http://www.windbyte.co.uk/birds.html

Windbyte

BIRDS AND TURBINES

Picking up Turbine Casualties, Navarre, Spain.

By kind permission, © Gurelur.

NB. There are quite a few more photos of this kind online. As you can see, more than one bird has been found dead at the same time. Every item here highlights the type of danger faced by our red kites and other large birds, so there seems no need for many yellow highlights.

This page is edited because of its length – almost 100 page-downs! That in itself shows how many bird deaths to birds are reported. RJC.

'Energy company to pay out $1m over eagle deaths at wind farms'.

'US energy supplier Duke Energy agrees six figure settlement after pleading guilty to killing 14 eagles and 149 other birds at Wyoming wind farms'

The Telegraph, 23 November, 2013

'The U.S. government for the first time has enforced environmental laws protecting birds against wind energy facilities, winning a $1 million settlement from a power company that pleaded guilty to killing 14 eagles and 149 other birds at two wind farms in the western state of Wyoming.
[...]'.

'Wind farm bird deaths more than thought'

Birdwatch, 21 Jul 2013

'New research from the United States indicates that bird deaths from wind farm collisions may have been underestimated by up to 30 per cent. 'After the sad death of the White-throated Needletail on Harris, Outer Hebrides, on 26 June when it hit the shaft of a wind turbine on the island, some birders were vocal in their disapproval of the prominent energy generators, proclaiming them to be killers of bird in large numbers. While some of these claims were somewhat exaggerated, it turns out that they may indeed be more dangerous than thought previously

.
'A new study just published in the United States has estimated that around 573,000 birds were killed by wind turbines in 2012 (including 83,000 birds of prey), in increase of 30 per cent on a previous estimate by the US fish and Wildlife Service in 2009. Bats are even worse hit, says author K Shawn Smallwood, and probably top 888,000 killed per year.
[...]'.

'Birdwatchers see rare white-throated needletail fly into turbine on Harris'

BBC News, 27 June, 2013.

'An enthusiast who travelled to the Western Isles to view a rare bird has told of his "dismay" after watching it fly into a wind turbine and die.

'The white-throated needletail, which breeds in Asia and winters in Australasia, was spotted on Harris. 'About 30 birdwatchers travelled to the island to see the unusual visitor, which has only been recorded five times in

the UK since 1950. 'However, they then saw it die after colliding with the wind turbine.
[...]'.

NB by RJC. Report of one bird's death? Report of one bird that was being WATCHED!!! What about all the other little brown birds that are not being watched???

'CA Wind Facilities Want Permits That Will Allow Them to Harm Eagles'

Rewire, 13 June, 2013.

'Four California-based wind power facilities have applied to the federal government for permits to harm eagles, ReWire has learned. The applications, revealed as the result of a Freedom of Information Act (FOIA) search by an Oklahoma journalist, would shield the wind power companies from prosecution under the federal Bald and Golden Eagle Protection Act (BGEPA) if eagles are injured or killed by their turbines.
[...]'.

'Obama administration gives wind farms a pass on eagle deaths, prosecutes oil companies'

Associated Press, 14 May, 2013

'The Obama administration has never fined or prosecuted a wind farm for killing eagles and other protected bird species, shielding the industry from liability and helping keep the scope of the deaths secret, an Associated Press investigation has found. 'More than 573,000 birds are killed by the country's wind farms each year, including 83,000 hunting birds such as hawks, falcons and eagles, according to an estimate published in March in the peer-reviewed Wildlife Society Bulletin.
[...]'.

'Two Vulture Species in Africa at Risk of Extinction Due to Wind Power Project'

The Green Optimistic, 5 February, 2013

'According to Birdlife International, two threatened vulture species in southern Africa may be at risk of extinction if a new wind power project in the mountains of Lesotho comes to fruition. The vultures are often killed by the spinning blades of the wind turbines, and experts are certain the wind power project will have dire consequences.

'Both Bearded and Cape Vultures are at risk if the wind farm planned by PowerNet Developments comes to pass. Only 200 breeding pairs of Bearded Vultures exist in southern Africa and 60% of the population is found in Lesotho. The Cape Vulture, which is only found in southern Africa is at great risk with only 12% of the global population remaining in Lesotho.

'In a move that still astounds conservationists, in 2011, Classical Environmental Management Services released a report that did not mention the two vulture species and even went so far as to say there were no major environmental flaws to prevent the wind farm project from proceeding.
[...]'

'Wind Power: What is it we are trying to save?'

Luke Dale-Harris, The Ecologist, 30 January, 2013

'Luke Dale-Harris questions whether our concern over climate change is actually driving us to invest in renewable technologies that negatively impact the very natural wonders we are aiming to preserve....'

'Wind farms vs wildlife -the shocking environmental cost of renewable energy.

The Spectator, Clive Hambler, 5 January 2013

'Wind turbines only last for 'half as long as previously thought', according to a new study. But even in their short lifespans, those turbines can do a lot of damage. Wind farms are devastating populations of rare birds and bats across the world, driving some to the point of extinction. Most environmentalists just don't want to know. Because they're so desperate to believe in renewable energy, they're in a state of denial. But the evidence suggests that, this century at least, renewables pose a far greater threat to wildlife than climate change.

'I'm a lecturer in biological and human sciences at Oxford university. I trained as a zoologist, I've worked as an environmental consultant — conducting impact assessments on projects like the Folkestone-to-London rail link — and I now teach ecology and conservation. Though I started out neutral on renewable energy, I've since seen the havoc wreaked on wildlife by wind power, hydro power, biofuels and tidal barrages. The environmentalists who support such projects do so for ideological reasons. What few of them have in their heads, though, is the consolation of science.
[...]'

'Windfarm opponents angry at loss of birds of prey'

The Courier, 22 December, 2012.

'Campaigners have hit out following the news that two rare birds of prey died after striking wind turbines. 'RSPB Scotland revealed that an adult hen harrier had been found dead at the 68-turbine Griffin windfarm in Highland Perthshire earlier this year.

'A second raptor was discovered with a broken wing three weeks later and sadly died from its injuries. 'Investigations suggest that both birds were fatally injured as a result of mid-air collisions with the turbine blades.
[...]'

NB. Hen Harriers are our rarest resident bird of prey. There is no such thing as a 'disposable' Harrier! RJC.

'German wind farms kill bats from near and far'

Forschungsverbund Berlin e.V. (FVB), 2 July, 2012.

'Local wind turbines may have large-scale negative effects on distant ecosystems. Results of research by the Leibniz Institute for Zoo and Wildlife Research (IZW) demonstrate that bats killed by German wind turbines originate mostly from northeastern Europe.
[...]

Previous studies have already highlighted that more than 200,000 bats are killed each year by German wind turbines. Researchers are convinced that such high mortality rates may not be sustainable and lead to drastic population declines in their breeding ranges. "Bats have a very low reproductive output, with only one or two offspring per year", says Christian Voigt from the IZW. Bat populations may need a long time to recover from any additional losses owing to fatalities at wind turbines if they recover at all.
[...]'

'Wind Power Could Kill Millions of Birds Per Year by 2030'

American Bird Conservancy, Press Release, 2 February, 2012.

'American Bird Conservancy (ABC), the nation's leading bird conservation organization, said today that the build-out of wind energy proposed by the federal government to meet a Department of Energy target of generating 20% of the nation's electricity through wind power is expected to kill at least one

million birds per year by 2030, and probably significantly more.

'ABC considers the one million estimate, which is based on a 2005 paper, 1 and widely cited by the wind industry, as likely a significant underestimate of bird mortality. For example, a more recent 2009 estimate by the U.S. Fish and Wildlife Service (FWS) indicated that approximately 440,000 birds were already being killed per year.2 At the time, 22,000 turbines were in operation representing 25GW of installed capacity, a fraction of the 300GW of production capacity needed to meet the 20% by 2030 target. Wind farms are also expected to impact almost 20,000 square miles of terrestrial habitat, and over 4,000 square miles of marine habitat by 2030, some of this critical to threatened species.
[...]'

---

1 Based on mortality estimates in Erickson, Wallace P., Johnson, Gregory D and Young Jr., David P.(2005). A Summary and Comparison of Bird Mortality from Anthropogenic Causes with an Emphasis on Collisions. USDA Forest Service Gen. Tech. Rep. PSW-GTR-191, pp 1029-1042.

2 The 440,000 estimate corrects for biases regarding: inconsistencies in duration and intensity of searches; size of the search plots; failure to estimate mortality during the peak periods of migration, or during some migration periods at all; impacts from wind wake and blade tip vortices; biases from unaccounted crippling losses; and the possibility of mass mortality events where night-time migration coincides with inclement weather, that are not typically addressed or corrected for by existing studies.
[...]

'Pa. wind turbines deadly to bats, costly to farmers' [Pennsylvania, USA]
Pittsburgh Post-Gazette, 17 July 2011.
(.....)
'A bat killed by a wind turbine in Somerset can lead to higher tomato prices at the Wichita farmers market.' Bats are something of a one-species stimulus program for farmers, every year gobbling up millions of bugs that could ruin a harvest. But the same biology that allows the winged creatures to sweep the night sky for fine dining also has made them susceptible to one of Pennsylvania's fastest growing energy tools.

The 420 wind turbines now in use across Pennsylvania killed more than 10,000 bats last year -- mostly in the late summer months, according to the state Game Commission. That's an average of 25 bats per turbine per year, and the Nature Conservancy predicts as many as 2,900 turbines will be set up across the state by 2030.
[...]

Oxford University biologist speaks out

Clive Hambler, Lecturer in Biological and Human Sciences, Hertford College, University of Oxford.

'I think wind farms are potentially the biggest disaster for birds of prey since the days of persecution by gamekeepers, and I think wind farms are one of the biggest threats to European and North American bats since large scale deforestation. The impacts are already becoming serious for white-tailed eagles in Europe, as is abundantly clear in Norway. A wind farm – built despite opposition from ornithologists – has decimated an important population, killing 40 white-tailed eagles in about 5 years and 11 of them in 2010.

The last great bustard in the Spanish province of Cadiz was killed by a wind development. In my experience, some "greens" are in complete denial of these impacts, or hopefully imagine that these bats and birds can take big losses: they can't because they breed very slowly.

'Birds of prey often soar where wind farms are best-sited, and may be attracted to their deaths by the vegetation and prey around the turbines. A similar deadly ecological trap has been proposed for bats, with some species attracted by insect prey or noise around the turbines.

'There are very serious suggestions of a cover-up of the scale of the problem, by some operatives hiding the corpses of birds, but you only have to look at the Save the Eagles website to see the evidence accumulating despite scavengers or deception.

'To my mind one of the worst problems is that wind farms will prevent the recovery of birds of prey, other threatened birds, and bats – denying them great swathes of the European and North American continent where they once dwelt. This flies in the face of the legally binding Convention on Biological Diversity, which encourages restoration of habitat and species whenever practicable. It makes a nonsense of the idea that wind is 'sustainable' energy – except in that it sustains and renews ecological damage.'

'Wind power turbines in Altamont Pass threaten protected birds
LA Times, 6 June, 2011.

'Scores of golden eagles have been killed after striking the thousands of wind turbines in the Bay Area, raising questions about California's move toward alternative power.

'Scores of protected golden eagles have been dying each year after colliding with the blades of about 5,000 wind turbines along the ridgelines of the Bay Area's Altamont Pass Wind Resource Area, raising troubling questions about the state's push for alternative power sources. 'The death count, averaging 67 a year for three decades, worries field biologists because the turbines, which have been providing thousands of homes with emissions-free electricity since the 1980s, lie within a region of rolling grasslands and riparian canyons containing one of the highest densities of nesting golden eagles in the United States.

'"*It would take 167 pairs of local nesting golden eagles to produce enough young to compensate for their mortality rate related to wind energy production,*" said field biologist Doug Bell, manager of East Bay Regional Park District's wildlife program. "*We only have 60 pairs.*"
[...]

