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CONSERVATION

BEAVERS

The Scottish Government is to allow beavers to remain in Scotland [Mar 16]. The Environment Secretary, Roseanna Cunningham, said that the species will have to be actively managed, in line with practices in other European countries. Beavers will now be added to Scotland's list of protected species. It will be the first time that a mammal has been officially reintroduced to the UK.

Scottish ministers have agreed that:

- Beaver populations in Argyll and in Tayside can remain
- The species will receive legal protection, in accordance with the EU Habitats Directive
- Beavers will be allowed to expand their range naturally
- Beavers should be actively managed to minimise adverse impacts on farmers and other land owners
- It will remain an offence for beavers to be released without a licence, punishable by up to two years imprisonment and an unlimited fine

Beavers, which were native to Scotland before being hunted to extinction in the 16th century, provide important biodiversity benefits. However, they can also cause significant difficulties for farmers and land managers in agricultural areas.

The impacts of beavers in Scotland have been closely monitored by Scottish Natural Heritage (SNH) at both the official Scottish Beaver Trial site in Knapdale in Argyll and also on Tayside, where the species has become established after being released illegally [Jul 16]. The trial was a five-year partnership project between the Royal Scottish Zoological Society (RSZS), Scottish Wildlife Trust (SWT) and Forestry Commission Scotland to undertake reintroduction of Eurasian beavers to Knapdale. The trial concluded in 2014.

Ms Cunningham said: "I have been determined to find a pragmatic approach, which balances the biodiversity benefits of reintroducing beavers with the obvious need to limit difficulties for our farmers. I want to put on record my appreciation of the efforts of the SWT, NFU Scotland, RSZS, and Scottish Land & Estates who have worked in partnership to set out a way forward. Beavers promote biodiversity by creating new ponds and wetlands, which in turn provide valuable habitats for a wide range of other species. We want to realise these biodiversity benefits while limiting adverse impacts on farmers and other land users ... But I want to be absolutely clear that while the species will be permitted to extend its range naturally, further unauthorised releases of beavers will be a criminal act. Swift action will be taken in such circumstances to prevent a repeat of the experience on Tayside."

The Scottish Government is now required by law to complete a Habitats Regulations Assessment and consider a Strategic Environmental Assessment. Management techniques to prevent beaver damage, such as controlling flow through dams, or protecting valuable trees can be carried out without a licence. More intensive management techniques, up to and including lethal control, are permitted under the Habitats Regulations for specified purposes and subject to there being no other satisfactory solution, and no adverse effect on the conservation status of the species. This is the

framework that applies in most other European countries and allows beavers to be managed to prevent serious damage to agriculture, forestry and fisheries. The Scottish Government will provide advice and assistance to farmers in understanding their options and helping them implement mitigation and prevention measures.

The two lead partners in the Scottish Beaver Trial, SWT and RSZS, said that they are delighted to be allowed to reinforce the existing population in Argyll, and welcome the news that the established population on the River Tay will be allowed to remain in place. However, in order for the species to have a long-term future in Scotland and recolonise across much of its former range, further releases – following the Scottish Translocation Code and with the full support of a range of stakeholders – will be necessary over the next few years.

Barbara Smith, of RSZS, said that it was 'a truly historic day for Scottish conservation.' She said: "Returning a keystone species to the wild for the first time in 400 years is a tremendous achievement ... and we welcome the government's commitment to the species both in Knapdale and further afield. Establishing a clear and comprehensive management plan for the species should now be our top priority. We would urge government to take a lead on this issue and firm up plans ahead of the breeding season next spring."

Jonathan Hughes, of SWT, described the development as a major milestone for Scotland's wildlife and the wider conservation movement. He said: "Beavers are one of the world's best natural engineers. Their ability to create new wetlands and restore native woodland is remarkable and improves conditions for a wide range of species including dragonflies, otters and fish. The return of beavers also has great potential for education and wildlife tourism."

Duncan Orr-Ewing, of RSPB Scotland, said: "Beavers have become the first species of mammal to be reintroduced to Scotland in what can only be described as a landmark decision from the Scottish Government, and one that RSPB Scotland welcomes and supports entirely. Beavers are incredible mammals that have a crucial role to play in our countryside, as well in terms of promoting the conservation of other native wildlife through habitat creation. The SWT and the RSZS have carried out fantastic evidence-based work at Knapdale through the Scottish Beaver Trial and today's announcement is a credit to their hard work."

"We look forward to the presence of beavers on our nature reserves and the wider biodiversity benefits they bring, as well as working with the Scottish Government, landowning and farming interests, and other wildlife conservation organisations, to secure a viable future for beavers across Scotland."

Steve Micklewright, of Trees for Life, said that it plans to move ahead with investigating the possibilities for bringing beavers to areas north of the Great Glen, working with local communities to identify where they might live without perceived adverse impacts. Mr Micklewright said: "[The] decision means that beavers can naturally spread through Scotland in the future. There is a lot of space in the Highlands where they could thrive, improving the region for other

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wildlife and providing a tourist attraction that will benefit the local economy.

“The Great Glen presents a natural barrier to beavers colonising the area on their own from the existing populations in Argyll and Tayside, so the only way to be sure they will return to the northwest Highlands would be to give them a helping hand. While it is certain that beavers could live in the Highlands, the next step is to ensure they would be a welcome addition to the landscape. That is why we plan to work out where they would be welcome. Then we plan to enter in to dialogue with the government to explore how we can help them to return to those areas.”

Trees for Life research indicated that places such as Glen Affric could support beavers. The planting of aspen trees, a vital winter food for beavers, by Trees for Life in areas beside Loch Beinn a’Mheadhoin and Loch Affric in Glen Affric, and beside the River Moriston at its Dundreggan Conservation Estate in Glenmoriston, has also improved the prospect of these areas being suitable for beaver reintroduction in the future.

The *Sunday Herald* reported that there are many calls for beavers to be legally released at new sites across Scotland. Possible places include the two National Parks, as well as Caithness and Sutherland. Sarah Robinson, of RZSS, said: “It is essential for the population to be established that there are further releases where there are willing stakeholders and appropriate habitat ... It would be ideal if the Argyll population, as well as being augmented by new releases, could join up with the 150 Tayside beavers.”

Jonathan Hughes, of SWT, said that the immediate priority was to expand the small population at Knapdale to increase the genetic diversity and secure its long-term future. He said: “It’s possible that some animals will be relocated from prime agricultural land in Tayside so suitable release sites will need to be identified in the next few years. Beavers require lochs and rivers surrounded by native woodland, and there are several areas of the country that could be suitable. Any new sites have to be considered on a landscape scale and follow the guidelines set out in the Scottish code on conservation translocations. As we move into this new exciting phase for beaver conservation in Scotland it is essential that there are no attempts at unauthorised releases. Such illegal activity would jeopardise over a decade of science-based conservation.”

Grant Moir, of the Cairngorms National Park Authority, said “We believe [beavers] can play an important role both ecologically and from an eco-tourism point of view. We will explore the potential for, and the implications of, beaver reintroduction in river catchments in the Cairngorms National Park. Once the next steps set out by ministers are complete we will work with all stakeholders through the Cairngorms nature strategy group to consider this further.”

Andrew Bauer, of NFU Scotland, said: “[Any new sites] should not be where there could be impacts on farmers or crofters. We can see advantages in moving beavers from areas of Tayside where they are in conflict with land use. But I see no need to accelerate re-colonisation by beavers – they are doing it themselves very rapidly.”

A Scottish Government spokesman said: “We have no plans to license further releases in the foreseeable future.”

GOLDEN EAGLES

A survey by RSPB Scotland and the Scottish Raptor Study Group showed that there has been an increase in the number of golden eagles in Scotland since 2003, when the last survey took

place, from 442 to 508 pairs. Scotland is now thought to be home to the UK’s entire population of golden eagles. Results from the fourth national golden eagle survey show that the population has increased by 15% since the previous survey. This is the first time, since records began, that numbers have exceeded 500 pairs; the population may now match historic levels with numbers returning to where they were two centuries ago. Golden eagles have steadily recovered in Scotland from very low numbers in the mid 19th century. The first national survey, in 1982, identified 424 pairs.

