

Concrete change claws back habitats on the rocks

Julia Horton

The sprawling concrete jungle may have destroyed the natural environment in cities around the world but Scots scientists are developing a way to use the much-maligned mix of cement, sand and stone to help restore biodiversity along the UK coast.

The smooth, hard surface of traditional concrete sea walls are a poor substitute for the rocky shores they have replaced. Researchers at Glasgow University have found, however, that concrete tiling designed to mimic the rougher forms and textures of these lost habitats attracts crabs, sea snails and whelks.

The innovative tiles also encouraged barnacles, which, when they stick to crumbling sea defences, help

to shield the harbour walls from the elements.

Mairi MacArthur, a PhD student in geographical and earth sciences who conducted the study, explained: "Concrete can't be said to boost biodiversity – nothing will fully replace or replicate natural habitat – but these designs improve on smooth artificial structures to provide a better quality of habitat. . . . We can never substitute natural shores, as they have lots of pools, cracks and crevices that are important for species, but we can optimise the structures that are being built."

She said that with climate change causing sea levels to rise, the need to provide more intertidal habitat, already lost through urbanisation, was increasing. Developing "ecologically

enhanced" infrastructure was also important in cities, she added.

Nearly 200 concrete tiles, each 15 sq cm, in nine designs, with an array of grooves and holes, were tested in four locations: Cramond in Edinburgh, Saltcoats in Ayrshire, Blackness Castle on the Firth of Forth, and Shanklin on the Isle of Wight.

There are now plans to test the tiles on a larger scale, at Forth Ports outside Edinburgh, with a view to constructing sea defences in the future using more "environmentally friendly" concrete.

The project is funded by UK government agency the Natural Environment Research Council.

The work is also supported by Concrete Scotland, a consultancy that works



“
It's not this horrible product

Natural features that provide a home for crabs and other species have been replicated on concrete tiles

with industry and runs educational programmes aimed at countering concrete's poor public image.

Dale Lyon, managing director at Concrete Scotland, admitted that people often associated the material with the "ugliness" of 1960s towns "like Cumbernauld", a multiple winner of the notorious Carbuncle award. "Concrete is the most used construction material in the world and it has positive effects too," said Lyon. "Projects like this show that it's not this horrible product and it can play a role in improving the environment as well."

Barnacles have in the past been knocked off harbour walls due to concerns that they were causing damage. Recent research has found

growing evidence that instead they have the opposite effect, reducing weathering by forming a protective living barrier between the wall and the sea.

Consequently, researchers believe that using more textured concrete could help to protect countless homes and businesses at risk of flooding as ageing sea walls prove increasingly inadequate against rising seas and storm surges.

The Scottish Wildlife Trust, which supported the project through a programme for "green" infrastructure, said it would cost "very little" to use textured concrete in new sea walls.

The study findings suggested that textured concrete increased the expense of building sea defences by less than 1%.

Locals put boot in as coastal path threatens access to salt marshes

Plans to protect wildlife alongside a Norfolk stretch of the trail around England are angering residents and artists

Jonathan Leake Environment Editor

England's ambitious 2,800-mile Coast Path project has become stuck in the mud of Norfolk's north coast over plans to ban access to the surrounding salt marshes used by ramblers, dog walkers and fishermen for generations.

Natural England (NE), the government's conservation quango, says it wants to protect seabirds and wildlife from the surge in ramblers when the coastal path formally opens – by banning access to land around it.

However, the plans, which are part of a public consultation, have infuriated residents, prompting protests along the coast, from the town of Wells-next-the-Sea to the village of Blakeney.

"I will be visiting the marshes whenever I want and I challenge anyone to stop me," said Godfrey Sayers, a renowned local artist, many of whose paintings feature the marshes and sand dunes that may soon be deemed out of bounds.

"Our marshes have been used by local people for generations, for gathering mussels, crabbing and collecting samphire. They are part of the local economy and culture.

"What Natural England is doing is well meant but its staff tend to be idealistic young environmentalists who want to protect wildlife but don't know the area or the impacts of their plans."

