

Smart tech solution helps Scots fight flooding

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- The Scottish Flood Forum and SEPA have supported a trial of his innovative flood alerting system to help inform and empower local communities.
- The Scottish Flood Forum has been nominated at the Holyrood Connect ICT Awards for its work in trialling community engagement with RiverTrack.

Supported by the Scottish Environment Protection Agency (SEPA), the Scottish Flood Forum has led a comprehensive community trial of RiverTrack to test the innovative flood alerting tool.

Using cutting edge technology RiverTrack sends accurate time sensitive information to individuals about their local watercourse. The system, which uses an array of low-cost sensors positioned over waterways, can give communities advanced warning when flooding is likely by broadcasting real-time water level data to display screens located anywhere in the vicinity.

Water level sensors are attached to an agreed point on a stream or river and this information is then transmitted to RiverTrack's display screen using a licence-free, low power radio frequency either with or without an internet or cellular connection.

RiverTrack provides constant reassurance about the state of current river levels unlike for example home smoke detectors which only inform people when there is a problem. A trigger alert level is set by the user so that an alarm sounds if water levels reach a threshold of concern to them.

The Scottish Flood Forum's successful trial of RiverTrack in two small communities in Dumfries and Galloway and Clackmannanshire has now been shortlisted at the Holyrood Connect ICT Awards which take place on 27 June in Edinburgh.

SEPA is currently conducting an operational trial of RiverTrack alongside its existing river level monitoring in the Highlands. This is part of SEPA's commitment to support the development of new technologies which can enhance the response and resilience of small communities or individuals not currently served by SEPA's flood warning service.

Stewart Prodger, from SEPA's Flood Unit, said:

As many communities across Scotland know – flooding can have a devastating impact. One of the key ways to reduce that impact is early notice, so people can take action, and SEPA's Floodline service provides valuable local flood warnings in many places across the country, 24/7. But recognising it's impossible to have these schemes everywhere, we wanted to see what else we could do to help people help themselves.

"We were keen to see the use of innovative technology to provide something simple and affordable, but just as vital was accessibility, for the individual user and further afield. So having SEPA, RiverTrack and the Scottish Flood Forum work in partnership with these community flood groups has been a great way for us to tackle flooding problems together."

Scottish Flood Forum's Kirsty MacRae, said:

The Scottish Flood Forum is delighted with this Holyrood recognition for a partnership project we are proud to have led. The RiverTrack device could provide invaluable help for small communities dealing with flood risk from local watercourses, and vital to that is its user-friendliness.

"SEPA's sponsorship allowed us to properly trial RiverTrack in two communities, Moniaive in Dumfries and Galloway, and Menstrie in Clackmannanshire, with involvement and support from local authorities. These pilots are almost complete and proving to be a great success, with community testers reporting very positively.

"We are very excited about the possibilities that RiverTrack brings to helping flood risk communities, will be evaluating its potential and looking to engage communities and grant funders to explore what we can achieve next."

RiverTrack's Gary Martin added:

In my work, my focus has always been on using technology to help people in their daily lives by making vital data and information more accessible to them. When I saw the CivTech challenge from SEPA, I immediately thought of using a sensor-display combination to deliver real-time river level data into people's homes and communities to give them crucial time to react.

"I also wanted a collaborative approach, working closely with affected communities and existing flood groups to deliver a solution that is tailored to their needs. The feedback from the

pilot projects was very positive and I can't wait to work with more community groups through the Scottish Flood Forum in the future."

Environment Secretary Roseanna Cunningham said:

It's great to see the success of RiverTrack in Dumfries and Galloway and in Clackmannanshire where it has helped communities prepare for flooding. Individuals living in these areas have been able to gain a better understanding of their potential flood risks so they can take the necessary action to protect themselves, their property or their business.

"The Scottish Government is committed to reducing flood risk across Scotland and is investing £42 million every year to protect homes in many of our most flood-prone areas.

"RiverTrack is another example of the innovative work coming out of the CivTech programme which is teaming up entrepreneurial start-ups and Small to Medium-Sized Enterprises with public sector organisations to help them find new ways of addressing the challenges they face."