The six month survey in 2015 was funded by RSPB Scotland and Scottish Natural Heritage (SNH). The raptor may now be defined as having a ‘favourable conservation status.’

The northern Highlands and the area between the Great Glen and Stirling saw the greatest increase in numbers between 2003 and 2015. Recovery also continues in much of the west Highlands & Islands. However, the population west of Inverness remained stable over the past 13 years. RSPB Scotland said that the reason behind the lack of recovery in that area was not clear, but pointed to persecution, recreation, forestry and poor weather as possible factors. A decline in the number of animals that eagles eat because of grazing pressure from deer is thought to be another possible cause.

The survey also found that golden eagles were not found at all in many parts of the eastern Highlands, with less than a third of these traditional home ranges occupied by a pair, despite being very productive landscapes for these birds. RSPB Scotland blamed the raptor’s absence from these areas on persecution; four eagles fitted with satellite tags had been found illegally killed in the central and eastern Highlands between 2009 and 2013. Eight golden eagles had vanished in the Monadhliath mountains southeast of Inverness, in less than five years presumed illegally killed and their satellite tags destroyed, but the Scottish Moorland Group at Scottish Land & Estates claimed that there was no evidence to support this [Aug 16].

Duncan Orr-Ewing, of RSPB Scotland, said: “Increased monitoring and satellite tagging of eagles, as well as stronger sanctions against wildlife crime may be serving as effective deterrents against illegal activity, therefore helping their population to increase. However, the continued absence of golden eagles in some areas of eastern Scotland remains a real cause for concern and suggests that much more work needs to be done.”

Tim Baynes, of the Scottish Moorland Group, said the increase in the golden eagle population was in large part a tribute to members of the moorland group and the way they managed the land. He said: “They have helped the surveyors and worked with SNH in the interest of golden eagles for many years. The east Highlands still have the highest level of productivity (young *per* pair) and a stable number of occupied territories over more than three decades. The south central Highlands, which includes significant areas of driven grouse moor has shown by far the greatest increase in range occupancy – 70% – since 2003.”

The *Raptor Persecution UK* blog said: “In the 2015 survey, less than one third of the traditional ‘home ranges’ in this area were occupied by a pair of eagles and no eagles were recorded at all in over 30% of them, despite the fact that these should be very productive landscapes for these birds. Many of the vacant territories in this area are on ground managed intensively for driven grouse shooting and in recent years, four eagles fitted with satellite tags have been found illegally killed in the central and eastern Highlands. Let’s also not forget that the national golden eagle population should be

over 700 breeding pairs. In that context, a 2015 national population of 508 pairs means that around 200 pairs are still ‘missing’.

- RSPB Scotland, working with SNH and landowners, wants to reinforce the golden eagle population in Dumfries & Galloway by using up to 50 chicks taken from nests in the Highlands. A 2014 report by SNH showed that the Borders and the Dumfries & Galloway hills could support 16 breeding pairs of golden eagles; there are presently three or four breeding pairs. Without importing chicks it is feared the southern Scottish population could disappear altogether [Jul 16]. RSPB Scotland is applying to SNH for a licence to take up to ten birds a year over five years; Scottish golden eagles have already been used to help a reintroduction project in Ireland. Despite losing chicks, the Highland population is estimated to continue to grow.

FRESHWATER PEARL MUSSELS

The *BBC News* website reported that 113 freshwater pearl mussels were found dead at a river south of Lochinver in the Highlands. Police Scotland said that the mussels had been taken from the river’s bed and the shells opened to see if there was a pearl inside. The dead mussels were found during a survey for the protected species; the poaching is believed to have occurred over the summer.

Daniel Sutherland, of Police Scotland, said: “Scottish freshwater pearl mussels are a native species which are under serious threat of decline or worse extinction locally in the north of Scotland. These mussels are one of the wildlife crime policing priorities set out by government and police through the Partnership for Action against Wildlife Crime.”

Iain Sime, of SNH, said: “Through their filter feeding pearl mussels can help maintain clear water and remove some impurities. But they also require high quality water themselves. As such, they are important indicators of the health of our wider environment. It is therefore really disappointing to see our survey reveal the death of so many pearl mussels. As pearl mussels are so slow growing and can live for more than a century it will take decades of undisturbed conditions for the population to recover.”

RED SQUIRREL REINTRODUCTION

As part of the Red Squirrel Reintroduction Project, Trees for Life is to relocate 70 red squirrels from the east of Inverness-shire and Moray to the Coulin Estate by Beinn Eithe National Nature Reserve near Kinlochewe, and woodland around Plockton, which is owned by different landowners. The species is currently absent in these areas despite there being suitable habitat for squirrels.

Becky Priestley, of Trees for Life, said: “Many Highland woodlands offer the species excellent habitat far from disease-carrying grey squirrels – but because reds travel between trees and avoid crossing large areas of open ground, they can’t return to isolated woodlands without our help.”

A successful first reintroduction took place in March, when Trees for Life relocated 33 red squirrels from Forres and Strathspey to native woods at Shildaig in Wester Ross. This new population bred during the summer, with several young squirrels observed – confirming that the area is excellent habitat with a good natural food supply. Trees for Life is continuing to monitor the population. The project aims to establish ten new populations of red squirrels in the northwest Highlands, significantly increasing both the numbers and range of the species in the UK.

- *The Herald* reported that the University of Edinburgh’s School of Veterinary Studies has discovered that red squirrels in Scotland harbour a leprosy bacteria, *Mycobacterium lepromatosis* [May 16]. This strain is very similar to a virulent form of

human leprosy endemic in central America, and different to one found in red squirrels on Brownsea Island in Dorset. The research is published in the journal, *Science*.

Professor Anna Meredith, of the University of Edinburgh, said: "The discovery of leprosy in red squirrels is worrying from a conservation perspective but shouldn't raise concerns for people in the UK. We need to understand how and why the disease is acquired and transmitted among red squirrels so that we can better manage the disease in this iconic species."

The Red Squirrel Survival Trust said that fewer than 140,000 red squirrels remain in the UK (75% of them in Scotland) and they could all vanish within the next ten years.

LADYBIRDS

National Trust for Scotland (NTS) rangers at Castle Fraser in Aberdeenshire have recorded record-breaking numbers of orange ladybirds. Thousands of the tiny beetles, *Halyzia 16-guttata*, are congregating in the sycamore trees that line the castle's Broad Walk. The species is widespread in England and Wales but less common in Scotland. The NTS said that the native species may be present in such large numbers due to plentiful food supplies this summer. However, it is believed that their numbers could also herald a mild winter.

BREEDING BIRDS SURVEY

The Index of Abundance for Scottish Terrestrial Breeding Birds, 1994 to 2015, an Official Statistics Publication for Scotland, has been released by SNH. Woodland birds have increased by 68% overall since 1994. Farmland birds showed a steady increase up to the late 2000s, subsequently fluctuating between 13% and 23% above the 1994 value. The 2015 farmland bird index figure was 22% higher than in 1994. However, upland birds decreased significantly by 14% over the same period.

Some woodlands bird populations have increased hugely, such as great spotted woodpeckers, which have increased by 530% and chiffchaffs, which have increased by 752%. The reasons for changes are not certain, but changes in how woodland is managed may be starting to help woodland birds. As well, the effect of climate change is making a big difference for some woodland birds in Scotland – improved conditions in their wintering areas have helped chiffchaffs, for example. Willow warblers and tree pipits are also good examples, showing more positive trends in Scotland than further south. Willow warblers have increased by 46% with tree pipits up 86%.