The Coast Path project began a decade ago, with NE told to create a walking trail around the entire English coast.

Under the legislation, whenever a new section is opened, the land between it and the sea becomes "access land", making it open to anyone. However, the same laws allow NE to restrict access to some areas, for example, those deemed sensitive for wildlife.

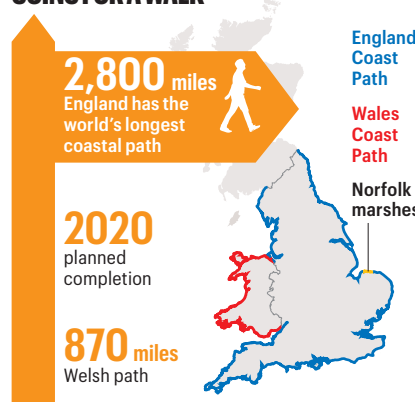
Critics say NE's staff – many with conservation backgrounds – are using the rules to create a network of nature reserves where people are banned.

"It seems like the wildlife is getting the freedom of the countryside while humans are getting penned up in the towns," said Philip Platten, a business-



Philip Platten, centre, and wife Christine with other dog walkers on the coastal path. He says wants to be able to take his grandchildren on the marshes too

GOING FOR A WALK



man based in Wells-next-the-Sea who regularly walks his dogs on the marshes.

"I'm 55 and I have been walking the marshes ever since I was a kid. I want to take my grandchildren on them too."

Salt marshes form on coasts sheltered enough to allow mud to pile up and be colonised by plants and animals, forming areas rich in wildlife. Norfolk's marshes and dunes stretch from Titchwell to Blakeney National Nature Reserve. Much of the land is owned by the Holkham estate, controlled by the Earl of Leicester, but has been used by locals for generations.

"In the 1950s I spent the summer living on the salt marshes," said Nicholas Barnham, another renowned Norfolk artist. "I

built a shack from driftwood and made a bonfire out of the 'no access' signs.

"I ate by collecting samphire and catching fish, which I cooked on an open fire. By the end of the summer I'd been joined by 20 other art students. You couldn't do that now. You'd be locked up if you tried that under these new rules."

NE's consultation document says it wants to "exclude public access all year round at . . . Wells-next-the-Sea, to limit the potential disturbance of . . . breeding birds by both people and accompanying dogs". It plans similar restrictions in several other sections of marsh, arguing the ban would also prevent people becoming trapped by tides.

Norfolk is not the only county facing controversy over the new path. Last year NE came under fire in north Devon over plans to divert the path away from the coast because it was privately owned, thereby forcing ramblers onto a road. The suggestion infuriated the Open Spaces Society.

NE is also likely to face protests about plans, just published, to open a new section of path between Christchurch in Dorset and Calshot in Hampshire, but simultaneously ban access to salt marshes on the Lymington and Beaulieu rivers.

Some argue, however, that such restrictions are needed – and will have

little impact on locals. "These marshes are among England's few remaining wildernesses," said Kevin Thatcher, chairman of the north Norfolk advisory group to the Wash and North Norfolk Marine Partnership, who shoots wildfowl on the marshes.

"They need to be learnt about and understood. Each year I bring off groups who get lost. Many have dogs that behave wildly – they frighten birds, find nests and kill young. I think it's a very good thing to discourage access to all and sundry but for those who know the area and how to access the marshes these restrictions will make little difference."

@jonathan_leake

Ha-ha, sourpuss. Cats have 9 lives but dogs have the sense of humour

Jonathan Leake
Science Editor

Dogs are not just brighter than cats but may also have evolved a sense of humour, say researchers who have compared the brains and behaviour of the two species.

They suggest that, over generations of breeding, humans have constantly selected dogs that show the most human characteristics – such as the ability to laugh at themselves and others.

"Dogs do seem to enjoy entertaining people and making them laugh," said Professor Marc Bekoff, an evolutionary biologist and author of *Canine Confidential*, a new book on dog behaviour. "A sense of humour is valuable in social animals like dogs. However, I have seen no evidence of a sense of humour in cats."