Raptors and Turbines in Highland Scotland

A partnership project between the Highland Foundation for Wildlife, the Cairngorms National Park Authority, Scottish Natural Heritage, Natural Research, RSPB and private estates within the National Park, with additional funding from Cairngorms Local Biodiversity Action Plan and Partnership for Action Against Wildlife Crime in Scotland, is tracking raptors in the Cairngorms area with the aim of better understanding their movements and behaviour.

The project website shows the movements of individuals that are being satellite tracked. This project is supplying a growing body of evidence of the potential for damage to raptor populations - golden eagles in particular - from the massive turbine parks that are being consented in the Highlands, and the Cairngorms in particular.

See the RaptorTrack website for more details. Have a look at the diary for Cullen, a young golden eagle.

'Interview with Alv Ottar Folkestad about the White-tailed Eagle in Norway'

'European Raptors, Biology and Conservation', 10 March, 2011.

'Markus Jais: What other threats to White-tailed Eagles do exist in Norway?'
'Alv Ottar Folkestad: During the history it has time and again been demonstrated that the main threats to the White-tailed Eagle are connected to human activity, directly or less directly. For about a century and a half it

was persecution. Today it is land use in different ways, forestry, tourist industry, boating, and hiking, but what to me is a really scaring prospective is the way wind power development has been introduced in this country. The first wind power plant of significant size in Norway, on Smøla, is localized into the most spectacular performance of nesting concentration of White-tailed Eagles ever known.

There are plans for making wind power into huge dimensions, and most of them localized in the most pristine coastal landscape of the most important areas of the White-tailed Eagle. During the last five and a half years, the wind power plant on Smøla has been killing 40 white-tailed eagles, 27 of them adult or sub adult birds, and 11 of them during 2010. There are no mitigating measures taken so far, and hardly any to think of, and there is no indication of adaptation among the eagles to such constructions.'
[...]

See below for more information on the Smøla disaster.

Strait of Gibraltar: over 100 Griffon vultures die yearly (Spain)

CanalSur news video on EPAW website - 12 November, 2010 (English subtitles).Andalusia's public television channel report on The Migres Foundation findings that more than 100 migrating Griffon Vultures are killed every year by wind turbines overlooking the Strait of Gibraltar.
'[...]'

'Bird and bat deaths don't seem to tar wind industry'
Calgary Herald, July 10, 2010.

'Last month's guilty verdict against Syncrude in the deaths of 1,606 ducks at an oilsands tailings pond received international media coverage.

'Meanwhile, little attention has been paid to 1,982 bird and bat deaths at Canada's second-largest wind farm, Ontario's Wolf Island Eco-Power Centre. 'According to a monitoring report in May, the nearly 2,000 bird and bat deaths during the first eight months of the wind farm's operation involved 33 birds species and five bat species. No charges have been laid.
'[...]'

'Portland school turns off wind turbine to halt seabird slaughter'
Dorset Echo, 3 July 2010.

'A £20,000 wind turbine brought in to make a Portland primary school more environmentally friendly has been turned off because it was killing seabirds.

'Headteacher Stuart McLeod, of Southwell Community Primary School, said they "tried everything" to solve the problem but had no choice but to shut it down. 'In the past few months the nine metre high generator has taken the lives of 14 birds – far higher than the manufacturer's estimate of one per year. 'The wind turbine was installed at the school around 18 months ago, thanks to grant funding, to provide six kilowatts of power an hour.

'Mr McLeod said: "*We've got the ideal location for wind power but unfortunately seagulls kept flying into it.*" '"*We were told by the manufacturer to expect maybe one fatality a year but it killed 14 in six months so we took advice and made the decision to turn it off.*" '"*If it had happened at night time you could understand that the birds couldn't see the blades, which rotate at 135mph but it was happening at all different times of the day.*"
'[...]'

See Mark Duchamp's report on the Red Kite International Symposium 17-18 October, 2009, Montbéliard, France.

(.....) an ornithologist from the RSPB argued that at the Braes of Doune windfarm in Scotland, the consultant had found that the red kites were avoiding the windfarm.

Since a red kite had collided with a turbine before their research started, this would imply that Scottish red kites are able to learn to avoid windfarms. This would also imply that red kites in the rest of Europe are more stupid, because they get killed in large numbers: in Germany, the estimate is 200-300 red-kite/wind-turbine collisions per year, and in Italian valleys where windfarms have been installed they have almost disappeared entirely (relief and the use of declivity winds may explain the higher mortality as compared to Germany).

'Breeding Birds and Wind Farms'

Center for the Study of Carbon Dioxide and Global Change, 16 June 2010.
'Reference
'Pearce-Higgins, J.W. , Stephen, L., Langston, R.H.W., Bainbridge, I.P. and Bullman, R. 2009. The distribution of breeding birds around upland wind farms. Journal of Applied Ecology 46: 1323-
1331.
'Background
'With respect to negative effects of wind farms, the authors write that "*the displacement of birds away from turbines can result in individuals abandoning otherwise suitable habitat,*" and they say that such "*has been*

Page found to occur in a number of individual wind farm studies," citing the works of Leddy et al. (1999), Larsen and Madsen (2000), Kowallik and Borbach-Jaene (2001), Hotker (2006), Hotker et al. (2006) and Larsen and Guillemette (2007). In fact, they report that "*somepoorly sited wind farms have resulted in sufficient deaths to produce a population-level effect,"* referencing the studies of Barrios and Rodriguez (2004, 2007), Everaert and Stienen (2006), Smallwood and Thelander (2007), Sterner et al. (2007) and Thelander and Smallwood (2007).

'What was done

'In an effort designed to study this issue more broadly, Pearce-Higgins et al. assessed the degree of occurrence of twelve widely-distributed species of breeding birds within the vicinity of wind farm infrastructure (turbines, access tracks and overhead transmission lines) on twelve different wind farms located within unenclosed upland habitats (moorland, rough grassland and blanket bog) in the United Kingdom, which sites included most of the existing large upland wind farms in Scotland and northern England.

What was learned

The five UK scientists obtained "*considerable evidence for localized reduction in breeding bird density on upland wind farms."* More specifically, they report that after accounting for habitat variation, "*seven of the twelve species studied exhibited significantly lower frequencies of occurrence close to the turbines,"* and that there was "*equivocal evidence of turbine avoidance in a further two,"* while "*no species were more likely to occur close to the turbines."* Access tracks, on the other hand, proved much less of a nuisance than turbines; and there was no evidence for consistent avoidance of overhead transmission lines. All things considered, they thus concluded that "*levels of turbine avoidance suggest breeding bird densities may be reduced within a 500-m buffer of the turbines by 15-52%, with buzzard (Buteo buteo), hen harrier (Circus cyaneus), golden plover (Pluvialis apricaria), snipe (Gallinago gallinago), curlew (Numenius arquata) and wheatear (Oenanthe oenanthe) most affected."*
'[...]'

NB. So in some places birds are killed by wind farms, but in other places birds are driven away? I think this apparent contradiction may be explained by the attitudes of different species, with the possible exception of hen harriers (so rare that in a lifetime's bird watching, I've never seen one in the UK.)

Alternatively, this could show a difference between feeding and breeding. RJC.

'Windfarm turbines deadly for birds, bats'

Globe & Mail, Ontario. 9 June, 2010.

'"Shockingly high" numbers of bird and bat deaths caused by one of Canada's biggest wind farms should serve as a warning to planners of other projects that may be built in crucial wildlife zones, one of the country's key conservation groups says.

'The 86 huge turbines on Wolfe Island, just outside Kingston, Ont., began to produce power about a year ago, and an on-going count of bird and bats that have been killed by the blades has been conducted since then.

'A consultant's report covering the period between July and December of 2009 was released recently, indicating that 602 birds and 1,270 bats were killed by the turbines over that stretch. While the report says the numbers of dead birds and bats are similar to other wind farms in North America, Ottawa-based environmental advocacy group Nature Canada says the figures are actually surprisingly large and represent a significant threat to several endangered species.
'[...]'

'Scarecrow' wind farms put rare birds to flight.

Sunday Times, 3 January, 2010

'Britain's upland birds are in danger of being driven off hills and mountains by onshore wind farms.

'Scientists have found that birds, including buzzards, golden plovers, curlews and red grouse, are abandoning countryside around wind farms because the turbines act as giant scarecrows, frightening them away.

'The impact is small now because there are few wind farms but researchers warn that, with hundreds more planned, plus an increase in the size of turbines, the effect could become much worse.

'"*We found evidence for localised reductions in bird breeding density around upland wind farms. Importantly, for the first time, we have quantified such effects across a wide range of species,*" said James Pearce-Higgins, an ecologist with the Royal Society for the Protection of Birds in Scotland.
'His research was conducted with scientists from Scottish Natural Heritage and the Scottish government's environment research directorate. It is one of the first scientific analyses of how the wind-farm construction programme might affect wildlife.

'The UK has 259 onshore wind farms, of which 108 are in England, 91 in Scotland, 33 in Wales and 27 in Northern Ireland. Planning permission has been granted for a further 222 and there are plans for another 270 after that.
'In the study Pearce-Higgins surveyed the populations of 12 bird species around a dozen upland wind farms in Scotland and northern England.

'These were compared with a similar number of control sites that had no turbines, but which had similar topography and vegetation.

'Upland areas were chosen because they have the strongest winds and so are preferred by windfarm developers. They are also favoured, however, by some of Britain's most vulnerable bird species.

'Writing in the Journal of Applied Ecology, Pearce-Higgins and his colleagues said birds tended to stop nesting within half a mile of any turbine. Since the effect extends around each machine, up to two square miles could be affected by one turbine.

'Pearce-Higgins said: "Our results highlight significant avoidance of otherwise apparently suitable habitat close to turbines in at least seven of the 12 species studied, with equivocal evidence for avoidance in a further two species."
'[...]'

So either turbines kill birds that are not afraid of them, or drive away birds that are afraid, so they have less breeding habitat. "The birds will go somewhere else," is a cliché used by people with limited knowledge of birds. Some species can adapt to new habitats but many more cannot.

In this case, there may not be enough suitable habitat for the species involved to "go somewhere else". If they try, they discover the only suitable habitat is already occupied by other breeding pairs of their species, so they are driven out, which leads to their eventual deaths. It stands to reason that the more pressure we put on their habitat, the less there is left to them. This leads towards great rarity and possible extinction. RJC.

'RSPB causing harm to birds across Europe'

(Press release from Mark Duchamp, Director, Iberica 2000 and President, Save the Eagles International, 19 October 2009).

'The Red Kite International Symposium took place Saturday 17th and Sunday 18th in Montbéliard, France.'

'Contrary to delegates from Germany, Italy, France, and Spain, RSPB members downplayed the risk that wind farms represent for the survival of the Red Kite in Europe.'
'[...]'

***"Birds learn to avoid wind farms."* (RSPB spokesman).**
'Poorly positioned' wind farms reduce rare birds' breeding
The Scotsman, 26 September 2009.
'Some of Scotland's most vulnerable bird species are in decline because of "poorly positioned"wind turbines."

'The RSPB Scotland study looked at 12 operating upland wind farms in the UK and found that numbers of several birds of high conservation concern are reduced close to the turbines. 'Affected birds include the hen harrier and golden plover, which are protected under European law, and the curlew, which is a high-priority species under the UK Biodiversity Action Plan.
'The study found that the population density of breeding birds is reduced by between 15 and 53 per cent when nests are within 500 metres of a turbine.
'[...]'
NB. These birds need isolation for breeding, but some species soar on updraughts, or are drawn to scavenge on the bodies of small insectivorous birds attracted to the insects drawn to turbines. Many birds of prey eat carrion. RJC

'Bird deaths soar at wind farms

Associated Press, 21 September 2009.

'For years, a huge wind farm in California's San Joaquin Valley was slaughtering thousands of birds, including golden eagles, red-tailed hawks and burrowing owls.

'The raptors would get sliced up by the blades on the roughly 5,400 turbines in Altamont Pass, or electrocuted by the wind farm's power lines. Scientists, wildlife agencies and turbine experts came together in an attempt to solve the problem. The result?

'Protective measures put in place in an effort to reduce deaths by 50% failed. Deaths in fact soared for three of four bird species studied, said the Altamont Pass Wind Resource Area Bird Fatality Study.