Farmland birds have also increased overall, with long-term increases in several species, including goldfinch (429%), great tit (176%), magpie (143%), corncrake (127%) and whitethroat (99%). Unfortunately, declines continue among waders, with lapwing (down 53%) and oystercatchers (down 40%) experiencing large declines. Targeted management for these species through the Scottish Rural Development Programme is helping boost populations in some areas.

The most negative trend is in upland birds which are, in general, declining. However, cuckoos in the uplands have shown a 129% increase, compared to a decline in UK as a whole. Across all habitats, goldfinches have increased by 253% and blackcaps by 399%. Swifts have declines of 52%.

The data for the report are largely collected by volunteers through the British Trust for Ornithology/Joint Nature Conservation Committee Breeding Bird Survey.

See: <http://bit.ly/2gl9Rlj>

DEER MANAGEMENT

SNH has published a comprehensive review of deer management. SNH was asked by the Scottish Government to complete the deer management review after the Scottish Parliament's Rural Affairs, Climate Change & Environment Committee took evidence on the effectiveness of Scotland's current system for managing Scotland's wild roe and red deer [Sep 13].

The study found that between 1961 and 2016, red deer densities in Scotland have increased by 60% overall. However, there are 'marked variations' in deer densities across the country. The review draws on evidence from deer managers, agencies and researchers to look at how effectively deer are managed throughout Scotland. It highlights four areas:

- An overview of the current approaches to deer management
- The impacts of deer on the natural heritage
- The progress being made by the 44 upland Deer Management Groups
- Developing work with lowland deer management

The review summarises the progress that deer management groups have made over the last two years. Benefits of deer include the animals' importance to sporting estates and tourism and also being a source of 'healthy food.' In some places, however, deer continue to have a negative impact on biodiversity.

See: <http://bit.ly/2fCAPgf>

Scottish Environment LINK welcomed the 'thorough review' and said that SNH should take advantage of new powers to require forward culling plans from land owners, and should be given clearer powers to endorse culls to ensure that they are adequate to protect the public interest. These are relatively modest changes, which would build on current voluntary and collaborative deer management approaches, and which would however create the required conditions for the necessary 'step change' to take effect. SNH should receive additional resources to put the required planning and data management systems in place to inform sustainable management. All data should be available in an easily accessible format on the SNH website and made available to relevant stakeholders."

EDINBURGH GREEN ROOFS

The 'Square Metre for Butterflies' partnership, between the Royal Botanic Garden Edinburgh and Butterfly Conservation Scotland, is to plant common rock rose to create green roofs in Edinburgh. This should encourage the existing population of northern brown argus butterfly caterpillars on Arthurs Seat to expand and colonise in the newly created habitats. 'Edinburgh's butterfly,' the northern brown argus, disappeared by 1869 due to over-zealous collecting and land use changes in Holyrood Park, including road building through the last remaining population strongholds. In 2005, the butterfly was rediscovered and the population has continued to increase. It is hoped to attract at least two other species, small copper and blue butterflies.



FARMING

FARM STRUCTURE SURVEY

The chief statistician at the Scottish Government has released a range of figures for Scotland from the EU's Farm Structure Survey, which includes information on soil conservation, livestock breeding practice and use of manure. The data are used to help monitor greenhouse gas emissions.

The results show that in Scotland about 10% of tillage used conservation methods, and about 13% of land was left bare during the winter. About 3% of broadcast manure was ploughed in straight away, which would be beneficial for the environment and crop-growth, though much of the manure was spread on grassland.

Over a quarter of farms reported diversification, the most common form being tourism. 4% reported generating renewable energy for the market. One in six holdings reported that more than 10% of their turnover came from 'other gainful activities' at the location.

Of holdings that bred dairy cattle, two thirds used the best available genetic information, such as estimated breeding values. However on beef farms this was only 23% and on sheep farms, 8%. 50% of ewes were mated using a home-bred ram, with less than 1% artificially inseminated. Just under half of the cows were mated using a brought-in bull, but with 23% mated using artificial insemination.

Around 90% of farms were run on a day-to-day basis by the occupier or a member of their family; 5% of farms were owned by companies or institutions. See: www.scotland.gov.uk/stats/bulletins/01252

PESTICIDES

The *Scottish Farming Leader* reported that EU Agriculture Commissioner, Phil Hogan, is to bring forward a total ban on pesticides in Ecological Focus Areas (EFAs). The ban would restrict the use of plant protection products on productive EFA areas including catch crops, nitrogen-fixing crops and fallow land. The UK is one of 18 member states to oppose the ban.

As part of the Common Agricultural Policy (CAP) simplification agenda, Commissioner Hogan also said that he intended to retain the minimum fallow period at six months, and introduce a ten week period on catch crops, which could be reduced to eight weeks. Member states could introduce these changes, the omnibus regulation, in 2017. The European Parliament needs to scrutinise the proposed changes before they can take effect, as they are implemented via a delegated act.

BREXIT & AGRICULTURE

A report by Scotland's Rural College showed that 20% of Scottish farmers and crofters may retire early due to fears over Brexit, and over 50% worry that leaving Europe will further increase uncertainty for their businesses. This may lead to lower investment in farms and crofts, which in turn will have a negative impact on the wider rural economy. The report states: "The reason that the CAP grabs so much attention in Scotland is because it plays a very important role in ensuring Scottish farms, on average, are profitable ... in 2015 only dairy farming returned a profit before CAP support, with production costs exceeding production incomes in all other sectors."

CAP subsidies accounted for 60% of total farm output for sheep farms in less favoured areas (LFAs), 48% for LFA cattle and sheep farms and 8% for dairy farms, whose success is dependent on the price of milk.

One third of all those surveyed indicated that with Brexit they are likely to need to increase off-farm income or diversify their businesses. Being unsupported by the CAP, soft fruit growers, pig producers and others have shown the way, usually run by a younger generation. It is falsely assumed that the rural economy means agriculture. The success of wildlife tourism *etc* challenges these assumptions.

• NFU Scotland's *Beyond Brexit* discussion documents are on: www.nfu.org.uk/node/17435



WOODLANDS

GREENOAKHILL

A project to transform a landfill and recycling site into a community woodland in Glasgow has received a £380,000 funding boost. The investment will complete phase two of the woodland project, creating a network of pathways around the site at Greenoakhill. Over 20,000 trees have been planted to establish the woodland. Forest Enterprise Scotland, supported by the Central Scotland Green Network Trust, will now begin to develop the northern part of the site into a community greenspace.

Funding for the project has been provided by Patersons Quarries Ltd through the Landfill Communities Fund, administered by LandTrust.



FISHFARMING & FISHERIES

FISHFARM MORTALITIES

The *Sunday Herald* reported that internal government memos, obtained by Don Staniford of the Global Alliance Against Industrial Aquaculture, showed that Marine Harvest has accidentally killed more than 175,000 of its caged salmon in Scotland while trying to treat them for lice and disease. Over 600 tonnes of salmon had to be incinerated; Marine Harvest's Scottish salmon production decreased by 16% in the latest quarterly report to investors, largely as a result of 'incident based mortality' said to be related to losses from gill disease and sea-lice treatment.

Some 95,400 fish in Loch Greshornish on the Isle of Skye were killed by a new device called a thermolicer, designed to rid salmon of the sea-lice; it suddenly immerses fish in water much warmer than they are used to. The thermolicer killed 95% of the lice but also caused significant mortalities amongst the salmon themselves. A further 20,000 salmon were killed at Loch Greshornish fishfarm when attempting to rid the fish of sea-lice using chemicals. There are concerns that the lice are becoming increasingly resistant to chemical treatment.

60,000 salmon, in Soay Sound off the Isle of Harris, were killed by hydrogen peroxide used to treat them for amoebic gill disease (AGD) [Sep 16]. Hundreds of thousands of dead fish, many killed by AGD, were reportedly transported to Wigan to be incinerated.

Mark Ruskell MSP lodged a parliamentary question asking for a list of fishfarming incidents over the last two years. He questioned whether the industry could double production 'without disastrous consequences.'