Ends

Notes to editors

You can find out more about RiverTrack at: <http://rivertrack.org/>

News story: Lord Duncan hails golden age of agricultural innovation at Royal Highland Show

UK Government Minister Lord Duncan will today [22 June 2018] attend a series of engagements at the Royal Highland Show as he reflects on his first year in office and the importance of scientific innovation in farming and agriculture to help grow this vital sector.

Speaking ahead of the show, Lord Duncan said:

"Agriculture is part of the lifeblood of the UK. It feeds us, fuels us, pumps in billions of pounds to the UK economy, and supports nearly 400,000 jobs in Scotland alone. Indeed 80% of Scotland's land mass is involved in agricultural production.

"It is also an area which is at the cutting edge of science and technology. Anyone who thinks that farming is tweedy and dusty would be astounded at the level of technology and scientific precision involved in modern day agriculture. "From robotics to genetics and feeding the world, the UK is a pioneer in technological innovation.

"We know that this work in innovation is key to increasing productivity and sustainability in agriculture and will allow the UK to continue to compete globally, meeting the growing demand for British food around the world.

"The UK Government is helping pioneering Scottish scientists lead the way in tackling problems such as pests and disease. The Department for International Development (DFID) is funding new cutting-edge research to allow farmers to grow crops that are more nutritious, more resistant to disease and better able to withstand severe floods or drought in Africa.

"This is being carried out by scientists at the University of Edinburgh, who are also leading ground-breaking work on devastating diseases which cause huge economic losses for African farmers.

"DFID is also contributing £4m funding to the Centre for Tropical Livestock Genetics and Health, which is based in both Edinburgh and Nairobi and progresses scientific advances in genetics and genomics that help smallholder dairy and poultry farmers in sub-Saharan Africa.

"In February, Business Secretary Greg Clark announced £90 million of new funding through the UK Government's modern Industrial Strategy, to support agricultural technology through Artificial Intelligence, robotics and earth observation to improve supply chain resilience in the agri-food sector. He highlighted how new technology is boosting farmers' earning power and making agri-businesses more productive and profitable than ever before.

"The funding, delivered as part of the new the Industrial Strategy Challenge Fund, will make it easier for food and agri-business to embrace technology and innovation that will be critical to meeting the increasing food demands of a growing population, fuel rural growth and create high-skilled jobs.

"While at the Royal Highland Show I'll be having a 'superfood breakfast' at the James Hutton Institute tent, and hearing about their ground breaking work in developing science to help feed the world – from right here in Scotland. They are key partners in the developing Tay Cities Deal – which will see the UK Government working in tandem with the Scottish Government and partners to develop projects which will impact the Tay Valley and the world.

"It's been one year since I became a UK Government minister, and in that time I have put championing innovation and agriculture at the heart of my priorities, travelling the length and breadth of Scotland to visit farmers, scientists and stakeholders, and I look forward to seeing even more of the exciting future that agriculture has at the Royal Highland Show."

Examples of UK Government work in supporting technological and scientific development in agriculture:

UK Aid: Super-Crops

- In January International Development Secretary Penny Mordaunt announced UK aid research, which is being carried out by international organisation, CGIAR, during a joint visit to the University of Edinburgh with Bill Gates into super-crops.
- UK scientists are leading new cutting-edge research to allow farmers to grow crops that are more nutritious, more resistant to disease and better able to withstand severe floods or drought in Africa, in addition to developing medicines to protect farmers' livestock from devastating disease.
- At the University of Edinburgh, scientists are also leading ground-breaking work on diseases which cause huge economic losses for African farmers, including Animal African Trypanosomiasis (AAT), a disease which kills over 3 million cattle a year, has been estimated to cost over \$4bn a year in total to African economies and can cause sleeping sickness in people.
- Ms Mordaunt also announced plans to develop the Centre for Tropical Livestock Genetics and Health, which is based in both Edinburgh and Nairobi.
- DFID will support CGIAR with funding of £90m over 3 years. CGIAR' was originally the acronym for the 'Consultative Group on International Agricultural Research'. In 2008, CGIAR redefined itself as a global partnership. To reflect this transformation and yet retain its roots, 'CGIAR' was retained as a name. CGIAR is now a global research partnership for a food-secure future. The role of CGIAR is to deliver new agricultural technologies to support food and nutrition security and growth. Access to high-yielding, drought, heat and disease-resistant crops and livestock underpins the livelihoods and incomes of poor farmers and is essential to combat hunger and reduce the risks of crop failure.
- Technology developed by CGIAR was at the heart of the green revolution, tripling yields and lifting millions out of poverty and hunger. CGIAR-developed varieties of the 10 main food crops are now grown on over 200 million ha in developing countries.
- This new funding will support the development and deployment of: crop varieties that are climate resilient, more resistant to heat, drought and flooding; crop varieties that are more nutritious, with elevated levels of essential micronutrients; agronomic practices that boost resilience and reduce the use of costly inputs; new livestock varieties, diagnostics, vaccines and medicines, to reduce the risks faced by livestock farmers.
- The Centre for Tropical Livestock Genetics and Health (CTLGH) will receive £4 million through funding by DFID. It is a joint venture launched by three partners – the Roslin Institute of the University of Edinburgh, Scotland's Rural College (SRUC) and CGIAR – International Livestock Research Institute (ILRI), who have created a new, multidisciplinary Centre for Tropical Livestock Genetics and Health, with two main nodes, one in Edinburgh and one in Nairobi.
- The Centre will mobilise the most recent scientific advances in genetics

and genomics that have led to substantial gains in livestock productivity in temperate zones and apply these to improve livestock productivity in tropical environments, for the benefit of smallholder dairy and poultry farmers in sub-Saharan Africa.

Agri-Tech

- Global demand for food is projected to grow 60% by 2050 – we want Britain, with its scientific know-how and flair for innovation and quality, to be in a superb position to take advantage.
- Technological innovation is key to compete globally, unlocking the potential of farming by improving productivity and tackling problems such as pests and disease.
- UK Government investment will help build on the strengths of the UK's booming agri-food sector, which employs around 4 million people across the UK, and support it by:
 - bringing together businesses, farmers and academics to take forward priority research projects through new Challenge Platforms
 - supporting Innovation Accelerators which will be responsible for exploring the commercial potential of new tech ideas at pace
 - demonstrating innovative agri-tech projects and how they will work in practice
 - launching a new bilateral research programme that will identify and accelerate shared international priorities and help build export opportunities for pioneering agricultural-technologies and innovations overseas
- UK farmers, agri-tech companies and research centres are already leading the way in this area, using technology like data, robotics and AI to help create new technologies and herald innovative new approaches, including:
 - the Agricultural Engineering and Precision Innovation (Agri-EPI) Centre is bringing together leading organisations in the food supply chain to become a world-leading centre for excellence in engineering and precision agriculture
 - the mobile app and website CROPROTECT, developed by Rothamsted Research, is helping farmers to protect their crops with farmers and agronomists using it to exchange best practice and tips on smart management of pest, weed and diseases

- Ordnance Survey have used their satellites to accurately map 232,342 miles of England's farmland hedges to create a new digital dataset and use planes with fixed state-of-the-art digital cameras to record thousands of individual photos that can map out farms and entire green landscapes

Press release: Spot check crackdown on waste carriers around London City Airport

Environment Agency officers are once again out in force to crack down on illegal waste crime around London City Airport.

Recently the Environment Agency supported a multi-agency day with partners including the Met police and DVSA – in a bid to reduce and disrupt waste crimes, metal/cable theft, tax evasion and prevent dangerous vehicles from being on the road.

During the day of action, vehicles were stopped by officers from the partner agencies to identify offences and non-compliance.

On one occasion, a vehicle carrying a suspected stolen cable was stopped. The driver was interviewed under caution by the Police with an Environment Officer on hand to question him about duty of care offences and non-compliance.

Environment officers also checked whether waste carriers were providing waste transfer notes to the sites where they collected waste from.