'The slaughter at Altamont Pass is being raised by avian scientists who say the drive among environmentalists to rapidly boost U.S. wind farm power 20 times could lead to massive bird losses and even extinctions.

New wind projects "have the potential of killing a lot of migratory birds," said Michael Fry, director of conservation advocacy at the American Bird Conservancy in Washington.
'[...]'

'Circling turbines spell doom for vultures '
New Scientist, 6 September 2009
'COULD wind farms hasten the local extinction of an endangered vulture in southern Spain?

'Studies have so far focused on the short-term effects of wind turbines, looking at the number of bird collisions per turbine per year. Martina Carrete of the Doñana Biological Station in Seville and colleagues took a new approach. They recorded the number of Egyptian vulture carcasses with collision injuries found around 675 wind turbines in southern Spain between 2004 to 2008. They then plugged this information and data on wind turbine locations and vulture nesting sites across Spain into a computer model to predict what will happen to the entire population of Spanish birds over the next 100 years. The results suggest that if the number of wind turbines stays the same as it is today, the population will go extinct 10 years sooner than if there were no wind farms.'
[....]

'Gull killer turbines are removed'
BBC News, 24 July 2009.
'An aquarium in Devon has taken down two wind turbines after seagulls were killed when they collided with the blades.

'The 15m (50ft) high 6kW turbines at the National Marine Aquarium in Plymouth were installed in 2006 for a £3.6m sustainable energies project. 'But the Hoe-based attraction has taken them down after several birds died, it said. 'The aquarium also said they had not produced as much electricity as hoped.
'[...]'

The RSPB and Onshore wind Development

Read Dr Mike Hall's response1 to the RSPB's call for more onshore wind development:

....I have been too busy writing evidence for a Public Inquiry for the past 5 weeks at Armistead (Cumbria) to write to you with my own objection until now. For Armistead, the RSPB adopted its usual fig-leaf cop-out position in

supporting 'a habitat management plan' proposed by the developer and so did not object. Your lack of objection is despite the existence on and around the site of Hen Harrier (14 sightings in the last 6 years including a pair this year), Merlin, Peregrine, Curlew, Lapwing (including a field adjacent to the site in the Countryside Stewardship scheme for lapwing breeding), Yellowhammer, Skylark, Twite, Reed Bunting, and many other more common birds. Quite appalling....

....One would not mind if you had any basis for your 'carefully considered position' but you have none. Wind farms destroy peoples lives, split communities, devastate habitats, kill bats and some birds, decimate the landscape, destroy peat, and are only built because of the subsidies they can reap. I attach an article from the Building Magazine (April 11th 2008) about the peat on Whitelee wind farm site. Just read it and see if you don't get angry. They see peat as an engineering challenge to be destroyed and tamed. I also attach a Proof I have prepared for the Armistead Public Inquiry, and a summary of the history of CO_2 savings by wind farms - which the BWEA has just HALVED to 0.43t/MWh after repeated defeats by the ASA. The BWEA action alone will have halved the savings or (put another way) doubled the number of turbines needed for any given saving. I won't go on in detail except to point out that even these supposed savings are greatly overstated.

I believe in reducing CO_2 emissions, but unlike the RSPB, realise that this is the wrong technology to even begin to address the issue. Hence the RSPB have mistakenly decided to back a technology which cannot contribute anything significant to the issue of climate change, the issue you use as your only excuse for backing this deceitful, dishonest and divisive industry. Your action is indefensible as well as being contrary to your charitable status.

NB. Repeated defeats by the Advertising Standards Authority! I found evidence of two and guessed they weren't the only ones! RJC.

1 Full text of Mike Hall's response to the RSPB.
2 RSPB. 'UK can have wind power and wildlife', 23 March 2009.
(See RSPB DUCKS OUT below for the full story).

'BIRDS V. ENVIRONMENTALISTS?

The wind industry may be green, but it's proving deadly to wildlife.
Christina Gillham, Newsweek, 13 August, 2009.

'In Wyoming, it's the sage grouse. In Colorado, it's the lesser prairie chicken. In the Northwest, it's the Washington ground squirrel. Across the country, a growing number of species are finding themselves at the epicenter of a new

battle being waged by environmentalists and developers. The issue—species being threatened by encroaching human development—is nothing new, of course. What is new? The encroachers aren't the usual suspects—say, a sprawling McMansion community developer—but the environmentally friendly wind-energy industry.

'Wind energy has been touted as cost-effective to produce clean energy as well as jobs. That promise, along with new government subsidies, has helped wind turbines pop up on hills and fields throughout America. But not every environmentalist is happy about that development. Critics charge that wind-energy development can cause habitat fragmentation—a displacement of a species that can eventually reduce its numbers—as well as the deaths of birds and bats (a species that is especially vulnerable due to its low reproductive rates) that collide with the wind turbines' massive rotor blades. A 2007 study by the National Academy of Sciences puts the number of birds killed each year at about 20,000 to 30,000.

That's a low estimate, says Michael Fry of the American Bird Conservancy. According to his group, turbines kill three to 11 birds per megawatt of wind energy they produce. Right now, there are about 20,000 megawatts produced in the United States, which can mean—at worst—up to 220,000 bird fatalities a year. With wind energy expected to produce 20 percent of this country's energy by 2030, output would grow tenfold and, environmentalists worry, deaths could increase at a similar rate. Whatever the number, the wind industry is hoping to avoid damaging its green reputation and is struggling with finding the right solution.
[...]'

'THE DEADLY TOLL OF WIND POWER

'The Altamont Pass Wind Resource Area is also a symbol of the wind industry's biggest stain – the killings of thousands of birds, including majestic golden eagles, by turbines. The result has been a wrenching civil war among those who are otherwise united in the struggle to save the planet and its creatures. It's been nearly a year since a controversial legal settlement was forged among wildlife groups, wind companies and Alameda County regulators.

That agreement, opposed by some parties to the dispute, promised to reduce deaths of golden eagles and three other raptor species by 50 per cent in three years and called for the shutdown or relocation of the 300 or so most lethal of the approximately 5,000 windmills at Altamont. But five scientists appointed by the county say the settlement and accompanying efforts to reduce bird deaths are not on track to meet the 50 per cent goal ..."*We are deeply*

distressed about the continuing bird deaths and about the companies not being on track for the 50 percent reduction, " said Elizabeth Murdock, executive director of the Golden Gate Audubon Society, a chief plaintiff in the lawsuit that has reshaped the battle over the birds.
[...]'

'WIND FARM IS "THREAT TO EAGLES"'

"When people talk about displacing birds from one area to another, they are simply moving them on to another wind farm"
Martin Scott, RSPB
[...]

'BIRD EXPERTS SAY TURBINES EVIDENCE WAS LACKING'

'Leading ornithologists claimed yesterday that Highland planners had based their approval for a number of windfarms on inadequate environmental data. 'The warning came from RSPB Scotland which is gravely concerned that, in many cases, insufficient time is allowed to gauge flight paths and breeding patterns of birds as part of essential environmental impact assessments (EIAs).
[...]'

Norwegian Ornithological Society (NOF), 9 May 2006 (our translation):
'SMØLA WIND PARK IS A CATASTROPHE FOR WHITE TAILED EAGLES'

'Eight months after the Smøla wind park started working (.....)

'NOF sacrificed large resources over several years' of casework in order to stop the construction of a wind power station on Smøla. (.....)

While the authorities and developers used research from wind parks in Denmark and the Netherlands as the basis for their evaluation, NOF went to the large parks in the USA and Spain to check the results from their investigations. We did this in order to find areas with fauna similar to our own, that is with large raptors that actively use wind park areas. Here we found clear evidence that large raptors are hard hit by such developments. When, in addition, we then showed through Project White Tailed Eagle that Smøla has one of the world's densest breeding populations of white tailed eagles, then the tragic consequences that we see today were inevitable!
'[...]

NAVARRE'S BIRD KILLERS

It is now well documented that turbines do kill birds (and bats), though the industry continues to assert that this is a myth. Ignoring the well known mass kills of raptors at Altamont, there are recorded kills at numerous other sites around the world (a brief survey of some of the international information that is available can be seen on the Iberica 2000 website).
[.....]

RSPB DUCKS OUT - THE 'MOORSYDE' EXPERIENCE

***"The RSPB insists that wind farm proposals are subject to rigorous environmental assessment before development is permitted."* (RSPB – Windfarms). "A snapshot, not a survey"**

The bird surveys in the Moorsyde Environmental Statement [ES] used a flawed methodology which was described by the local representative of the RSPB who was directly concerned in scoping consultations and site visits as *"a snapshot, not a survey"*. She described the EIA surveys to the writer as *"flawed"*. Despite this, the regional office of the RSPB refused to address these issues.

Both Northumberland County Council and Berwick Borough Council specifically stated as part of the scoping exercise that the Wintering Bird survey should comprise a number of site visits between early September and late March. In fact the four visits that made up the survey took place on 13-14 November, 19-20 December, 16-17 January and 6-7 February. The applicants stated that conditions on two of these days (ie. a quarter of the survey) were "sub-optimal" with rain and wind (ES Appendix I, 2.1.2).

The surveys did not conform to normal good practice because they lack any detail on walkover routes, times and weather conditions. The person that carried out the surveys was based in Manchester, so there is some question as to whether he carried out early and late walkovers. The marked under-recording of geese, which normally fly through the site shortly after dawn and at dusk, raised questions about times as did the lack of owl recordings in the summer survey.

Again, only four visits took place to conduct the Breeding Bird survey and at least 12 species known to be breeding on the site were missed. That is a 20% under-recording.

Under-recording of species.
Most striking was the gross under-recording of geese and swans, the two species that the RSPB expressed concerns about at the scoping stage. Neither the RSPB nor the consultants (Jacobs Babtie) attempted to consult with local

bird experts. Had this happened, extensive evidence based on records kept over a number of years and personal evidence from a considerable number of people living close to the site would have shown that large flocks of greylag geese fly through the area on almost a daily basis during the winter months and that they also roost and graze in the area.

Such enquiry would also have revealed that mute swans flight through the area very frequently and at low level.

The Environmental Statement recorded only two flocks of greylag geese, both at great height and the largest being 89 birds! Contemporary local records showed flocks of many hundreds of birds flying across the site at varying heights depending on weather conditions at the time. Very large numbers (in the hundreds) of Greylag Geese were also roosting and grazing on the site (in a field next to the anemometer mast) during the period of the survey! They were also frequently to be heard crossing the area at night at low level, when they would be particularly at risk from collision with turbine blades. The Environmental statement admits that geese and swans are particularly vulnerable to turbine strikes.

"Information contained in future applications needs to be much more detailed"

The RSPB representative stated, in a response to the ES, that its statement that, "*RSPB indicated ... they were content with the site being developed as a wind farm*" was inaccurate. She further stated that "*11 of the species that are present on the site ... are on the Birds of Conservation Concern red list. They have been placed on the red list because they are considered to be of high conservation concern ... Therefore, the comments within chapter 9 ... that state that 'The species of concervation* [sic] *concern recorded on the site are all fairly common and widespread species ...' is misleading ...*".

In a paragraph on wintering birds, she observed that "*the bare minimum*" had been done to assess the site for the presence of geese and that "*information contained in future applications needs to be much more detailed*" [!]. She further observed that "*This* [local] *information indicates that geese use the area surrounding the site of the proposed wind far more heavily than the information contained in the ES indicates.*"

The RSPB have stated: "*With regards to the Moorsyde Windfarm proposal, we believe that the available information does not indicate that there would be a significant impact on birds in the area. Although your own records indicate that geese do utilise the area, the data was gathered from an area a few kilometres from the proposed windfarm site.*" [letter from Richard Oxley, RSPB].

Having written off the detailed records of geese movements by a respected local observer living 5 km. from the site (and with a clear view over it) and the reports of people living on the edge of the site, the RSPB then go on in a letter to the Acting Chair of MAG to say that, "*we did not just rely on information provided in the ES* [Environmental Statement]. *We also discussed the proposal and how important the site and the local area are for geese with Phil Davies* [sic] *(English Nature site manager at Lindisfarne) and the North Northumberland Bird Club.*" [Letter from Anna Moody, RSPB, 27 May, 2005]. It should be noted that the Lindisfarne reserve where Phil Davey operates is ca. 15 km from the site and that the North Northumberland Bird Club had no knowledge of the site when consulted at the scoping stage.