Marine Harvest said that the salmon killed in the thermolicer incident had already been weakened by gill disease. Steve Bracken, of Marine Harvest, said: "We have been dealing with a number of challenges in relation to fish health. We have also faced challenges with AGD which is increasing in this part of the world as a result of climate change."

• The Scottish Salmon Company reported third-quarter losses after suffering an 'unprecedented' level of deaths at its fishfarms. The company said that it was hit by 'exceptional mortalities' amounting to 1,300 tonnes, about a fifth of its potential harvest. In addition, biological challenges, such as sea-lice, had led to a lower mean weight of fish harvested.

FISHFARMS & MPAs

Three community groups, Sea Change from Wester Ross, the Community of Arran Seabed

Trust (COAST), and the Scottish Salmon Think Tank have joined together to oppose applications to develop salmon fishfarms in Scotland's newly created Marine Protected Areas (MPAs). These communities believe they should have a say in the approval of future developments and be involved in the planning and monitoring of these if given approval. They are concerned that the government is acting in the interest of internationally-based corporations instead of in the interest of coastal communities and sea life. 250 salmon farms have been developed across the west coast to date.

The Sea Change community asked Cabinet Secretary, Roseanna Cunningham: "To confirm that MPAs have been designated to protect biodiversity and vulnerable species and are therefore inappropriate sites for new net-cage salmon fishfarms or expansions to these." New fishfarm sites are proposed in the Summer Isles Archipelago & the Wester Ross MPA.

COAST is concerned by the Scottish Environment Protection Agency (SEPA)'s intention to approve the expansion of the St Molios fishfarm in Lamlash Bay, close to the first community-led No Take Zone in Scotland where lobster and scallops are thriving [Oct 16]. Andrew Binnie, of COAST, said: "This is short-sighted and must not be allowed to happen. We are asking the Cabinet Secretary to call in this application and reject it on environmental grounds as it contravenes Section 3 of the Marine (Scotland) Act. Scotland's hard-won MPA network must not become an easy option for salmon fishfarms."

In response to the Scottish Government's announcement to increase aquaculture by 100% before 2030, Dr James Merryweather, speaking for the Scottish Salmon Think Tank, said: "Dissolved pollutants from over 250 open net-cage salmon farms in the west of Scotland are equivalent to nearly one and a half times Scotland's sewage if it were all pumped into the sea untreated. SEPA considers that to be 'allowable.' The natural environment and those who appreciate and stand up for it know otherwise."

The group contends that, under SEPA's inspections, net-caged salmon fishfarms in Scotland are regularly found not to comply with environmental standards and only three of these farms are Aquaculture Stewardship Council certified, unlike the 89 fishfarms in Norway. The group believes that the closed containment system model, currently promoted in Norway, would have much less impact. Organic and chemical waste is contained and can be reused or recycled. Escapes of sea-lice infected or genetically-poor farmed salmon are avoided. This model would safeguard the health of biodiverse seas as well as being compatible with local sustainable livelihoods such as creeling or adventure and wildlife tourism. See: www.arrancoast.com, <http://seachangewesterross.co.uk>, www.scottishsalmonthinktank.net, <http://southskyesas.org.uk>

WILD SALMON NUMBERS

The *Sunday Herald* reported that a report commissioned by Salmon & Trout Conservation Scotland concluded that Scottish Government estimates of wild salmon numbers are flawed. Professor Colin Adams, from the University of Glasgow, said that Marine Scotland Science (MSS)'s recent, higher estimates of numbers of salmon should be treated with 'considerable caution.' The report asks that the estimates, and their related conservation measures, be revised. As a result of the figures, conservation rules for 57 west coast rivers are being relaxed, enabling more fish to be taken. It is feared that fishfarmers could use the exaggerated numbers to justify plans to double the size of their business by 2030.

Professor Adams said: "There is little doubt

that the assumptions and simplifications used, combined with a lack of empirical data, are resulting in estimates of salmon abundances which differ significantly from the reality in a number of rivers."

A fish counter in the River Morar in the west Highlands shows an annual count of 500 salmon, one third of the government's estimate. A snorkel survey by the Argyll Fisheries Trust found 30 adult salmon in a river that the government had estimated had 1,500 annually.

Craig MacIntyre, of the Argyll Fisheries Trust, said: "When we compare our survey data of several Argyll rivers with the MSS salmon abundance estimates, we conclude that MSS has overestimated the number of salmon present by up to a factor of ten. Grossly inflating salmon numbers risks setting back local conservation efforts, such as catch and release, as well as misleading local authorities and regulators when they are making decisions about aquaculture expansion."

The Scottish Government accepted that it might need to alter some of its estimates. A spokesman said: "[Consultation had] identified several areas where new data can be incorporated to iron out inconsistencies in river gradings, particularly with respect to the west coast of Scotland. Conservation assessments are based on the best available data using internationally recognised methodologies. We have been working closely with local fisheries biologists to identify and use all appropriate information and have an on-going programme of work to refine grading processes and produce new data."

SALMON REGULATIONS

New conservation measures to protect wild salmon have been issued for the 2017 fishing season. The revised regulations follow the introduction of the Conservation of Salmon (Scotland) Regulations 2016 [Apr 16] which outlined a system of managing the fishing of Atlantic salmon in inland waters on an annual basis, by categorising their conservation status. In response to feedback from stakeholders, the 2017 approach has been progressed at river level, where possible. The regulations outline the conservation status of 168 rivers/groups of rivers. Where there are conservation status concerns, the river will be designated for mandatory catch and release.

There are 73 category 3 areas (poor conservation status); 48 category 2 areas (good conservation status) and 47 category 1 areas (good conservation status).

Environment Secretary Roseanna Cunningham said: "Scottish wild salmon is a valuable and important asset but fish numbers have been declining for a number of years. We need to take action to protect stocks for future generations, and these revised conservation regulations strike the right balance between conservation and the interests of those who fish for salmon. After listening carefully to the views of the sector, we have made changes to the conservation status of rivers for 2017. This will iron out inconsistencies in river gradings and help ensure wild salmon have a sustainable future in our waters."

This is the second year that there have been conservation limits on wild salmon. The measures were introduced to meet Scottish Government obligations under the Habitats Directive to protect salmon. The changes will come into force on 1 April 2017.

CONTIN HATCHERY

SSE has completed an upgraded £750,000 salmon hatchery at Contin, Easter Ross. The power company has a historic responsibility to keep the Conon River system stocked with fish; hydro schemes built in the area 60 years ago destroyed important spawning beds in upriver tributaries.

FISHING & BREXIT

The Scottish Government has pledged to maintain quota allocations for the fisheries industry when the devolution of new powers is confirmed. Rural Economy Secretary, Fergus Ewing, said that maintaining existing allocations through the fixed quota allocation system would provide stability to the industry. The government said that the need to reach agreement on a new fisheries management concordat with the other three UK fisheries administrations meant it has only now been possible to finalise its plans following a consultation on quota allocations in 2014.

Mr Ewing said: "In the face of uncertainty and a lack of leadership from the UK government, I can confirm that by maintaining fisheries quotas we will provide much-needed stability. This underlines why we must have new powers over our share of UK quotas. We cannot tolerate a situation where our quotas can be exported out of Scotland, and ultimately lost to future generations. The new concordat, which I hope to see published soon, will enhance our control and ensure we can protect quotas."



MARINE

TRANSOCEAN WINNER

The House of Commons Transport Committee heard evidence about the grounding of the *Transocean Winner* rig at Dalmore on Lewis in heavy weather [Aug 16]. The committee also heard evidence about the subsequent salvage operation and the management of risk of environmental damage.

Sir Alan Massey of the Maritime & Coastguard Agency said: "The evidence that I have to hand at the moment from five years of operating a single emergency towing vessel (ETV) around Scotland is that one has been adequate. I think our judgment back in 2011 to reinstate a single tug has been vindicated up until now." He said that the incident did not signal the need to return to two ETVs, as some have called for [Sep 16].

