

The blight on our beaches

An aerial survey of Scotland's coast by volunteer pilots has revealed staggering amounts of plastic debris and pollution

Julia Horton

"Industrial" amounts of plastic litter have been found around Scotland's coastline in a groundbreaking aerial survey carried out by volunteer pilots.

Using their own aircraft, they found and photographed thousands of plastic barrels, crates and other items of debris piled up on public beaches and remote rocky coves around the coast.

Sky Watch Civil Air Patrol Scotland, a charity that helps the emergency services and local communities with searches and surveys, said that some hotspots looked more like landfill sites.

What can be seen belies the true scale of the problem, with smaller pieces of plastic waste likely to be hidden from view from the sky beneath seaweed.

The pictures are being used by the Marine Conservation Society (MCS) in Scotland to plan beach clean-ups so that communities can target their efforts where they are needed most.

Seabirds and marine creatures, from plankton upwards, face a growing threat of being injured or killed through eating or becoming entangled in plastic.

Archie Liggat, a pilot who is chairman of Sky Watch, said: "In the worst areas it is absolutely at industrial levels, with plastic blasted up the hills from the coast where it's been blown by onshore winds."

"There are thousands and thousands of large plastic barrels all over the place, and plastic crates, and when there is any large plastic litter visible at all there's usually a significant amount of smaller stuff too under the seaweed."

Urging people to donate to fund fuel for surveys, he warned that without swift action more larger plastic would break up into tiny fragments which would "probably enter the ecosystem for good".

Scotland's convoluted coastline is around 6,000 miles long – about a tenth of Europe's shoreline – and the habitat it provides for wildlife can be hard to access.

MCS Scotland beach clean up co-ordinator Catherine Gemmell said: "I've been across the length and breadth of the country and the litter that some communities are already dealing with is absolutely horrific."



Plastic debris washed ashore at Ardtreck Bay on Skye, top, while volunteers pick litter on the shore at Troon, above

"These new aerial surveys of stretches which people can't easily see or reach show places which are not being cleaned up yet so the plastic is still building up in the oceans."

MCS Scotland is urging the Scottish government to build on recent action such as the 5p carrier bag charge with further commitments to reduce plastic items such as cups which are designed to be used once only.

Gemmell added: "Any type of marine litter can have a huge impact on our amazing wildlife at every level of the food chain. Animals ingest plastic, get tangled up in it and can feed it to their young."

The Scottish government provided

around £25,000 for camera equipment for the surveys, which were set up after the Moray Firth Partnership, a regional environmental charity, sought help to create a waste map of their area to help combat litter.

A government spokesman said it had already shown "leadership" on tackling plastic litter and was looking at ways of reducing single use items.

So far around 16 surveys of about 90 planned have been carried out, costing about £2,000, which pilots donated themselves.

To support the scheme visit Scottish Coastal Rubbish Aerial Photography at <https://scrapbook.org.uk>

Giant kites 'make more power than wind turbines'

Mark Macaskill

First came giant turbines. Now kites – each about a quarter the size of a tennis court – could become a familiar sight above Scotland after scientists found they harness more energy than wind farms.

A study by London South Bank University has backed the fledging technology, which involves tethering huge kites to a winch that drives a generator.

Researchers found that at five test sites in Aberdeen, Glasgow, Edinburgh, Leuchars and Stornoway, the kites yielded more energy than wind turbines, prompting them to conclude that Scotland is the best location in the UK to exploit wind power. Their findings will be presented at a renewable energy conference later this month in Sydney, Australia.

There appears to be growing enthusiasm for kite farms amid claims that the technology is cheaper than other renewable technologies, could be developed with virtually no public subsidy, and promises to open up offshore regions too deep for wind turbines.

Another advantage is that kites can soar in strong wind currents beyond the reach of wind turbines. It is claimed that two kites could produce enough energy to power 380 homes for an entire year.

Much of the criticism levelled at wind farms has been the huge amount of public money needed to support the industry. Turbines, which can stand up to 100m tall, have also been blamed for killing birds, damaging the landscape and negatively affecting tourism.

Kite power is expected to be less controversial, although the study did not assess the impact of the devices on wildlife. It did, however, note that kites struggle in high winds, which can cause knots and tangles in the tether lines. Academics at the university concluded that kite power is

"simple and unsophisticated" and that there is no risk to humans and animals from a kite falling from the sky because of their "bendable and soft" construction materials.

The technology involves tethering two giant kites, each up to 70 sq m, to a winch system, which drives a generator. The first kite rises with the wind, up to a height of 450 metres, moving in a figure-of-eight pattern. The movement pulls a rope that turns a turbine, generating power. As one kite descends, the other rises in tandem, meaning that electricity can be generated almost constantly.

Plans are under way to launch the UK's first commercial kite farm in 2023. The project, led by KPS, a Glasgow firm, has received about £7m in funding from

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The tech is cheaper than other renewables

private companies such as Royal Dutch Shell and the government quango Scottish Enterprise. Testing is taking place at the Ministry of Defence's West Freugh site in Stranraer and nearby Castle Kennedy. It includes designs that will minimise damage or entangled lines during high winds.