Misrepresentation.

The above should be compared with a response from English Nature, in which Phil Davey is again referenced:

'He refutes the assertion within 9.3.33 [Moorsyde Environmental Statement] (and requoted within other parts of the ES) that "*the route is not on a known flyway*". He advised at the time about the use of sites he knows, he did not discount bird use of the proposed development site and identified those who may know that area in more detail.'
(Consultation response from English Nature to Development Services Manager, Berwick, 16 February 2005).

Having mentioned some of the many and crucial inadequacies of the ES bird surveys, the RSPB requires merely that it be done properly "*in future applications*". And, "*As is our practice*" [!], "*however, we have requested that the local planning authority include conditions on the planning permission requiring the developer to monitor local bird populations in the area and take appropriate action should this reveal any problems.*" (letter to MAG, ibid). This is risible.

We would ask:
• What is the point of requiring bird surveys if it is not also required that they be properly conducted according to the criteria agreed at the scoping stage?
• Should the RSPB be making decisions on the basis of unrecorded chats with third parties rather than proper evidence-based procedures; e.g. properly conducted bird surveys?
• Is the RSPB compromised by its financial interest in the construction of turbine arrays? (In 2003-4, when the 'Moorsyde' bird surveys were carried out, the RSPB earned "*around £190,000*" from its relationship with Scottish and Southern Energy PLC, through 'RSPB Energy', a so-called 'green energy' scheme.

The Advertising Standards Authority found against the RSPB for some of its 'green energy' claims in this period.)

Postscript:
The RSPB responded to another approach from MAG in relation to the belated 'consultation' on the revised proposal in 2007. Entirely against the 'Moorsyde' evidence, they claimed: "*While we strongly support the sustainable development of wind power, we work hard to scrutinise individual wind farm proposals to assess their potential impact on birds.*" (Letter from the Assistant Conservation Officer, Planning. 20 February, 2007).

http://windfarmaction.wordpress.com/birds/

Birds

Despite what the Industry says there have been numerous reports of deaths of Birds of Prey and many other species from wind turbines. From The Altramont Pass in the USA to Navarre in Spain to Smola in Norway, attrition on the bird species has been well documented. The RSPB, Government and Developers simply accept a certain level of destruction and compare it to birds killed by cars and by household cats. Never yet seen my cat come through the catflap with a red kite or a golden eagle! These species are protected by a European Directive that if anyone else flouted the full force of law would descend. A group in Spain, run by Marc Duchamp has been covering this for many years. One link here will surprise you Iberica2000.org .

The only recorded death in the Highlands was at Fairburn and was possibly only notified because the Kite was radio tagged. Radio tagging of Golden Eagles has proved that they frequent the proposed Dumnaglass Wind Farm site on a regular basis, as well as the proposed site at Glenfiddich, despite in both cases the paid consultants stating that no Eagles were ever seen there. Ergo:they lie! This is fairly typical of a consultants report to any Environmental Statement. The radio tracks of this Eagle Cullen and the other Eagles that have been tagged as part of this scheme do suggest that these birds cover far greater areas than those such as the Glen Affric/Strathconon SNH Protected Area. It might well suggest that for raptors the whole of the Highland from Perth to Sutherland be declared an Avian National Park.

It is a fact of life that the same conditions that attract wind farms, A rising hillside into the prevailing wind also attract raptors who use these conditions to soar in the same way a glider pilot would. It has also been suggested that the attrition of small birds and bats attract the same mammals that the raptors see as a source of food. In other words the wind farm is laying out a dinner table for these birds of prey, whilst their inherent defence mechanisms do not warn them of the danger of turbine blades travelling at 120-15omph. (see Graham Martin's Raptor Collision Report in Turbine Truths)

Going back to the beginning, cars and trucks may kill many birds but how many cars and trucks do we find on our roads doing 120-150mph. Now that would attract the interest of the Police never mind RSPB!

For further information click on Saves the Eagles International

http://www.dailymail.co.uk/news/article-2305197/RSPB-makes-killing-windfarm-giants-turbines-accused-destroying-rare-birds.html

RSPB makes a killing... from windfarm giants behind turbines accused of destroying rare birds

- **The charity is making hundreds of thousands of pounds from wind power**
- **But millions of birds, including at risk species, are killed by turbines each year,**

- *By James Dellingpole, Published: 01:20, 7 April 2013* |
-

The RSPB is making hundreds of thousands of pounds from the wind power industry

- despite the turbines killing millions of birds every year. Golden Eagles, Hen Harriers, Corn Buntings and other rare and threatened species are especially at risk, conservationists say.
-

Yet in its latest 'partnership deal', the bird charity receives £60 for every member who signs up to a dual-fuel account with windfarm developer Ecotricity. It also receives £40 each time a customer opens an account with Triodos Bank, which finances renewable industry projects including wind turbines.
+3
The RSPB is making hundreds of thousands of pounds from the wind power industry despite the turbines killing millions of birds each year In a previous partnership with

Southern & Scottish Electricity (SSE), which invests in wind and other renewable energy, the RSPB admits to having made £1 million over ten years.

The charity claims that windfarms play an important role in the battle against climate change, which 'poses the single greatest long-term threat to birds and other wildlife', and that wind turbines caused only 'significant detrimental effects' when poorly sited. But critics argue there is no such thing as a well-sited windfarm and that the charity has been taken over by green zealots.

Conservationist Mark Duchamp, whose international charity Save The Eagles monitors bird deaths caused by wind farms, said: 'The fact that such an organisation [the RSPB] is not taking this problem seriously is scandalous. 'They are supposed to protect birds. Instead they are advocating on behalf of an industry which kills birds. What could be more wrong and absurd than that?'

GREENS WHO INVADED THE TOP OF THE RSPB

The RSPB is run by its council of 18 members. More than a third have close ties to the green industry or are pro-wind campaigners. They include:

- • Chairman, Steve Ormerod – Professor of Ecology at Cardiff, specialising in the effects of climate change on freshwater eco-systems; ex-president, Institute of Ecology and Environmental Management.
-
- • Chief Executive, Dr Mike Clarke – who has 'campaigned for the integration of the environment and the economy', according to the RSPB website.
-
- • President, Kate Humble – the TV presenter said in 2012: 'People don't like windfarms. But the fact is that we need to have alternative sources of energy and windfarms are one of them.'
-
- • Dr Havard Prosser – ex-chief environmental science adviser to Welsh Assembly and a renewable energy and sustainability advocate.
-
- • James Alexander – businessman and chairman of The Green Thing, 'a not-for-profit public service that inspires people to lead a greener life'.
-
- • David Baldock – executive director of green think-tank the Institute for European Environmental Policy.

Dr John Etherington, former reader in ecology at the University of Wales and author of The Wind Farm Scam, said: 'It seems to me that for some time now a green faction has penetrated a whole range of bodies and that the RSPB is one of them.

'For an organisation that supposedly protects birds to team up with an industry that kills birds on the basis of unverifiable predictive models about climate change is just bizarre. We are many years into discovering that these bloody machines kill birds in large numbers. Why is the RSPB still sticking up for them?'

Some members have complained that the RSPB isn't nearly as active as it ought to be in fighting turbine applications – even in sites of ornithological value.

'Instead of giving the turbine people hell, they usually end up giving them the green light,' said Peter Shrubb, an RSPB member of 30 years, who is particularly appalled by the organisation's plans to erect a 330ft turbine at its own headquarters in Sandy, Bedfordshire. As an example of the danger, two hen harriers were killed by turbine blades in April last year at the Griffin windfarm at Aberfeldy in Scotland, run by the RSPB's former partner SSE.

The charity waited eight months to announce the news but made no criticism of its former partner. Instead it said: 'It is important to remember that climate change still poses one of the biggest threats to birds and other wildlife.' It added that 'windfarm collisions . . . remain very rare indeed'.

BUT according to research by the ornithological society SEO/Birdlife, each wind turbine kills between 110 and 330 birds a year. This means that worldwide, wind turbines kill at least 22 million birds a year.

The RSPB has disputed these figures, insisting: 'Our own research suggests that a well-located wind farm is unlikely to be causing birds any harm.'

A spokesman for Ecotricity said that at one of its test sites near the Bristol Channel, the turbines had killed no more than four birds in five years.

Conservationists claim the wind industry has a vested interest in covering up the true extent of bird deaths. Wildlife biologist Jim Wiegand recently wrote that the industry has known since the early Eighties that 'propeller-style turbines' could never be safe for birds of prey.

Mr Wiegand added: 'With exposed blade tips spinning in open space at up to 200mph, it was impossible. Wind developers also knew they would have a public relations nightmare if people ever learned how many eagles are actually being cut in half. To hide this awful truth, strict windfarm operating guidelines were established – including high security, gag orders in leases and other agreements, and the prevention of accurate, meaningful mortality studies.'

Anecdotal evidence from the US and Australia also suggests that windfarm operators often hide the bodies of dead birds in order to avoid being fined.

Another trick, described by Wiegand, is for windfarm developers to confine their searches to limited areas directly below the wind turbines – leading to official body counts that grossly underestimate the true extent of bird mortality.

'Wind turbines are always going to kill a disproportionately high number of birds of prey because they tend to be built in areas – uplands, mainly – where the best thermals are: in other words where the birds hover, perch and feed,' said ecologist Clive Hambler, lecturer in biological and human sciences at Hertford College, Oxford.

The RSPB has objected to only six per cent of all new windfarm developments. But the charity's conservation director Martin Harper claims it will always fight windfarm developments where birds are particularly threatened.

Henry Thoresby, an ornithologist who has fought several turbine applications, said that in his experience the RSPB is far too quick to withdraw its objections.

'There was one proposal on the Dengie Peninsula in Essex which they really should have fought hard – a very important wilderness area with large flocks of golden plover. But when it went to judicial review, they refused to help and the local bird group were left to fight on their own.

'It's a strange organisation. My suspicion is that they're less interested in birds than global warming.'

Another disappointed member is Terry O'Connor, a retired panel-beater, who for 30 years has watched migratory birds such as Brent geese and Bewick's swans near his home in Silloth, Cumbria.

When Npower applied to build four wind turbines in the middle of the route, birdwatchers begged the local RSPB area representative for help. At first the RSPB was supportive and planners rejected the application. But when the developer appealed, the RSPB mysteriously withdrew its objection and the turbines were built.

Mr O'Connor said: 'The developers came up with some cock-and-bull plan about how they were going to pay farmers to feed the geese to lure them away from the turbines. 'But to anyone who knows anything about bird behaviour this is a nonsense. 'Now the turbines are up and of course the birds haven't changed their flightpath. Locally we all feel utterly betrayed by the RSPB. They should never have let this happen.'

A spokesman for the RSPB denied that this was a result of a cosy relationship with the wind industry. He said: 'We will always fight cases where windfarms are poorly sited.'

RSPB conservation director Martin Harper said: 'We are not just there to protect. We are a conservation body and our belief is that climate change is the biggest threat facing wildlife today.' He added that a 2004 study, published in Nature, said that 15 to 37 per cent of species were 'committed to extinction' by 2050 unless immediate action was taken to tackle climate change. A further report produced for the RSPB in 2007 predicted that climate change would cause major disruption to birdlife.

However, Dr Etherington said: 'These are projections based on old computer models which do not accord with observed reality. I find it extraordinary, given the latest data confirming there has been no global warming since 1997, that the RSPB is still taking it seriously.'

The RSPB's spokesman said: 'If we've been hijacked by people for campaigning for the environment then it's no different from what we've done for the past 124 years. Campaigning is what we do.'

Open letter to the RSPB

As actual today as it was in 2009, perhaps even more!