A Marine Accident Investigation Branch investigation into the incident is expected to report in summer 2017.

BEACH LITTER

The Marine Conservation Society (MCS)'s Great British Beach Clean took place over 121 beaches in Scotland. The MCS reported that the concentration of plastic bags found on Scotland's beaches fell by 10% from nine *per* 100 metres of coastline in 2015 to 8.1 in this year. However, the reduction is far less than marked than the rest of the UK. The introduction of the 5p levy on single use plastic bags in Scotland is thought to have led to the fall in the concentration of carriers littering the coastline for the second year running.

However, there was a 28% increase in the total amount of litter found on Scotland's coastline, from 45,815 items in 2015 to 58,704 this year. The litter density on Scottish beaches fell by 18% with 459.1 litter items *per* 100 metres of Scottish coastline on average compared to 563.3 in 2015.

There was a UK rise of over 4% in the quantity of drinks containers found, including plastic bottles, bottle tops and aluminium cans. There was also a 53% rise over the past year in the amount of balloon-related litter found on beaches.

CROMARTY FIRTH

The *Press & Journal* reported that the Cromarty Firth Port Authority (CFPA) is to 'refine' its application for a licence to undertake ship-to-ship transfers of oil in the Cromarty Firth, following public opposition [Oct 16]. CFPA has agreed

to carry out further public consultation with communities and carry out further modelling of the impact of any oil spill. CFPA also pledged to comply with international rules concerning treatment of ballast waters before discharge into the sea. A new licence application will be made early in 2017.



POLITICS & PARLIAMENT

BREXIT

The Scottish Government has announced that EU funding contracts for structural funds, fisheries and farming projects that are agreed before the UK proposes to leave the EU will be paid in full, providing certainty for over £700m of EU funding for Scotland. The current guarantees cover all payments of contracts for EU structural funds, CAP Pillar 2/Scottish Rural Development Programme, European Maritime Fisheries Fund and projects funded directly by the EU (eg Horizon 2020 and European Territorial Co-operation programmes) that are entered into before the UK leaves the EU – even if the payments extend beyond the date of Brexit. Separately, the UK government has provided guarantees for CAP Pillar 1 subsidy schemes, which will be guaranteed until 2020.

The Scottish Government is in talks with HM Treasury to obtain clarity on longer term funding arrangements for farmers, fishermen and communities after the point at which the UK leaves the EU.

GAMEBIRD LICENSE

The Scottish Parliament's Petitions Committee heard evidence from the Scottish Raptor Study Group (SRSG) and RSPB Scotland following a petition, PE01615, *State Regulated Licensing System for Gamebird Hunting in Scotland* [Oct 16]. It was raised by Logan Steele on behalf of SRSG.

The Petitions Committee has now agreed to hear oral evidence from the Scottish Moorland Group, part of Scottish Land & Estates, and the British Association for Shooting & Conservation before referring the petition on to the Environment, Climate Change & Land Reform Committee for further scrutiny.

A joint letter from the Scottish Moorland Group and the BASC asks that they be given the opportunity to tell the committee about the progress of existing regulatory measures and initiatives, such as the Heads up for Hen Harriers partnership-working scheme, Wildlife Estates Scotland and the Partnership for Action against Wildlife Crime.

SNH & LAND TRANSFERS

The Scottish Government published draft guidance for asset transfers under the Community Empowerment (Scotland) Act. Scottish Natural Heritage (SNH) currently owns 35,500 hectares at sites throughout Scotland and leases a further 7,500 hectares of land. SNH will now explore with communities and individuals the potential for transfer of land for public benefit, including land for starter farm units.

See: <http://bit.ly/2fy2sUW>

HELMSDALE BUYOUT

Sutherland Estates is selling 3,000 acres of land adjacent to the village of Helmsdale and has given the local community first refusal. Helmsdale & District Development Trust hopes to complete the purchase next year. The trust is investigating the possibility of constructing renewable energy schemes on some of the land of the River Helmsdale.

FOX HUNTING REVIEW

A review by Lord Bonomy of the law in Scotland on hunting with dogs has been published [Mar 16]. Hunting of foxes with hounds was banned under the Protection of Wild Mammals (Scotland) Act, passed in 2002 [Aug 02]. However, there have not been any successful prosecutions with relation to mounted fox hunting and police have branded the legislation as 'unworkable.'

The review was ordered by Scottish ministers and its remit was to examine whether the existing law gave adequate protection to wild mammals, while at the same time allowing effective control of these animals where necessary. At present, dogs can still be used to flush out foxes and chase them towards the hunts, where the foxes are shot. There have been allegations that the law has been broken because guns have not been visibly present.

Lord Bonomy's review called for:

- Clarification of the language of the Act to make enforcement easier
- Consideration of the appointment of part-time, independent hunt monitors to observe the activities of hunts on a random basis
- A Code of Practice for the conduct of hunt activities
- Consideration of whether vicarious liability is appropriate if an offence is committed
- Consideration of extending the time limit for bringing prosecutions under the 2002 Act

Lord Bonomy said: "The review has led to two broad conclusions: in the first place, that there are aspects and features of the legislation which complicate unduly the detection, investigation and prosecution of alleged offences. Secondly, that there is a basis for suspecting that there may be occasions when hunting, which does not fall within one of the exceptions, does take place and that the grounds for that suspicion should be addressed."

Environment Secretary, Roseanna Cunningham, said: "We will now carefully consider the findings, with a view to responding in 2017. Any ensuing proposals for legislative change will be subject to the proper consultation processes."

Robbie Marsland, of the League Against Cruel Sports Scotland, welcomed the review and said: "This review set out to evaluate whether the current law banning hunting in Scotland works. Lord Bonomy's robust and detailed examination clearly shows that it doesn't, and that he agrees with us and Police Scotland that improvements are essential if it is to stand any chance of fulfilling its purpose of protecting wild animals. The ball is now firmly in the Scottish Government's court. Public opinion in Scotland wants to see fox hunting banned, the government thought they had banned it and now Lord Bonomy and Police Scotland reveal that the hunts are running a coach and horses through the legislation. In short, the law isn't fit for purpose and, in keeping with the commitments made by the First Minister to strengthen the law if it were necessary, we look to the government to strengthen the law before the end of the current fox hunting season in March 2017."

Alex Hogg of the Scottish Gamekeepers Association, said: "We feel that Lord Bonomy's report is a balanced attempt to provide greater accountability and clarity around the law and we have no problems with increasing transparency. From an operational perspective, however, we would hope Scottish Government do not apply vicarious liability to a landholder who permits such activities on her/his land. It is often essential to have access to fringe or neighbouring land to get to an area where foxes are numerous."

Mark Ruskell MSP said: "Current legislation has never been fit for purpose and those who value

barbaric tradition over animal welfare and rule of law have found many loopholes to exploit. Lord Bonomy's report is clear that changes are needed to introduce greater restriction and monitoring of hunting and that landowners should also be liable for breaches of the law. The Scottish Government must act fast to bring amending legislation to Parliament and prevent further animal cruelty from taking place."

Harry Huyton, of OneKind, said: "OneKind has long argued that legislation banning fox hunting with hounds in Scotland is fundamentally flawed. Police Scotland told the review that the present law is 'unworkable' and that 'the exemptions provide opportunities for exploitation by those who continually and deliberately offend'. Now both these views have been echoed by Lord Bonomy. Lord Bonomy has done his job. It's now over to the Scottish Government to close the loopholes in the Act and end fox hunting in Scotland. I hope we will see the political will to deliver this."

- A *postmortem* examination of a fox killed during a hunt near Bridge of Weir, Renfrewshire concluded that a gun wound was unlikely to be the main cause of death and that extensive other injuries were likely to have been inflicted by dogs. OneKind and the League Against Cruel Sports called for hunting laws to be strengthened to make sure that 'no other foxes are killed in this dreadful and repugnant way.'



