrate ecosystem services into sustainable agriculture practices. And agronomist and local farmer Jens Fjellkner shared his experiences of how a sustainable pasture management system can both capture carbon and benefit numerous microorganisms.



Foto: Claes Sandén/Kristianstads kommun

### Naturum bridge – a gateway to nature

Every day some 2,000 people walk or cycle across the naturum bridge. On the short journey between the car park and their workplace they come into close contact with nature and the opportunity to see even otters and kingfishers.

In an article in the environmental journal Ambio, Thomas Beery, a lecturer in Environmental Didactics at Kristianstad University explains why these unplanned experiences of nature are so important. Research shows that city-living robs us of nature's positive impact on our well-being. Thomas believes that urban planners need to create opportunities for residents to enjoy spontaneous encounters with nature: for example, by following the pattern of the changing seasons or changes in the weather, or simply by enjoying the sounds of birdsong. The naturum bridge is one good example of how to achieve these aims.



### Publications 2017

Vattenriket i fokus (Vattenriket in Focus) is the Biosphere Office's series of booklets (ISSN 1653-9338), in which we publish reports and inventories commissioned by or conducted in collaboration with the Biosphere Office. The reports can be downloaded from [www.vattenriket.kristianstad.se](http://www.vattenriket.kristianstad.se).

2017:01 Biosfärområde Kristianstads Vattenrike. Verksamheten 2016.

2017:02 Provfiske på grunda bottenområden i Hanöbukten inom Kristianstads kommun. Lena Svensson.

2017:03 Häckningsframgång för rödspov och tofsvipa på Håslövs ängar och Ister-näset 2016. Mirja Ström-Eriksson, Roine Strandberg & Richard Ottvall.

2017:04 Skyddsvärda insekter vid Nyehusen - Fördjupad inventering 2016. Niklas Johansson.

2017:05 Provfiske efter mal i Helge å 2016. Håkan Östberg, Biosfärkontoret.

2017:06 Hammarsjöns häckande fåglar Inventering 2017 och utveckling sedan 1956. Patrik Olofsson.

Kristianstads Vattenrike Biosphere Reserve  
– benefiting nature and people

For more interesting reading and full contact details see  
[www.vattenriket.kristianstad.se](http://www.vattenriket.kristianstad.se)