Co-signed: Professor David Bellamy – Mark Duchamp

Published 14 June 2009 Malta Today —>
http://www.maltatoday.com.mt/2009/06/14/l6.html

The Royal Society for the Protection of Birds (RSPB) is advocating in favour of more wind farms across the UK. Yet in the United States the State of Birds report, released by U.S. Interior Secretary Ken Salazar last month, warns of the impact these installations are having on bird populations, which are already in sharp decline.

John Fitzpatrick, the director of the Cornell University Lab of Ornithology, helped draft the report along with nonprofit advocacy groups. Yahoo News reports : "Environmentalists and scientists say the report should signal the Obama administration to act cautiously as it seeks to expand renewable energy production and the electricity grid on public lands and tries to harness wind energy along the nation's coastlines."

This significant impact on biodiversity is corroborated by the Spanish Ornithological Society (SEO-Birdlife). In a new report commissioned by the Spanish government, they warn that the effect of wind farms on bird mortality has been grossly under-estimated. Entire species are at risk, and among other things they recommend that wind turbines not be erected closer than 15 kilometers from eagles' nests. Too many of these great birds have been killed by their blades already.

Yet, in Scotland, there is no setback regarding eagles' nests: on the isle of Lewis, the John Muir Trust has approved the erection of 3 wind turbines as close as one kilometer away from an active golden eagle nest. The RSPB is not objecting to this practice, which threatens the survival of the UK's eagles.

Several Scottish eagles have disappeared near wind farms already, a fact that your organisation has not publicised.

One may wonder why you would encourage the erection of more wind farms across the UK when there is so much evidence that many bird species, from eagles to song birds, are being killed by these machines in substantial numbers.

It is disturbing enough, but there is more: the RSPB has a financial interest in the development of wind farms. You contracted a business relationship with Scottish and Southern Energy, which sells a product called "RSPB energy" – a vector for renewable energy. The conflict of interest is evident.

You also have close ties with governments, working with them to reduce opposition to wind farm development. This was again evidenced by a recent announcement:

"Charities, voluntary organisations and NGOs are to team up with Government to look at ways to tackle climate change and other environmental issues in this sector."

Politicians are enlisting the support of charities in their attempt to convince increasingly sceptical Britons that their landscapes and quality of life have to go – a highly controversial decision based on computer predictions about climate that hundreds of prominent scientists from around the world denounce as bordering on fraud.

The charities' involvement appears to involve spin as well. Recently the BBC quoted the RSPB in its praise of Spain (which has 16,000 wind turbines killing half a million birds a year): they said the country is producing 20% of its electricity from wind. Yet the figure is actually 11%.

Most people who form the one-million-plus membership of the RSPB think that wind farms do not harm birds significantly. But this is a perception they received from management. Reality proves otherwise in countries where bird mortality at wind farms is being investigated.

In the UK, very few wind farms are monitored for dead birds, and when they are the results are not published. The wind turbines at Blyth harbour are an exception: they were monitored for one year and low mortality was found. But the turbines being located on a wharf, most birds that are hit fall at sea and many are never found.

We as dedicated conservationists, and this opinion is shared by many RSPB members and other bird lovers across the country, are increasingly worried by the wind farm policy of your bird society. It is bad enough to sacrifice the British landscape to produce small amounts of unreliable yet very expensive energy. But what are we to think of the RSPB making every effort to promote such destruction? And why do you keep to yourselves most of the evidence of high bird mortality at wind farms around the world?

The broad picture

A report on wind energy claims that wind farm generating capacity in the world could reach 7,500GW by 2025.

Supposing an average of 2 MW per turbine, that's 3,750,000 wind turbines.
25 birds killed per turbine/year* —> 25 x 3,750,000 = 93,750,000 dead birds/year (conservative estimate).

* As shown by studies not unduly influenced by their funding and performed by biologists Lekuona in Spain, Everaert in Belgium, and Winkelman in the Netherlands.

To this must be added the death toll of new high-tension power lines: 1) from each wind farm to the national grid, and 2) extensions of the grid itself.

Let's say, conservatively, that this represents 10 km of new HT power lines per wind

farm, and that a wind farm has an average of 50 turbines:
3,750,000 divided by ~50 turbines per wind farm = 75,000 wind farms x 10 km = 750,000 km of new HT power lines.
750,000 km x 200 birds per km/year* = 150 million dead birds/year
Total: 150,000,000 + 93,750,000 = ~250 million dead birds/year

* Average mortality according to a study in the Netherlands by Koops (1987) quoted by the American Wind Energy Association. However, in important areas of bird migration, mortality can exceed 500 birds per kilometer per year, says Birdlife International.

Bats are another matter: where bats are present, more are killed by wind turbines than birds. These flying mammals are attracted to the blades. A video has documented this fact.

The upshot of all this is: 1) many bat species are already on the endangered list, 2) migrating bird numbers are shrinking rapidly, and 3) another study from Birdlife found that most other bird species are also on the decline. And now wind farms and their power lines will be adding another 250 million killings per year. In the circumstances, is it reasonable for the RSPB to push for more wind farms?

To put things into perspective: Germany has over 20,000 wind turbines, Spain 16,000, yet CO2 emissions have continued to increase in both countries. The need for back-up by conventional power stations practically makes redundant this form of intermittent, unreliable electricity.

Co-signed:
Professor David Bellamy
Mark Duchamp

RSPB executives are causing severe harm to bird life.

DE FACTO HELPING WINDFARM DEVELOPERS GET AWAY WITH THE SLAUGHTER OF RARE BIRDS

The bird society´s publicised policy is to support windpower, and make sure windfarms are "carefully sited". Reality shows, however, that they only implement its first tenet.

For years, critics have been trying to warn the public that a conflict of interest had inverted priorities within the charity. Evidence of this perversion has been accumulating over the years, but the prestige of the RSPB is such that most people preferred to ignore it. - Until RSPB management went over the top...

.1) THE PERFECT BIRD TRAP

While appearing to move slowly, turbine blades travel at speeds of 150 to 300 kmh at the tip, depending on wind speed (1). They also travel on an orbit; thus a bird about to fly through them may see one blade moving away but won´t always see the next one coming. Adding adverse conditions such as wind, fog, or darkness, it is easy to understand why the turbines were dubbed **"Cuisinarts of the air"** by the Sierra Club (2).

2) CONFLICTS OF INTEREST

The pro-windfarm policy of the RSPB is vital to that controversial industry. Without it, British public opinion might not tolerate the erection, over its beloved countryside, of contraptions that will be killing **200,000 – 500,000 birds a year, many of them belonging to rare species, (1)** for the production of unreliable quantities of intermittent, erratic, and uncontrollable electricity.

To ease the concern of bird-lovers, RSPB´s top management (hereinafter : RSPB MGT) consistently played down the risk to our feathered friends. When I started my investigation five years ago, their position was that windfarms were only killing significant numbers of birds at two foreign locations : **Altamont Pass (California), and Tarifa (Spain).** These were unfortunate exceptions, they kept saying, of badly-sited windfarms.

Yet a little research into the subject showed that there was an abundance of scientific studies proving the contrary. I published an article in which I cited the studies in question (1). I also criticised RSPB MGT in ornithology forums in the hope they would rectify.

I was soon opposed, on these forums, by ornithologists defending windpower interests. I was even banned from some of these discussion groups, whose policy it was to kill the messenger. This made me realise that many of the most senior ornithologists worked under contract for windfarm developers, or for pro-windfarm quangos :

1) to monitor existing windfarms.

2) to write pre-construction impact assessments (that normally "predict" low bird mortality and get the project approved).

3) to conduct other studies on the subject of birds and windfarms.

And as was to be expected, the most successful at landing such contracts were those who consistently found that windfarms killed very few birds.

The conflict of interest was evident, and I became all the more concerned for the welfare of bird life - of rare species in particular.

In the course of my investigations, I came across the **"RSPB Energy"** webpage, where I learned that the charity was making money from the promotion of renewable energy. Their business partner is **Scottish & Southern Energy** . That was a second, and quite obvious, **conflict of interest.**

Another bird lover, and ex RSPB member, became interested in the RSPB´s investments : did they include shares of Scottish & Southern Energy ? or stock in other companies with windpower interests ? - But RSPB MGT do not publish the detail of their investment portfolio. Neither do they name the beneficiaries of the scores of subventions they hand out yearly. Transparency is not their forte.

3) EDINBANE and BEN AKETIL

The **Isle of Skye** is a natural jewel, and a haven for bird life. If it were not for the young eagles that are fledged here and in other Hebridean islands each year, mainland Scotland would be unable to maintain its eagle population. (3) and (4)

Edinbane and Ben Aketil are two windfarm projects targeting this island. What is worse : the hills selected by the developers are visited daily by young eagles. These may come from anywhere in Scotland, and even England, as **young eagles roam the country for years before settling down.**

The Altamont Pass windfarm, in California, is also located in such a **"dispersion area"** for young eagles : its numerous wind turbines killed **2,300 eagles over 20 years** (5). Ornithologists **Dr. S. Smallwood and C. Thelander**, who performed the most complete studies of that infamous windfarm, concluded that the deaths were not imputable to the lattice-type, old model turbines : **tubular ones killed even more birds**(6). This is logical, as they are bigger and sweep larger areas.

They also warned that any windfarm erected where raptors fly would be deadly to them. There was nothing particular to Altamont, except for the large number of turbines and the abundance of raptors (7). Besides, **it was found that eagles and other raptors were attracted by the wind turbines** (8).

With this scientifically gathered evidence, corroborated by the news of eagle strikes at windfarms elsewhere in the world, it was obvious that these two projects located in an eagle dispersion area on the Isle of Skye would act as **ecological traps for the Scottish eagles** - and become **a direct threat to their sustainability** .

As things now stand, golden eagles in Scotland are in **"demographic difficulty"** (4). Any additional mortality will send their population into decline. And additional mortality repeated year after year for several decades may cause **the extinction of the species in the UK**. There are, after all, only 443 pairs left.

Yet RSPB MGT failed to strongly oppose these two ill-sited project - i.e. as they did

for Lewis : press releases, articles on their web site, complaint to the European Commission, redaction of a petition and collection of signatures, direct lobbying of the politicians involved, etc.

Instead, they were content with sending routine objections to the decision makers - and of course that failed to convince them.

This lack of concern for stridently ill-sited windfarms was also shown in the routine, inefficient handling of other eagle-killer projects such as Pentland Road, Eishken, Pairc, and recently Allt Dearg.

It would have been possible to kill these projects in the bud long before they reached the planning stage. RSPB MGT showed us how this could be done : the **Glen Tarken** project was abandoned by the developer **at or before the scoping stage**, after talks with the RSPB.

Glen Tarken vindicated my claim, aired many times on ornithology forums, that developers and politicians will easily cancel their plans if the RSPB uses its clout right from the beginning, before developers spend millions of pounds preparing an application, commissioning an environmental statement, putting together the financing - and before councillors pre-spend the rent, and the community fund money, in electoral promises.

4) THE CASE OF THE LEWIS WIND PROJECT

RSPB MGT also failed to oppose, at the scoping stage, the huge windfarm project targeting the Lewis peatlands SPA (and Ramsar area). They had **no excuse** for letting such a scandalous project run its course through the planning system.

As with other ill-sited projects, they presented "in due course" a less-than-robust objection that was not opposing the project in principle. This sort of objection is then used later to fend-off criticisms : ***but... we do fight ill-sited windfarms : we have objected to 76 windfarm applications !***

Washing their hands is what RSPB MGT do best.

This disingenuous policy, hurting as it does important bird interests all over Scotland, prompted me to write **"Red Energy"**, a paper criticising their laxist approach . (9) It was published on 27/12/2003, and the UK press was advised.

Coincidence or not, within a week after the publication of my paper, RSPB Scotland launched a well-mediatised lobbying campaign against the Lewis Wind project. This move refurbished their image at a minimal cost : the sacrifice of just one of numerous ill-sited projects. For the rest of the 500 windfarm applications in the Scottish pipeline, it was business as usual.

What is more, **the sacrifice was later compensated by the RSPB supporting another mega-project, ill-sited in a migration hot spot : the Shetlands.** And if the Lewis Wind project is upheld in the end, the developers will have gained the Shetlands in the bargain.