GENERAL ENVIRONMENT

SELKIRK FLOOD PROTECTION

A flood protection scheme in Selkirk, in the Scottish Borders, has been completed. The £31m project, which protects nearly 600 properties, has rerouted burns with an 'intelligent water management system' created at St Mary's Loch. New embankments and walls have also been constructed as part of the project.

GARNOCK CONNECTIONS

Plans to develop a landscape partnership across the Garnock Valley in Ayrshire have received funding from the Heritage Lottery Fund. Garnock Connections covers an area from Lochwinnoch to Irvine has secured the award as part of a £220,000 development phase, which also includes funding from Ayrshire LEADER. Projects to restore a network of wildlife habitats and historic sites will be created as part of a £2m initiative beginning in 2018. The project builds on successful initiatives in the area including the Irvine to Girvan Nectar Network.

The landscape partnership consists of Historic Environment Scotland, North Ayrshire Council, RSPB Scotland, the Scottish Environment Protection Agency (SEPA), Scottish Natural Heritage (SNH) and the Scottish Wildlife Trust.

The area has wetlands, estuary and sand dunes; recent surveys have uncovered several rare invertebrates found nowhere else in Scotland.

POLLUTION COMPLIANCE

SEPA assessed the pollution compliance of 5,470 industrial sites in 2015. Over 90% of operators achieved a rating of 'excellent' (78%), 'good' (12%) or 'broadly compliant' (1%). The remaining were classed as 'at risk' (3%), 'poor' (6%) and 'very poor' (1%).

The most polluting sector was waste, recycling and disposal, with 100 sites rated as 'poor' or 'very poor.' Similarly classified were 43 private sewage works, 37 public sewage works, seven crematoria, seven dry cleaners and six whisky distilleries.

The number of fishfarms rated as 'poor' was 58, compared to 42 in 2014.

See: <http://apps.sepa.org.uk/compliance>

POLLUTION PROSECUTION

Allma Construction Ltd was fined £4,000 at Glasgow Sheriff Court. It discharged surface water run-off contaminated with suspended solids from the Woodilee construction site into the Bothlin Burn in Kirkintilloch on various dates in 2012 and 2013.

AIR POLLUTION

The Herald reported that environmental lawyers, ClientEarth, are considering taking the Scottish Government to court over air quality failures. ClientEarth had already won separate Supreme Court and High Court decisions on the lack of action to combat illegal levels of air pollution in UK cities, including those in Scotland's central belt. In a further ruling, the High Court said that a timeframe for a revised plan to bring down air pollution must be put in place by the UK Department of Environment, Food & Rural Affairs. Glasgow was cited as one of four zones where 'illegal and harmful levels' of nitrogen dioxide were present.

ClientEarth said that the First Minister should 'get a grip' of the air pollution levels. The Scottish Government said that it is in compliance with the United Nation's Aarhus Convention, but NGOs have previously disagreed; the Aarhus compliance committee supports them. ClientEarth said that Scotland would have to create legislation to keep any environmental regulations that Westminster might abandon, post-Brexit.

Dr Annalisa Savaresi, of Stirling University, said that environmental protection is one of the devolved competencies of the Scottish Parliament. It is not certain whether EU powers will by default go to the Scottish Parliament or will be 're-reserved' to Westminster.

T IN THE PARK

Organisers DF Concerts and Tennent's Lager announced that the T in the Park music festival will be 'taking a break' in 2017. In a statement, the organisers blamed 'onerous' restrictions at the new site at Strathallan Castle, in particular the consequences of an osprey's nest at the site. They said: "As the build up to the festival [in 2015] was well underway we were informed by Scottish Government ministers that we would have to apply for full Planning Permission due to the presence of an unregistered, but protected in law, osprey's nest. The constraints – logistically and financially – that the resulting planning conditions put upon us are simply not workable."

Aedán Smith, of RSPB Scotland, said: "RSPB Scotland worked hard to help ensure that the event could go ahead in 2015 and 2016, while minimising the impacts the festival would have on the wildlife that the site had been home to for many years. The fact that the osprey nest that had been on the site for a number of years was able to continue to be successful, and fledge chicks, illustrates how nature and development can often successfully coexist where there is a willingness on all sides to carry out activities responsibly."

WILDLIFE CRIME

The fourth annual wildlife crime report has been published for 2015. The report brings together data from the Scottish Government, the Crown Office & Procurator Fiscal Service, Police Scotland and other sources, all members of the Partnership for Action Against Wildlife Crime Scotland (PAW Scotland).

Recorded wildlife crimes dropped by 20% in the five year period to 2015. While the five year

trend is positive, the latest figures show a rise of 11% in recorded wildlife crime between 2013-14 and 2014-15. There were 284 recorded wildlife crime offences in Scotland in 2014-15, compared to 255 in 2013-14.

The figures in the report indicate that fish poaching remains the most commonly recorded type of wildlife crime, and that there has been a small increase in these offences from 90 in 2013-14 to 101 in 2014-15 an increase over the five year period of 19%.

See: www.gov.scot/Publications/2016/11/7270

MACHAIR MAP

SNH is leading a multi-partner project to produce a comprehensive *Habitat Map of Scotland* by 2019 including 50 habitat types. The project is a major contribution to the Scottish Government's 2020 Challenge for Biodiversity and, together with the UK SeaMap, will in time provide a complete picture of all of Scotland's habitats [May 15].

SNH has mapped machair, one of Europe's rarest habitats, in Scotland for the very first time. There are more than 13,000 hectares of this special habitat on the coast, mainly in the Outer Hebrides, Tiree and Coll, with smaller amounts in the Northern Isles and the west coast mainland.

Professor Stewart Angus, of SNH said: "Machair is a constantly changing habitat, so the map represents a 'snapshot' in time. Accepting such limitations, this map is an invaluable aid to the assessment of change on our coasts, with a time-stamped baseline of machair distribution we can use to inform the impact of rising sea levels, as well as other impacts on a truly special feature of Scotland's coastal environment."

See: www.snh.gov.uk/about-scotlands-nature/habitat-map-of-scotland

HEATHER BURNING

The Ilex reported on a study by the Centre for Ecology & Hydrology on four Scottish moorland sites over 44 years. It tested the hypothesis that, without prescribed burning and with only moderate grazing, there would be a decline in plant species recorded. It concluded that, to maintain floral diversity in heathlands, there needs to be regular burning. Regular burning is required to ensure that the heather does not become tall and dense, posing a risk of wildfires.

See: *New Journal of Botany, Vol 6, No 1 pp 31-42*

CAIRNGORM HOUSING

The Cairngorms National Park Authority approved Inverdrue Sawmill Cooperative's plans for six affordable homes in woodland on the Rothiemurchus Estate. The *Strathspey & Badenoch Herald* reported that George Anderson, of the Woodland Trust Scotland, said that ancient woodlands are being lost piece by piece. He said: "Houses can be built in lots of locations but ancient woodland is irreplaceable. There is a need for housing, but it can be built where it doesn't destroy Scotland's irreplaceable wildlife habitats."

The Badenoch & Strathspey Conservation Group suggested that a less sensitive site could be found elsewhere on the estate.



ENERGY

ONSHORE WIND SUPPORT

The *BBC News* website reported that Scottish Power warned that onshore wind development will come to a standstill if the UK government does not offer an urgent commitment to its future; no new framework has been created for windfarms when subsidies come to an end in April 2017. Companies are involved in a 'wind-rush' to build turbines before the Renewables Obligation is stopped. Under the

Renewables Obligation scheme, UK electricity suppliers receive a subsidy for agreeing to source an increasing proportion of the electricity they supply from renewable sources. Scottish Power Renewables said that it wanted agreements, Contracts for Difference (CfD), to be issued so firms have some security for future investments. The contracts are used to stimulate emerging green energy developers by guaranteeing a minimum price for what they generate.