"Kite technology has the potential to significantly lower the costs of renewable energy and to be deployed commercially with no subsidy. That's the big prize," said Simon Heyes, chief executive of KPS. "We believe that our technology will be a long-term solution for the deep water offshore market."

National Trust turns to its past to safeguard future

The chief executive of the National Trust for Scotland (NTS) has said an ambitious £60m plan to reverse its fortunes is "not without risk", writes Mark Macaskill.

The charity is custodian of thousands of acres of countryside and more than 60 historic properties and gardens yet dwindling visitor numbers have hit finances.

Simon Skinner, chief executive since 2015, said the Trust had historically been "big on aspiration" but ultimately failed to deliver results and that it begins each year facing a £10m deficit.

Unveiling a five-year plan that will see tens of millions pumped into its flagship attractions, he said success depends on gaining public support for the Trust's conservation work and widening its appeal.

He aims to almost double visitor numbers from 3m to more than 5m a year and boost membership from 370,000 to 500,000.

"It's about placing bets and making hard choices," he said. "Any strategy worth its salt is about knowing the risks you are taking. If we had kept on with what we were doing, we would have gone bust."

"I credit my predecessors with stabilising the Trust but it was very much about aspiration, not delivery, and too much control rested at our Edinburgh headquarters. "We have made significant changes to our structure and brought in new skills and systems – while we cannot eliminate risk, I am confident we have done the necessary preparation to vastly increase the odds of success."

It is hoped that makeovers to properties such as Culzean Castle in Ayrshire, Brodick Castle on Arran and Newhailes House in Musselburgh will encourage visits and boost income. Staff will focus on improved visitor services as well as retail and catering offers to cover conservation costs.

Between 2005/6 to 2015/16, visits to built properties fell from about 1.45m to 1.1m. Skinner is encouraged by figures showing a recent increase in visitors from 2.65m in 2015/16 to 3.69m last year but admits that the visitor experience inside many of the Trust's historic houses is stale.

Under a £1.3m initiative, Project Reveal, teams are recording and digitally photographing hundreds of thousands of items in NTS collections – from art works and fine furniture to kitchenware and chamber pots – to identify untold stories about Trust properties that could form new displays.

At Culzean, researchers rediscovered the story of Scipio Kennedy, bought in West Africa at the age of five or six by Captain Andrew Douglas of Mains, and put to work as a slave under his daughter, Lady Jean, wife of Sir John, the 2nd Baronet Kennedy of Culzean. He was

freed in 1725 but continued to work for the family and was given land on the estate.

At Brodick Castle in Forres, a key labelled "mahogany box, golden telescope" was found. A researcher recalled a locked box in a storeroom, untouched for a years. The key fitted and a telescope found, thought to belong to the botanist James Brodie, 21st Brodie of Brodie (1744-1824).

At Inverewe Garden in Inverness-shire, there are plans to build a viewing tower to connect the upper and lower gardens and afford views across Loch Ewe.

Skinner said changing the mindset and make-up of its membership was also key to future success. "Many people do not realise that we're a charity and the younger generation tend to link us mainly with large houses. But we also look after the environment, including the countryside and coastlines, and that's part of the message we want to communicate."

Membership of trade unions falls as staff turnover quickens

John Boothman

Membership of trade unions in Scotland has declined sharply, according to new figures.

The latest UK government statistics, released last week, show that it has dropped by 10% (or by 137,000 members) north of the border since 1995 – falling by 1.2% between 2016 and 2017. The drop in numbers, which has implications for the Labour Party, reflects a rise in the use of short-term contracts, higher staff turnover and better industrial relations.

There were 629,000 members in Scotland in 2017,

compared with 657,000 in 2016 – accounting for 28% of the workforce and down from 766,000 in 1995.

While across the UK as a whole there has been a slight rise of 19,000 to a total of 6.2m employees belonging to a union, membership levels have more than halved since they peaked at 13m in 1979.

In Scotland, despite the pessimistic picture for the movement, the biggest public-sector union, Unison, claimed some success in the voluntary sector. It concedes that recruitment, particularly among care workers, is challenging because of the high turnover of staff.

In more traditional public-sector areas such as local government and health, Unison says that by increasing membership in already unionised workplaces it has partly plugged a gap that emerged as a result of losing public-sector jobs in the past 10 years.

Dave Watson, head of policy for Unison Scotland, said: "Over the past decade 60,000 public-sector jobs have gone in Scotland. Prorata we should have 30,000 members, but as a result of proactive recruitment overall we have lost 5,000."

Gary Smith, secretary of

GMB Scotland, which operates across the public and private sector, said it had bucked the trend and increased membership. He said: "Trade union membership decline is not inevitable. We have grown by more than 2,000 members in the past year through a focus on putting our members' interests first."

"Manufacturing industry remains difficult, mainly due to the continuing failure of both the UK and Scottish governments to come up with a proper industrial strategy. They promised a renaissance in renewable, for example, that has not materialised."

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