Thus, by opposing Lewis Wind, **RSPB MGT have effectively saved dozens of ill-sited windfarm projects from being scuttled in the face of mounting criticism, while refurbishing their tarnished reputation.**

The anti-Lewis RSPB campaign turned out to be an excellent operation for the wind industry and their Scottish politician friends. And it is a disaster for European/African biodiversity (some birds, like the osprey, migrate all the way to Africa and back).

If you are not convinced, yet, of RSPB MGT´s duplicity, then consider the rest of the evidence, as follows.

5) GROUSE POPULATIONS

As I was investigating the Edinbane project, I came upon a letter that was not supposed to be made public, but which we obtained under the Freedom of Information Act. It was sent on April 25 2002 by Dr. Alison MacLennan, RSPB´s Senior Conservation Officer, Skye & Western Isles, to Simon Fraser, Area Planning Manager, Highland Council, Isle of Skye - Subject: the proposed AMEC windfarm at Edinbane.

On page 4, under "Wader and red grouse interest", we can read : ***"they (red grouse) have been known to collide with turbine structures and have shown population declines associated with windfarm developments elsewhere"*** (10)

This was a smoking gun. A senior RSPB field officer had admitted that windfarms had had a significant impact on red grouse populations. This contradicted the line we were getting from RSPB MGT, i.e. that windfarms were only a problem for birds abroad, specifically at Altamont and Tarifa.
- There are no grouse to be killed at these two locations, so they had to have been killed elsewhere : most probably in the UK .

RSPB MGT had been covering up the mortality of red grouse, as they had covered up the scientific reports I mentioned earlier.

I raised the issue on ornithology forums : it was met by an embarrassed silence. I then made a practice of raising the matter whenever opportune, copying RSPB MGT every time. - They did not reply. Obviously, as long as I did not make the headlines in the press, they wouldn´t budge.

Followed a number of bird-kills that were reported in the press :

First, there was the hacking of a red kite in Wales, then of another, and then of a swan. Later, we found out that the two wind turbines erected by Tesco next to its parking lot **were chopping sea gulls under the noses of the customers.** One of them was even stained with blood when a dead gull fell on his head. (18) - Difficult to cover that one up !

Finally came the story of the red kite hacked in Scotland, while money is being spent to reintroduce the species. On that occasion, the journalist reported : ***"It (the RSPB) confirmed that red grouse, pigeons, kestrels and buzzards had all died after colliding with giant turbine blades in Scotland despite the insistence of many windfarm advocates that birds can easily avoid them."*** (11)

So there it was : RSPB MGT had admitted at last ! Windfarms have been killing various species of birds in the UK, and **prior assurances that birds avoided them were misrepresentations .**

Their declaration was not without spin, however : ***"despite the insistence of many windfarm advocates that birds can easily avoid them ".*** - Weren´t RSPB MGT the ones who had claimed that all along ?

What is more, they still pretend that birds can easily avoid wind turbines : how else could they justify their supporting a project in the **Shetlands**, a migration hot spot, or at **Allt Dearg** , in an eagle dispersion area ? - **Their duplicity is evident.**

Note: they do not openly support Allt Dearg, but are willing to "deal" - more on that later (see "to be continued" below).

Having admitted of the bird-killer nature of wind turbines, it was back to the usual spin, as if nothing had happened : ***"The charity ... stressed that it considered the risk of wildlife colliding with wind turbines "very modest," although it acknowledged that it was impossible to monitor the impact of every scheme. "***(11)

How could the risk be "very modest" when they had recognised before that grouse "have shown population declines associated with windfarm developments" ? **If an eagle-prey species like the red grouse shows "population declines", the risk to bird life is not "very modest".**

And how modest is the risk to eagles when impact assessments carried out by ornithologists paid by developers **predict the death of 15 golden eagles at Edinbane, 3 at Ben Aketil, 9 at Eishken, 50 at Barvas, 66-165 at Pairc, etc. ? ... and when more realistic predictions run as high as 150 for Edinbane, 30 for Ben Aketil, and 100 for Eishken ?**

Given that scores of windfarms are to be built in eagle breeding territories and in dispersion areas for young eagles, **the impact will be more than severe : it is likely to be terminal for the species.** As I said before there are only 443 pairs of golden eagles in the UK, known to be "in demographic difficulty" (4) - and no more than 33 of the white-tailed sea eagle, after 30 years of efforts to reintroduce the species in Scotland.

6) YET ANOTHER CONFLICT OF INTEREST

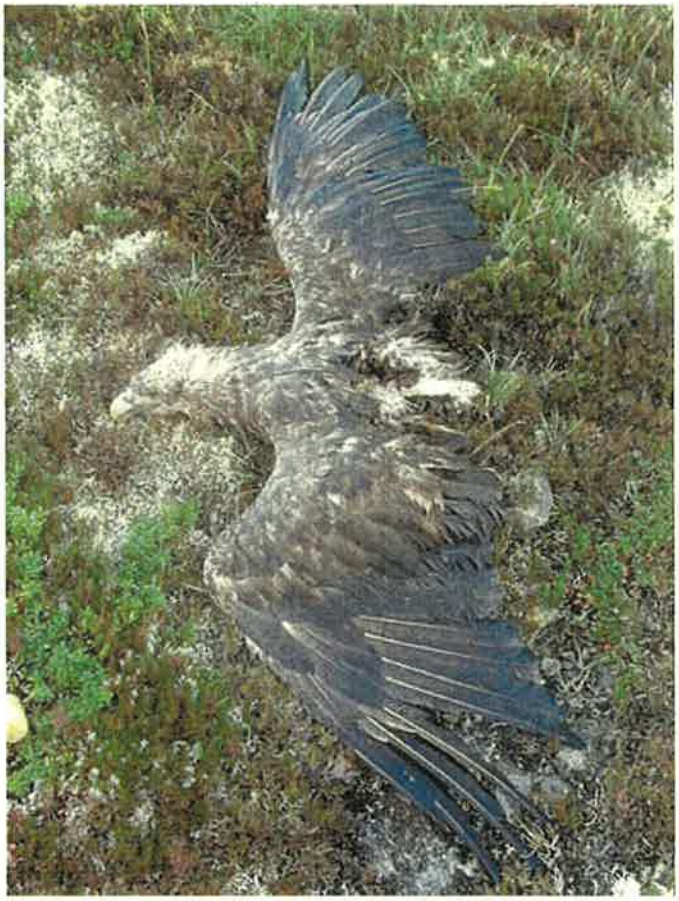
In another article about the third red kite victim we find this information :

"Last month, RSPB Scotland was awarded £48,500 by the Heritage Lottery Fund for a project to help reintroduce red kites to Aberdeenshire." (12)

The RSPB are reintroducing red kites in Scotland, as they did the sea eagles some 30 years ago. And they have now been asked to reintroduce sea eagles on the east coast.

You would think their management would have protested against the windfarms that killed these reintroduced red kites ? - Not in the least ! On the contrary : it is on this occasion that the charity reassured the public stressing that ***"it considered the risk of wildlife colliding with wind turbines "very modest".*** (11)

Yet the 3 red kites that were found are only the tip of the iceberg... In Germany, 69 of these birds were found, hacked by the turbine blades. Yet German windfarms are not being monitored for bird strikes (with very few exceptions). So, obviously many more deaths occur that are never reported, and scavengers take care of the carcasses.



Picture : white-tailed sea eagle, Smola windfram, Norway. Four more eagles were killed in the past 12 months. But RSPB MGT is suppressing the information - Why ?

Without being a cynic, what we have here is **yet another conflict of interest** . For if the eagles and other rare birds become near-extinct because of the windfarms, the RSPB will be asked to save those that are left, and to reintroduce the species where they have disappeared.

They may also be called upon for habitat management and other such projects aimed at restoring bird life.

Another consideration is that bequests and donations would logically increase as bird life becomes more endangered .

Windfarms are thus a win-win situation for the charity.

I do not wish to offend anyone when I say this, but it is a fact. And facts must be faced if we are to maintain a healthy bird life. If biodiversity is to be saved, it is necessary to denounce each and every conflict of interest that is presently working against it.

7) RSPB FORCED TO DISCLOSE EAGLE COLLISIONS AT SMOLA

In 2005, an anti-windfarm campaigner from Lewis received an email from Norway enclosing a local press article : a sea eagle had been found, killed by a turbine at the Smola windfarm. I immediately raised the matter on ornithology forums, and this prompted Norwegian ornithologists to release more eagle mortality data. At first we had eleven eagle deaths, including those from the Smola power lines. Then it came down to four for the turbines alone, and ***"about 30 other white-tailed eagles failed to return to nesting sites within the wind farm area.*** (13).

Five months later, we had a total of **9 sea eagles killed in 10 months by the Smola turbines..** (14)

The scandal was too great to be ignored : RSPB MGT had to disclose the news to the UK media. **But their declarations rapidly evolved, from concern to the usual PR humbug.** To wit :

- **CONCERN**- January 2006 : ***"... Stuart Housden, director of RSPB Scotland, said: "If white-tailed eagles have died because of wind-turbine collisions, there are major implications for our own eagle populations in Scotland."*** (13)

- **USUAL EXCUSE** - June 2006 : ***..."RSPB conservation director Mark Avery told BBC News ... the Smola wind farm had been badly sited in a place where it put white-tailed eagles at risk.*** (14)

- **BURYING THE INCIDENT** - June 2006***..."(the RSPB) is urging developers and governments to take the potential impact on wildlife such as eagles properly into consideration when planning new wind farms in future."*** (14)

We are back to the usual double-talk, despite the fact that Smola´s "very important" sea eagle colony " has been practically wiped out" - in Mark Avery´s very own words (14). **RSPB MGT have not stepped up their opposition to windfarms sited where white-tailed eagles fly in Scotland** : e.g. Eishken, Pairc, Edinbane, Ben Aketil, etc.

8) MAKING A DEAL, AND SUPPRESSING INFORMATION

From another article on the same day, June 23 2006 :***"... the RSPB said it is backing a new four year study at the site by the Norwegian Institute for Nature Research (NINA) at the site to assess the effects of turbines on swans and wading birds such as golden plover, dunlin and whimbrel, and on the ability of white tailed eagles to adapt to the wind farm.*** (15)

In other words : **ornithologists will be personally benefitting from the windfarm. For them, this study is a juicy plum : few in the profession ever land four-year contracts.** This way, the windfarm operator can rest assured they won´t demand the decommissioning of this ecological trap.

The RSPB, we were told, is actively involved in the monitoring of Smola : ***"Research by the RSPB, the Norwegian Institute for Nature Research and the Norwegian Sea***

Eagle Project will now be stepped up to include regular checks for casualties throughout the wind park, and monitoring of breeding activity". (16)

So one could reasonably expect that RSPB MGT would be keeping the UK public informed of what is happening at Smola. Didn´t Stuart Housden, director of RSPB Scotland, say in January 2006 ***"If white-tailed eagles have died because of wind-turbine collisions, there are major implications for our own eagle populations in Scotland" ?***(13)

But the opposite has been happening : it looks like RSPB MGT has been suppressing all information they obtained from Smola in the past 12 months.

In June 2007, I made an inquiry on ornithology forums. I asked : has Smola stopped killing eagles? - A Norwegian ornithologist researched the subject and found that **4 more sea eagles had been killed since June 2006 (17). Yet RSPB MGT hadn´t said a word about it** , that I know of, to the ornithological community - let alone to their members and to the public.

It also looks like, defiantly, **they are still withholding the news from the UK media to this day.**

Logically, they would publicise these deaths **if they were really opposing windfarms where Scottish sea eagles fly** , at the very least in the Hebrides (mainly the islands of Lewis, Skye, and Mull).

If RSPB MGT wanted to help developers erect their windfarms where rare sea eagles fly in Scotland, they wouldn´t act differently.