Keith Anderson, of Scottish Power Renewables, said: "What we are asking for, for onshore wind, is a level playing field. There's a new mechanism in place for offshore wind, called contracts for difference. For gas investment the government have created a capacity mechanism. We're asking for a contract to help underpin some of the risk of making these big, long term investments. We're not asking for a subsidy."

Lindsay Roberts, of Scottish Renewables, said: "Onshore wind is already one of the cheapest and most popular forms of power generation. However the UK government has locked future development out of the energy market. Their own advisors say if we are to stand any chance of meeting our climate change targets we need to at least double our renewable energy capacity. So it's vital that the UK government tells us what the future of onshore wind is going to be and that they allow it to compete in that energy market."

• The *BBC News* website reported that the UK government has announced a consultation on whether to give support packages, CfD, to onshore wind development in the Western and Northern Isles. The consultation will run until the end of January.

The Minister for Business, Innovation & Energy, Paul Wheelhouse, said: "I am extremely disappointed, indeed angered, by the UK government's handling of this vitally important issue. The Scottish Government repeatedly sought assurances from UK government ministers about their plans to support renewable energy projects through the CfD auction. The UK government has misled Scottish ministers and the members of the Scottish Island Renewable Delivery Forum on the promised support for island wind projects. The island projects have already waited for too long for the decision promised by Andrea Leadsom in September 2015.

"The Department for Business, Energy & Industrial Strategy (BEIS) were invited to notify the state aid case for Remote Island Wind ten months ago -- why have they not used this time to consult? The Scottish Government and the island councils asked the UK Government for a meeting of the Scottish Island Renewable Delivery Forum on numerous occasions in the last year but received no response. At no time was it suggested there would be a further consultation.

"We now call upon the Secretary of State to reconvene the forum and have the courtesy to explain this decision to those affected in person. The Scottish Government has also made BEIS aware of the tight timeline for the actions needed to allow island wind projects and the transmission links to be built. It is simply unacceptable that they now jeopardise these highly significant projects by proposing a further indefinite delay. This delay means the CfD and the needs case submission to Ofgem are again kicked into the long grass and developers are effectively barred from competing in the next CfD round ... In this triumphant moment for the [marine renewables] sector, it is extremely disappointing that BEIS has reneged on its earlier commitment to provide a minimum allocation for wave and tidal stream technologies ... We again call for a new approach to the UK's relationship with Scotland on energy issues, with

key decisions on energy policy made following a process of consultation and agreement with the Scottish Government, as set out in the Scotland Act 2016."

WIND ENERGY OCTOBER

WeatherEnergy data showed that wind turbines generated 792,717 MWh of electricity to the National Grid in October, an increase of more than a quarter on the same month in 2015. Scotland's total electricity consumption in October was 2,080,065 MWh, with wind power generating 38% of Scotland's power needs for the month.

Karen Robinson, of WeatherEnergy, said: "According to the Met Office, Scotland had the sunniest and one of the driest Octobers since records began. However, the month also witnessed some powerful winds leading to a significant increase in wind power output when compared to last year."

• Scottish Conservatives accused the Scottish Government of overturning two-thirds of windfarm applications rejected by local authorities in 2016. Energy spokesman Alexander Burnett said: "The SNP's obsession with onshore wind energy is damaging Scotland's countryside and ruining local democracy. Too often, when these applications are lodged, the people say no, council planners say no and local elected representatives say no. You'd think the Scottish Government would respect this, yet still we see ministers in Edinburgh pulling rank and acting like they know what's best for rural Scotland. Of course wind energy has a place in Scotland's energy mix, but only when the turbines are not ruining local scenery and upsetting those who have to see them every day."

WINDFARMS & BATS

The Herald reported that the National Bat & Wind Turbines study was partly commissioned by Scottish Natural Heritage to study the death rates of bats around turbines. The project studied 46 windfarms across the UK, of which 16 were in Scotland. Bats were being regularly killed in at least more than a third of them; up to 64 bats per day are killed, although the figure is highly variable. The mammals are fatally injured while hunting insects, such as midges, attracted by the heat generated by the spinning turbine blades. The number of bats in areas where turbines are present has fallen by 54% throughout the UK.

The report calls for an overhaul in the Ecological Impact Assessments (EIAs) as they have proved to be poor predictors of future bat fatalities.

Professor Fiona Mathews, of Exeter University and one of the authors of the study, said: "The findings highlight the difficulty of establishing with certainty the effect of major developments before they occur. This is a real problem for the planning system. It's difficult to say exactly how many bats have been killed by windfarms because it's very difficult to work out. They are small and brown and although some people may not like them they play a very important part in the environment. The tiniest can eat 5,000 midges a night. They also keep moths and caterpillars at bay increasing crop yields. So it's something that affects us all ...

"We need to remember bats have been around for at least 30 million years and during that time have been able to fly happily without the risk of colliding with a spinning object. If bats are actively attracted to turbines then it might not prove possible to predict this accurately in advance. Our work highlights this can be difficult to achieve in practice as animals do not always behave the way we might anticipate."

Professor Mathews said that one approach to keep bats safe is to minimise the rotation of turbines at night in the summer and early autumn when bats are most active. Some operators are testing this method. Bats can mistake wind turbines for tall trees because the air currents are similar. She called for more thorough assessments prior to building along with careful study of casualties post-construction and their impact on local bat populations. See: <http://bit.ly/2fcnJw2>

WINDFARM UPDATES

Ayrshire: ScottishPower Renewables' 23 turbine 69 MW Dersalloch windfarm, between Straiton and Dalmellington, is now operational.

• Planning consent has been refused by the Scottish Government for the 17 turbine Keirs Hill windfarm near Patna following a public inquiry. Permission was refused due to the landscape and visual impact the project would have.

Dumfries & Galloway: The consultation on the Draft Wind Energy Supplementary Guidance for Dumfries & Galloway has concluded. It includes suggested sizes for turbines. See: <http://bit.ly/2efBDhR>

Highland: The *Strathspey & Badenoch Herald* reported that revised plans for Infinergy's 13 turbine Tom nan Clach windfarm near Lochindorb were granted consent by the Scottish Government on appeal [May 16]. There will now be four fewer turbines but they will be 125 metres in height, 15 metres taller than originally proposed. The application had been rejected by the council because of the visual impact on the Drynachan, Lochindorb & Dava Moor Special Landscape Area. Objectors to the scheme included community councils in Carrbridge and Dulnain Bridge. Construction of the access tracks started this summer.

Kevin Stewart, minister for local government, said: "The reporter concluded that as planning permission already existed for an alternative proposal to develop a windfarm of 17 turbines on land at Tom nan Clach, the principle of the use of the land for the development of a windfarm was therefore established."

Scottish Borders: Kilrubie Wind Farm Ltd has dropped a planning appeal to the Scottish Government over the authority's failure to deliver a decision on its scheme near Eddleston. The project could not coexist with the recently approved 18 turbine Cloich Forest Wind Farm due to cumulative noise effects [Jul 16]. The company said that it would now discuss an alternative scheme for the Eddleston site with the council.

• Councillors have decided to oppose EDF's plans to expand Fallago Rig windfarm near Lauder, citing the cumulative effects on the landscape [Oct 16]. Planning officers had advised the council not to object to an additional 12 turbines. EDF also wanted to extend the life of the current 48 turbine windfarm as part of their application.

• Ecotricity has withdrawn plans to build 16 wind turbines at Inch Moor near Duns.

OFFSHORE WIND

Hexicon AB is proposing two floating wind turbines off the north Caithness coast. It has sought permission from the Highland Council and Orkney Islands Council for the demonstration project, which is currently with the Scottish Government. The proposed site is about three miles offshore from the Dounreay nuclear power complex, in the Pentland Firth. The turbines would be fixed on to a single semi-submersible platform, with a total capacity of around 12 MW.