Senior Environmental Crime Officer Julia Leigh said:

We want to make it very clear to people that everyone has a duty of care to ensure their waste is managed and disposed of correctly by the people they give it to. If you use illegal waste carriers to take your rubbish you risk being fined up to £5000. When someone offers to take your waste, you need to check that they are a registered waste carrier with us and they must provide you with a waste transfer note that tells you where they are taking the waste to.

Police and DVSA used their powers to prohibit a number of vehicles from being used on the road due to the dangerous defects they identified.

DVSA vehicle examiner Keith Barker, whose team took three vans off the road during the operation, said:

DVSA is committed to protecting you from unsafe drivers and vehicles. There's no excuse for driving with mechanical defects or with an overweight or unstable load. Those on London's roads who break the rules are putting themselves and others at risk. Working alongside our colleagues in the Environment Agency we'll crack down on rogue drivers and operators, making London's roads safer for all.

Waste being transported with no authorisations is likely to end-up at unregulated sites. Such sites store waste in vast quantities and for long periods of time posing significant risks to health and the environment. Risks can include fire which has the potential to contaminate water and land as well as air pollution from smoke. Illegal waste sites are often the cause of odour complaints too.

Julia Leigh added:

People who manage waste illegally cost the taxpayer millions every year in clean-up costs and make considerable sums of undeclared income. They also undercut legitimate business, and pose a direct threat to sustainable growth in the waste management sector. Our enforcement days make sure that the Right Waste goes to the right place – to stop unpermitted businesses undermining legitimate businesses and help create a level playing field.

Media enquiries: 0800 141 2743.

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Press release: Anglers urged to report non-native salmon catches

The Environment Agency is urging anglers and commercial fishermen to report unusual catches after a non-native pink salmon was caught in North East waters.

The fish was captured in a commercial net, close to the mouth of the River Tyne in early June. Since then, there have been further unconfirmed reports of pink salmon being caught in coastal nets in the North East.

Around 200 non-native pink salmon were caught in waters off the North East and Yorkshire coast in 2017 and by anglers in the rivers Tyne, Coquet, Wear and Hull, but this is the first confirmed catch of 2018. Further afield, anglers have confirmed catches in rivers in Scotland and in western Ireland.

Pink salmon (*Onchorhynchus gorbuscha*), also known as humpback salmon, originate from the northern Pacific Ocean.

Millions were stocked in the White Sea region of north Russia from the 1950s until the early 2000s to develop a net fishery. As a result, some have established self-sustaining populations in rivers and coastal areas in Russia, Finland and northern Norway. These populations now appear to be expanding. This is the most likely origin of the pink salmon recently caught in the UK and Ireland.

Non-native species have the potential to disturb the natural balance of our environment so, the Environment Agency is collecting data on sightings of pink salmon so officers can monitor and review any potential impact on biodiversity.

The Environment Agency's Jonathan Shelley said:

The high numbers of pink salmon in our waters in 2017 was quite unusual. Now we've seen the first pink salmon caught in 2018, we're asking anglers and netsmen to make us aware of any other pink

salmon they catch.

I'd urge them to contact us if they see any non-native salmon in the waters, with a date, location and if possible a photograph, which would really help us identify them and build up a picture of where they are.

At this stage we don't think there's likely to be a major impact on wild fish stocks, but it is important we build up as comprehensive a picture of the number and distribution of pink salmon arriving, so we can take any necessary action.

Fishermen who hold a salmon licence and catch pink salmon are asked not to return the fish to the water if they are confident in their identification. Instead they are asked to dispatch them humanely and make the fish available to the Environment Agency for inspection and further analysis. If this is not possible, they are asked to send a sample of the scales. Coarse and trout anglers who catch pink salmon are asked to retain them in a keep net if possible and alert the Environment Agency to arrange collection. If this is not possible, the fish should be released.

Data collected will help the Environment Agency, fisheries researchers and other organisations with an interest in fisheries management in the United Kingdom, Ireland and Scandinavia, better understand how to manage the arrival of pink salmon in the UK.

Anyone with information is asked to contact the North East environmental monitoring team on 0800 807060 or email jonathan.shelley@environment-agency.gov.uk.