Picture : golden eagle, Altamont Pass windfarm. Over 20 years, 2,300 of them have been killed by the turbines, as well as 10,000 other raptors and 50,000 smaller birds, as estimated by Dr S. Smallwood & K. Thelander, in their study published in 2006 (5)

UPDATE, Nov 7th 2008 : the number of white-tailed sea eagles killed at the **Smola windfarm** is now 20, but RSPB and Norwegian ornithologists involved in the monitoring keep silent about it. It is likely that their monitoring contrat prevents them to speak, as these normally include a clause to that effect. Cynics would say their silence has been bought for 4 years with this contract, which is likely to be worth in excess of 1 million euros.

That the **RSPB** would tolerate this is indicative of their list of priorities, where bird conservation is no longer on top - unless one believes their argument that :
- 1) global warming - **or is it now global cooling ?** - will kill more birds than the windfarms and their associated HT power lines - yet birds survived higher temperatures and even ice ages in the past, whereas many species may not survive 1 million wind turbines to be built across the world...

- 2) man-made CO2 is the cause of this so-called climate change - yet it has been demonstrated by independent scientists (from the **NIPCC** and others) that solar radiation, cycles in sea currents, and water vapour (cloud formation) are far more important drivers of climate than CO2...

- 3) windfarms are actually helping reduce CO2 emissions - yet evidence from Germany, Denmark and Spain, the most "turbinised" countries (per capita) in the world, show that **CO2 emissions keep rising in spite of the large number of windfarms.** This is explained by the intermittency and variability of wind, and the requirement that windfarms be backed-up 24/7 by spinning fossil fuel power plants, emitting more CO2 in the process. More information on this by **Dr Etherington**, here : www.iberica2000.org/Es/Articulo.asp?Id=2950

And to those who would whitewash the **RSPB** with the contract clause imposing silence on eagle mortality at Smola : there is no contract clause preventing them to tell their members, and the public, that the number of white-tailed sea eagles killed by windfarms in **Germany** rose to 32 as at October 2008 (just those that were reported to the authorities). Ditto with the **critically-endangered Tasmanian wedge-tailed eagle : 20 of them killed to date at the Woolnorth windfarm**, the last two under the eyes of the ornithologists in charge of turning off the turbines when eagles are approaching !

And again the RSPB kept silent about the 12 eagles killed by wind turbines on the **Gotland island in Sweden** (this news came out this summer), and on those killed by windfarms in **Japan**, etc. And of course, as I keep repeating, this is just the tip of the iceberg of eagle mortality at windfarms. Most kills are never reported, and not just because eagle talons, feathers and skulls are worth money on the black market.

Evidence of these kills is available upon request (13 is the figure now for white-tailed sea eagles in **Japan**).

See also : Windfarms to wipe out Scottish eagles

Mark Duchamp.....

save.the.eagles@gmail.com

Other articles by the same author :
The negative effects of windfarms: links to papers published by Mark Duchamp

Photos of birds killed by wind turbines, of soil and water contamination by wind turbines, of turbines on fire, etc.

FOOTNOTES

(1) Chilling Statistics
Look for section entitled: PRELIMINARY CONSIDERATIONS ON AVIAN MORTALITY

(2) Article in USA Today, May 1998 - available upon request. Write to : save.the.eagles@gmail.com

(3) A CONSERVATION FRAMEWORK FOR THE GOLDEN EAGLE IN SCOTLAND - REFINING CONDITION TARGETS AND ASSESSMENT OF CONSTRAINT INFLUENCES, by Philip Whitfield, Alan H.Fielding, David R.A. McLeod, Paul F. Haworth and Jeff Watson. - Biological Conservation, Volume 130, Issue 4 , July 2006, Pages 465-480

In the Abstract, we read:
"Despite apparent overall population stability over the last 20 years, the national golden eagle population failed to meet the abundance target and ***only 3 of 16 regions where eagles have occupied territories since 1982 were considered to be in favourable condition."***

Two of the 3 regions in question are in the Hebridean Islands.

(4) DEMOGRAPHIC DIFFICULTY

(5) DEVELOPING METHODS TO REDUCE BIRD MORTALITY IN THE ALTAMONT PASS WIND RESOURCE AREA - Dr. Smallwood & K. Thelander (2004). - Available online: SMALLWOOD:http://www.energy.ca.gov/pier/final_project_reports/500-04-052.html]
- See : CHAPTER 3, TABLE 3.11, 1ST LINE, : *"116.5 golden eagles p.a. adjusted for search detection and scavenging."*

(6) Thelander, C. G, Smallwood, K.S., Rugge, L. (2003) : *"It appears that factors other than tower type play more of a role in whether a particular turbine is associated with one or more fatalities, such as prey distribution about the tower´s base, physical relief, and presence of declivity winds. Regardless, the number of fatalities at tubular towers was higher than at horizontal lattice towers"* - Chapter 6: Discussion.

(7) *"Adjusting for local relative abundance, the existing data indicate that most wind energy generating facilities have an equal impact on the local raptors."* Chapter 4 – Paragraph 4.4.1 of : DEVELOPING METHODS TO REDUCE BIRD MORTALITY IN THE ALTAMONT PASS WIND RESOURCE AREA - Dr. Smallwood & K. Thelander (2004). - Available online: SMALLWOOD

(8) *"raptors spent significantly more time flying at close proximity to turbine blades ... than*

51-100 m away ... or >100 m away ... Analyzing the total number of minutes of flight time reveals that something about wind turbines may attract red-tailed hawks to fly near turbines and at dangerous heights. Similarly, American kestrels flew in proximity level 1 [ie 1-50m from turbine] nearly four times longer than expected by chance, golden eagles two times longer, and northern harriers three times longer"

BIRD RISK BEHAVIORS AND FATALITIES AT THE ALTAMONT PASS WIND RESOURCE AREA, Thelander, C. G, Smallwood, K.S., Rugge, L. - Period of Performance: March 1998-December 2000, National Renewable Energy Laboratory Report SR-500-33829, 2003. - Available online : [FATAL ATTRACTION:www.nrel.gov/docs/fy04osti/33829.pdf].

(8) RESIDENT GOLDEN EAGLE RANGING BEHAVIOUR BEFORE AND AFTER CONSTRUCTION OF A WINDFARM IN ARGYLL, 2005, D Walker, M McGrady, A McCluskie, M Madders & D R A McLeod.

This study fails to stress the significant negative impacts of the windfarm : see chapter entitled THE EFFECT OF WINDFARMS ON THE SCOTTISH GE POPULATION, section 2 on [BEINN AN TUIRC:www.iberica2000.org/documents/EOLICA/LEWIS/OBJECTION_LEWIS_EAGLES_2007.doc]

(9) Windfarms - Red Energy

(10) [GROUSE:www.iberica2000.org/documents/EOLICA/EDINBANE/Letter_RSPB_25_4_02.pdf]

(11) [PIGEONS ETC.:http://www.thisisnorthscotland.co.uk/displayNode.jsp?nodeId=149664&command=displayContent&sourceNode=149490&contentPK=17790708&folderPk=85696&pNodeId=14]

(12)[£48,500:http://news.bbc.co.uk/1/hi/scotland/tayside_and_central/6287932.stm]

(13) [JANUARY 2006:http://news.bbc.co.uk/2/hi/uk_news/scotland/4655518.stm]

(14) [JUNE 2006:http://news.bbc.co.uk/2/hi/europe/5108666.stm]

(15) [MANCHESTER EVENING NEWS:http://www.manchestereveningnews.co.uk/news/s/216/216492_wind_farms_are_killing_eagles.html]

(16) [RSPB MONITORING:http://thescotsman.scotsman.com/scotland.cfm?id=139872006]

(17) [CHAPMAN RELEASE:http://tech.groups.yahoo.com/group/wind_turbines_birds/message/2526]

(18) [HACKED SEA GULL FALLS ON TESCO CUSTOMER´S FACE:http://www.nwemail.co.uk/news/viewarticle.aspx?id=506914]

http://raptorpolitics.org.uk/2011/03/17/why-birds-crash-into-wind-turbines/

Raptor Politics

Speaking out for raptor conservation everywhere

"Suppress the truth by shooting the messenger".

Why birds crash into wind turbines.

Professor Graham Martin at the University of Birmingham said large birds of prey and sea birds are particularly vulnerable to crashing into man made structures. "There are some studies that definitely show that sizeable numbers of birds will get clobbered by wind turbines in particular locations," he said.

In a new study, published in the journal Ibis, he suggested the reason the birds are susceptible is because they have evolved to look for movement either side and potential prey on the ground rather than straight ahead. "We have got two eyes in the front of our heads and our best vision is forward," he said. "But that is not the case for a lot of animals. Their best vision is laterally or down."

Prof Martin suggested that to avoid bird collisions in future, wind farms or other structures should try and distract birds with decoys on the ground or the sound of danger.

"People have tried to avoid the problem by looking at it from a human point of view," he said. "But our vision is all about looking forward, we need to consider what will work for certain animals and even species.

"Armed with this understanding of bird perception we can better consider solutions to the problem of collisions," he said. "While solutions may have to be considered on a species by species basis, where collision incidents are high it may be more effective to divert or distract birds from their flight path rather than attempt to make the hazard more conspicuous."

Conservationists welcomed the study as an opportunity to reduce bird fatalities while supporting renewable energy.

The Royal Society of Birds (RSPB) is in favour of wind turbines, but has campaigned for the turbines to be sighted carefully so that they are not in the flight path of birds.

Red kites flying close to wind turbines.

(Source – The Guardian)

This photo shows that birds don't avoid wind farms; neither are wind farms "carefully sited" away from areas that they frequent. The large size and forked tails conclusively identify the birds as Red Kites.

They are not, as people might assume, flying past the turbines, having safely missed them. They are heading in different directions; but why should their flight paths cross just by the turbines?

Answer. **Kites normally circle in their search for carrion, and utilise rising air currents produced by hills, on which turbines are usually sited.**

✠✠✠✠✠✠✠✠✠✠

Red Kite, *Milvus milvus*

General information about the bird is irrelevant, so edited out

Habitat

The Red Kite needs open country for hunting. Nests are normally built in large trees close to the forest edge.

Red Kites prefer areas with small hills or mountains so that they can use rising air currents close to the mountain slopes (from air deflected by the slopes) [Carter 2007].

https://www.wind-watch.org/documents/does-fatal-attraction-of-hirundines-to-wind-turbines-threaten-populations-and-species/

Does fatal attraction of hirundines to wind turbines threaten populations and species?

Author: World Council for Nature

July 11, 2013

The fatal impact of a white-throated needletail with a wind turbine in Scotland (1) raises serious concerns, with ramifications far beyond the sad loss of a single, spectacular vagrant. As a rare visitor, this individual bird was being very carefully observed, and thus there was a far higher chance of a turbine impact being detected than is the case for most small birds. Only a minuscule fraction of birds are intensively monitored in this way, and if the movements and fates of many other individual birds were being monitored, then what appears to be a rare event might prove to be frequent – or indeed probable. The death of this needletail should remind us that numerous small birds are being hit by turbines without detection or raising alarm. However, other hirundine deaths have already been documented amongst Europe's wind turbines (2).

The needletail encountered a small, lone turbine. On the face of it, this is highly unlikely – unless the bird was actively attracted to the vicinity of the turbine. Indeed, some insects are attracted to wind turbines, and some bats are attracted to their deaths by unknown features of the turbines – possibly the food concentration around them (3, 4, 5). Remarkably, there are reports of bats commuting to wind turbines up to 14 km offshore for such food resources, as well as others stopping, perching and feeding around them during migration (4). This attraction exerted by wind turbines extends their ecological footprint to new, unsuspected dimensions.

We hypothesise that hirundines (including swifts, swallows, martins, swiftlets and needletails) might also be attracted to insects flying around these machines – onshore and offshore. Indeed, awareness has already been raised about the potential attraction of insectivorous birds to wind turbines (5). Reports (5, 6) that hirundines can comprise a third of turbine victims in Sweden and are being killed by domestic microturbines in Britain merit further investigation. Another consideration is that certain landscape features and air flows might attract both wind farm developers and hirundines, putting them on a collision course as they do with raptors.

We propose that wind turbines, let alone wind farms, may create extensive population sinks which could deplete and exterminate populations of birds and bats. We doubt the woeful amount of independent monitoring of turbine impacts would be capable of

detecting this threat in most regions or for most species.