HYDRO SCHEMES

Over £1.5m funding has been secured from the Scottish Government, via the Energy Saving

Trust and Local Energy Challenge Fund, for a series of hydroelectric generators placed on the Gala Water in Galashiels, Scottish Borders. The scheme will initially create 150 kW of power although it is hoped that could rise to up to 400 kW in the longer term.

- The 500 kW Glenkiln Hydro power plant on Arran is now operational and will supply 15% of the island's domestic electricity. It was developed by JK&C Bone, farmers in Lamlash, and MEG Renewables.

- Scottish ministers have granted approval for a 400 MW £150m pumped storage hydro station at an opencast coal site in Glenmuckloch, Dumfries & Galloway. The project is led by Buccleuch Estates and 2020 Renewables [Dec 15].

TIDAL POWER

A single turbine in Atlantis Resources' MeyGen project in the Pentland Firth off the Caithness coast has exported electricity for the first time [Sep 14]. The device is the first of four 1.5 MW tidal stream turbines that are to be installed in the Inner Sound. Atlantis hopes to eventually expand the project up to 269 turbines, producing 398 MW. MeyGen has been described as the world's first large-scale tidal energy farm. Atlantis is the majority owner of the scheme, which is also funded by Scottish Enterprise, Highlands & Islands Enterprise, Crown Estate, the former UK Department for Energy & Climate Change and the Scottish Government.

- *The Times* reported that University of St Andrew's Sea Mammal Research Unit (SMRU) and the Scottish Association for Marine Science (SAMS) found that large numbers of common (harbour) seals are attracted to the Kyle Rhea channel between Skye and the mainland. Fast currents, and associated large shoals of mackerel, can attract high numbers of seals leading to potential collisions with turbines in marine energy schemes.

SMRU and SAMS want the impact on marine life in such schemes to be monitored. Atlantis said that one of the reasons it abandoned its scheme at Kyle Rhea was the number of seals [Mar 16]. It said that its MeyGen project had been fully environmentally assessed.

NORTH SEA GAS

Gas production has started from the Alder project in the North Sea, a field first discovered in 1975 when its development was considered 'impossible' because of the challenges of the field's reservoir, lying 4,480 metres beneath the seabed. Chevron said that it was now viable due to the 'right combination of technology, infrastructure for processing and export, and commercial conditions.' Gas produced from the field will be sent via a 28 km pipeline to the ConocoPhillips-operated Britannia platform.

UOG RESEARCH

A package of six independent research reports have been published to inform the Scottish Government's position on whether or not to allow any Unconventional Oil & Gas (UOG) development in Scotland [Oct 16]. This research addresses evidential gaps identified by the Independent Expert Panel, established by the Scottish Government, to look at the issues around UOG, including fracking and coalbed methane extraction. The research will now inform a four month public consultation which will launch in tandem with the consultation on the Scottish Government's draft Energy Strategy and the Climate Change Plan, being published in draft form early in 2017. The moratorium on UOG will remain in place throughout the consultation. The research considers the climate change

impacts of UOG; understanding and monitoring of induced seismic activity and understanding and mitigating community level impacts from transportation, decommissioning, site restoration and aftercare.

The climate change impact report was undertaken by the Committee on Climate Change (CCC) and examined the impacts of UOG on greenhouse gas emissions and climate targets. CCC considered that exploiting UOG on a significant scale is only compatible with Scotland's climate change targets if (a) emissions are limited through tight regulation, (b) Scottish UOG production displaces imports, rather than increasing domestic consumption, and (c) emissions from production of UOG are offset through reductions in emissions elsewhere in the Scottish economy.

In terms of potential implications for global emissions, the report found that the overall emissions footprint of Scottish UOG, if tightly regulated, is likely to be broadly similar to that of imported gas and that initial evidence suggests that tightly regulated shale gas production is likely to have a broadly neutral impact on global emissions, with emissions savings due to switching from higher-carbon fossil fuels approximately offsetting emissions increases due to increased use of unabated gas. See: www.gov.scot/ISBN/9781786523976

The induced seismic activity report was undertaken by the British Geological Survey. Scotland is characterised by low levels of earthquake activity and the risk of damaging earthquake is low. On average there are eight earthquakes of magnitude 2 or above in Scotland every year, which is approximately the magnitude above which earthquakes might be felt by people. Hydraulic fracturing to recover hydrocarbons is generally accompanied by earthquakes with magnitudes of less than 2 that are too small to be felt. Improved understanding of the hazard from induced earthquakes and the successful implementation of regulatory measures to mitigate the risk of induced seismicity are likely to require additional data from a number of sources, including improved monitoring capabilities.

The Energy Minister, Paul Wheelhouse, said: "The extensive package of research published will ensure the public has access to a comprehensive evidence base on the potential health, economic and environment impacts of UOG ahead of the launch of the Scottish Government's public consultation in the early New Year. These studies are an important contribution to the examination of the potential impacts of unconventional oil and gas technologies and underline the Scottish government's precautionary, robust and evidence-based approach to UOG."

Once the consultation closes and the results have been independently analysed and published recommendation on the future of UOG will be made; the Scottish Parliament will then vote on it, by the end of 2017. The Scottish Government will then come to a considered judgment on the future of unconventional oil and gas in Scotland.

Mary Church, of Friends of the Earth Scotland, said: "The economic case for pursuing an unconventional gas industry in Scotland simply doesn't stand up, while the risks of doing so could be utterly devastating for communities and the environment. No state has had a moratorium on fracking, looked at the evidence and decided it's a good idea."

Lang Banks, of WWF Scotland, said: "Looking at the three tests posed by the government's own independent climate watchdog, it's very hard to see how Scotland could go ahead with fracking without breaching its carbon targets. According to

the independent research, the direct emissions from the production process of an unregulated fracking industry alone could potentially add more than 10% to our current annual climate emissions. And that's before you consider the climate science, namely that the vast majority of known global fossil fuel reserves need to be left in the ground."

Alexander Burnett MSP said: "We have more dithering and delay and a failure to recognise an opportunity to boost the economy and create jobs at a time when the North Sea oil and gas industry is in decline. Ministers have already commissioned expert scientific advice, which found that fracking can take place safely provided the right regulatory regime is in place. However, they chose to ignore that for political reasons. We now have yet more evidence, but this government seems incapable of making a tough decision."

See: www.gov.scot/ISBN/9781786523952



NEWS OF ORGANISATIONS

CROFTING COMMISSION

A review, commissioned by the Scottish Government, has begun into governance arrangements the Crofting Commission. The government said that the review would cover the systems, procedures and support mechanisms to underpin effective decision making. Arrangements for handling conflicts of interest also form part of the review.

HIE

The *Island News & Advertiser* reported that Highlands & Island Enterprise (HIE) is to be disbanded. John Swinney MSP said that, along with other enterprise agencies, HIE will lose its governing board; a single board will replace the individual agencies.

See: www.gov.scot/Resource/0050/00508447.pdf

LAND COMMISSION

Five Land Commissioners, Andrew Thin (chair), Professor David Adams, Megan MacInnes, Lorne MacLeod and Dr Sally Reynolds have been selected for the first Scottish Land Commission [Oct 16]. Dr Bob McIntosh joins the Commission as Tenant Farming Commissioner. The Land Commission will be located in Inverness and will be operational from April 2017.

MOUNTAINEERING SCOTLAND

Mountaineering Scotland, formerly Mountaineering Council of Scotland, has launched a new website: www.mountaineering.scot which includes features on Mountaineering Scotland's campaigns protecting mountains, and safeguarding access.

RSPB SCOTLAND

Stuart Housden is to retire as director of RSPB Scotland, after 22 years in post.

CORRECTION

The October issue (346) of *SCENES* stated that RSPB Scotland's Mersehead reserve has the only site in Scotland for natterjack toads. However, a subscriber pointed out that they are also present at the Wildfowl & Wetland Trust's Caerlaverock site at Powfoot near Annan. The Mersehead population originated with translocation of adults from Caerlaverock. Apologies.