Such findings are controversial with pet owners but fit with recent studies. Scientists dissected the brains of cats, dogs, lions and other species to count the cells in the cerebral cortex – the area concerned with cognition.

They found that dogs had about 500m cells in the cortex, double the number in domestic cats, suggesting

they were far brighter. Humans have about 21bn.

Bekoff believes that having a sense of humour suggests dogs have a "theory of mind". "It suggests they know that what they do affects the emotions of others."

Others take a simpler view. "Dogs are clearly brighter," said Beverley Cuddy, editor of *Dogs Today*. "Do we have

Guide Cats for the Blind? Or police cats sniffing out drugs or explosives? No."

Cuddy warns, however, that bright dogs can make terrible pets. "A professional trainer, Vicki Cuerden from Lincolnshire, created the most intelligent breed of dog ever known, the rodinglea scruffy, by crossing border collies, springer spaniels and bearded collies. They had the equivalent intelligence of a toddler but they regarded other dogs with contempt."

Cat lovers see things differently, suggesting cats are disadvantaged by getting less attention when young than dogs. "Pet cats do not get the same learning and teaching," said Claire Bessant of International Cat Care. "This may make tasks and tests distressing and difficult when they are adult."

@jonathan_leake



Dogs have twice as many cells in the cerebral cortex as do cats

With this alpaca, I thee wed... couples add animal magic to big day

Shingi Mararika

When Chris and Rebecca Giddings wed in 2016, they used their marriage to profess their love not only for each other, but also for their favourite animal – the alpaca.

The couple, who came across the animals on a trip to Latin America in 2011 and fell hard for them, are among a growing number marrying in the presence of animals.

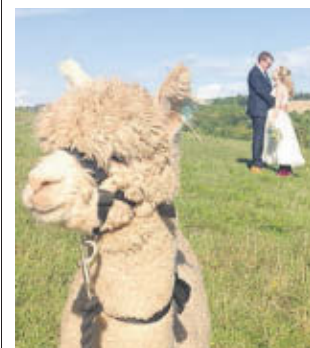
Chris, 33 and Rebecca, 35, went to Charnwood Forest Alpacas, a Leicestershire breeder, to purchase a £700 "Platinum Alpaca" for their nuptials. Four alpacas and a pair of handlers attended their barn wedding in Oxfordshire.

Rebecca, who works in marketing, said: "We went to a lot of weddings in the past that were not necessarily boring, but without

entertainment for the guests. We thought it would be nice to do something different.

"After the ceremony, we went for a little walk in our wellies through the woods to take some photos with the alpacas. They were lovely, but we passed several dog walkers and the alpacas were slightly terrified."

Other popular wedding



The Giddingses' wedding

guests include snakes, spiders, goats, meerkats and raccoons. Last month a video went viral of an owl that had been hired to deliver the wedding rings attacking the best man at Jeni Arrowsmith and Mark Wood's ceremony in Cheshire.

Mini Pony Hire, based in Northumberland, says bookings for weddings have more than doubled in a year.

Many couples ask for the ponies to be dressed up as unicorns. Lisa Walker, 42, who founded the company 10 years ago, said: "Stick a horn on them and it's even more magical. People are going crazy for unicorns."

Paul Freakley and Janet Still, from Warwickshire, hired 30 animals, including meerkats, snakes, tarantulas and scorpions, for their reception in 2015, drawing criticism from the animal

rights group Peta, which said the animals were "confused".

The RSPCA has also expressed concern about the use of animals at weddings. Ros Clubb, a senior scientific manager, said: "We're particularly concerned about wild animals at weddings, which seems to be more of a recent phenomenon.

"On the whole, we wouldn't encourage people to use them. Not just them being there for the day, but being transported to the location and housed on the site."

However, Clubb was less worried about species such as alpacas and ponies.

Legislation set to be introduced in October could put an end to the petting wedding trend, as mobile zoo owners will need to meet a tighter set of rules in order to use animals at events.

@shingimararika