In the circumstances, a precautionary approach would be particularly appropriate in areas with populations of already threatened endemic hirundines, bats and other species – as in Seychelles or the Mascarenes for instance. For such areas, irreversible global extinction might be caused by wind turbines, yet even the highest standards of monitoring (including videos and radio transmitters) might be insufficient to alert us in time. We predict the extinction legacy of wind turbines will become an increasing source of concern, as ecological traps are set in vast numbers across the planet.

Clive Hambler (Lecturer in Biological and Human Sciences, Hertford College, University of Oxford)
Mark Duchamp (President, Save the Eagles International; Chair, World Council for Nature)

References:

(1) – http://blog.birdguides.com/2013/06/white-throated-needletail.html

(2) – Photos of a sample of bird fatalities due to wind farms, including hirundines, from the Save the Eagles International website:
http://savetheeagles.wordpress.com/birdkill-pictures/

- More pictures of birds killed by wind turbines may be seen here:
http://savetheeaglesinternational.org/multimedia/

- And there are many more.

(3) – Video monitoring of bats flying between turbine blades, showing some getting struck: http://www.epaw.org/multimedia.php?article=b6

(4) – "We recorded 11 species (of a community of 18 species) flying over the ocean up to 14 km from the shore." Ahlén, I. et al. (2009). Behaviour of Scandinavian bats during migration and foraging at sea. Journal of Mammology, 90, 1318-1323
http://www2.ekol.slu.se/Personliga_filer/Ahlen/JmammBatsatSeaDec09.pdf

- "The bats did not avoid the turbines. On the contrary they stayed for shorter or longer periods hunting close to the windmills because of the accumulation of flying insects. Hunting close to the blades was observed, why the risk of colliding might be comparable to land-based turbines. Bats also used wind turbines for resting. Insects were collected at places and times when bats were observed feeding." Ahlén, I. et al. (2007). Bats and offshore wind turbines studied in southern Scandinavia. Swedish Environmental Protection Agency. Report 5571.
http://www.naturvardsverket.se/Documents/publikationer/620-5571-2.pdf

(5) – "Increased risks depend on insect hunting (swifts, swallows), carrion search (crows, ravens, some raptors), and hangwind gliding (red kites, eagles, and buzzards)." – Ahlén, I. (2010). Fågelarter funna under vindkraftverk i Sverige. Var Fågelvärld, 4/2010, 8-12
http://www.slu.se/PageFiles/8390/artiklar/BirdsWindPowerVF2010.pdf

- Long, C. V. et al. (2011). Insect attraction to wind turbines: does colour play a role?

European Journal of Wildlife Research, 57, 323-331
http://peer.ccsd.cnrs.fr/docs/00/62/51/48/PDF/PEER_stage2_10.1007%252Fs10344-010-0432-7.pdf

- http://windfarmaction.wordpress.com/2013/04/08/brief-summary-of-recent-international-research-on-the-risk-to-bats-from-wind-turbines/

(6) – "Almost one third of the birds (killed) were swallows and swifts, species that like bats hunt flying insects". Ahlén, I. (2002). Wind turbines and bats – a pilot study. Report to Swedish National Energy Association.
http://publikationer.slu.se/Filer/08WindBatFinalReport.pdf

Some possibly related stories:

- Wind turbines and bats — a pilot study
- Bats and offshore wind turbines studied in southern Scandinavia
- Wind turbines as landscape impediments to the migratory connectivity of bats
- Bat Fatality Monitoring Report for the Pigeon Creek Wind Turbine
- Post-construction mortality surveys at Pennsylvania wind turbines

https://www.fort.usgs.gov/science-feature/96

Bat Fatalities at Wind Turbines: Investigating the Causes and Consequences

Wind energy is one of the fastest-growing industries in the world and represents an important step toward reducing dependence on non-renewable sources of power. However, widespread deployment of industrial wind turbines is having unprecedented adverse effects on certain species of bats that roost in trees and migrate. Bats are beneficial consumers of agricultural insect pests and migratory species of bats provide free pest-control services across ecosystems and international borders.

Bats are being found beneath wind turbines all over the world. Bat fatalities have now been documented at most wind facilities in the U.S. and Canada and it is estimated that tens to hundreds of thousands die at wind turbines in North America each year. This unanticipated issue has moved to the forefront of conservation and management efforts directed toward this poorly understood group of mammals, particularly due to the concurrent effects of a new bat disease, white-nose syndrome. The mystery of why bats die at industrial wind turbines remains unsolved. Is it a simple case of flying in the wrong place at the wrong time? Are bats attracted to the spinning turbine blades? Why are so many bats colliding with turbines compared to their infrequent crashes with other tall, human-made structures? Are there ways to predict and minimize risk to bats before turbines are built?

Although these questions remain mostly unanswered, potential clues can be found in the patterns of fatalities. Foremost, the majority of bat fatalities at industrial turbines are species that migrate long distances and rely on trees as roosts throughout the year, some of which migrate long distances; we call these "tree bats." Tree bats compose more than three quarters of the bat fatalities observed at wind energy sites. The other striking pattern is that the vast majority of bat fatalities at wind turbines occur during late summer and autumn. This seasonal peak in fatalities coincides with periods of both autumn migration and mating behavior of tree bats. Seasonal involvement of species with shared behaviors indicates that behavior plays a key role in the susceptibility of bats to wind turbines, and that migratory tree bats might actually be attracted to turbines.

Over the past decade USGS scientists and their research partners have been studying bat deaths at wind turbines, with the ultimate goal of understanding why they are happening so solutions can be developed to avoid or fix the problem. In addition to

synthesizing existing information, USGS research has focused on better understanding aspects of tree bat ecology that might offer important clues to their susceptibility (see Paul Cryan publications). This work has shed new light on the migratory movements, mating behaviors, and feeding habits of migratory tree bats, which may help explain their disproportionate representation among turbine fatalities. For example, analysis of distribution records, as documented in the following links, hint at where these bats might occur at any given time of year:

•

Continuing on the same research trajectory, USGS scientists at the Fort Collins Science Center have built an active research program to investigate the causes and consequences of bat fatalities at wind turbines. In collaboration with scientists at 4 other USGS science centers, as well as universities and conservation organizations, our specific focus is to (1) better identify the seasonal distributions, habitat needs, and migration patterns of species showing greatest susceptibility, (2) continue to assess the potential roles of mating and feeding behaviors in turbine collisions, (3) develop new video-based methods for studying and monitoring bats and birds flying around wind turbines at night, and (4) test whether bats are attracted to turbines. With a proven track record of studying bat migration and behavior, combined with an existing infrastructure that promotes collaboration between disciplines, the USGS is well-equipped to effectively address the problem of bat mortality at wind power facilities. Only through further research will we make progress toward minimizing the impact of this new form of sustainable energy on our Nation's wildlife.

Movie Clip of a Hoary Bat Investigating a Wind Turbine

A hoary bat (*Lasiurus cinereus*) makes multiple approaches to a wind turbine at night. This video image was recorded in the dark using a camera that images heat rather than visible light. The turbine tower rises approximately 80 meters above the ground and is about the height of a 26-story building. USGS scientists and their research partners are breaking new ground in our understanding of bat susceptibility to turbines by putting new technology to work in studying this difficult problem.

Related Products

Authors	Year	Title	Type	Online
Cryan, P.M. and R.H. Diehl	2009	Analyzing Bat Migration	Book, Pages in	Y
Weller, T.J., P.M. Cryan, and T.J. O'Shea	2009	Broadening the focus of bat conservation and research in the USA for the 21st century	Journal Article	Y
Cryan, P., E. Valdez,	201	Carcass ecology: Forensic techniques	Abstrac	N

Authors	Year	Title	Type	Online
C. Stricker, M. Wunder, R. Barclay, E. Baerwald, C. Willis, J. Jameson, E. A. Snider, and E. Crichton	2	shed light on the possible causes of bat susceptibility to turbines	t	
Cryan, P.M. and R.M.R. Barclay	2009	Causes of bat fatalities at wind turbines: Hypotheses and predictions	Journal Article	Y
Loeb, S., J. Coleman, L. Ellison, P. Cryan, T. Rodhouse, T. Ingersoll, and R. Ewing	2012	Development of a North American Bat Population Monitoring and Modeling Program	Abstract	N
Boyles, J.G., P.M. Cryan, G.F. McCracken, and T.H. Kunz	2011	Economic importance of bats in agriculture	Journal Article	Y
Cryan, P.M., J.W. Jameson, E.F. Baerwald, C.K.R. Willis, R.M.R. Barclay, E. Snider, and E.G. Crichton	2012	Evidence of late-summer mating readiness and early sexual maturation in migratory tree-roosting bats found dead at wind turbines	Journal Article	Y
Valdez, E.W. and P.M. Cryan	2009	Food habits of the hoary bat (Lasiurus cinereus) during spring migration through New Mexico	Journal Article	Y
Cryan, P.M	2008	Mating behavior as a possible cause of bat fatalities at wind turbines	Journal Article	N
Gorresen, P.M., P.M. Cryan, and F.J. Bonaccorso	2011	Monitoring and researching bat activity at wind turbines with near infrared videography	Abstract	N
O'Shea, T.J., M.A. Bogan, and L.E. Ellison	2003	Monitoring trends in bat populations of the United States and territories: status of the science and recommendations for the future	Journal Article	Y
Cryan, P.M	2008	Overview of issues related to bats and wind energy: Web version of presentation to the Wind Turbine Guidelines Advisory Committee Technical Workshop & Federal Advisory Committee Meeting, Washington, D.C., 26 February, 2008	USGS Series	Y
Cryan, P.M	200	Seasonal distribution of migratory tree	Journal	Y

Authors	Year	Title	Type	Online
	3	bats (Lasiurus and Lasionycteris) in North America	Article	
Cryan, P.M., M.A. Bogan, R.O. Rye, G.P. Landis, and C.L. Kester	2004	Stable hydrogen isotope analysis of bat hair as evidence for seasonal molt and long-distance migration	Journal Article	Y
Cryan, P. and J.T. Wilson	2009	Wind energy: A scare for bats and birds [Audio Podcast]	Podcast	Y
Cryan, P.M	2011	Wind turbines as landscape impediments to the migratory connectivity of bats	Journal Article	Y

http://electrical-engineering-portal.com/why-bats-are-insanely-attracted-to-wind-turbines

Electrical Engineering Portal

Why Bats Are Insanely Attracted To Wind Turbines?

Posted Mar 6 2013 by Edvard Csanyi

Bat Kills at Wind Turbines

Recent studies have reported large numbers of bats being killed at ***wind farms*** in many parts of North America and Europe. Project monitoring has also discovered significant bat mortality at the Mexico La Venta II wind farm. Bat kills at wind turbines were first discovered in Australia.

Small numbers of bats were first recorded in the United States at wind power projects in California during bird monitoring.

Some time ago, an estimated ***1,400-4,000 bats*** were recorded as killed during 2008 at the Mountaineer Wind Energy Center in West Virginia . High bat mortality at that site has continued since then.

The frequency and number of bat kills at wind turbines are ***much greater*** than for any other type of human-built structure.

Unlike birds, bats strike ***wind towers*** as well as telecommunications towers, buildings or power lines, but very infrequently.

Bat Mortality from Collisions and Barotrauma

Bats that fly too close to wind turbines are killed by either ***direct impact*** or from ***major air pressure changes*** around the spinning rotors.

While bats clearly are killed by ***direct collision with turbine blades***, up to 50 percent of the dead bats around wind turbines are found ***with no visible sign of injury***.

The cause for this non-collision mortality is believed to be a type of decompression known as barotrauma, resulting from rapid air pressure reduction near moving turbine blades.

Barotrauma kills bats near wind turbines by causing severe tissue damage to their lungs, which are large and pliable, thereby overly expanding when exposed to a sudden drop in pressure.

By contrast, ***barotrauma does not affect birds*** because they have compact, rigid lungs that do not excessively expand.

Bat Atraction to Wind Turbines

Many species of bats appear to be ***significantly attracted to wind turbines*** for reasons that are still poorly understood.

Here we're gonna try to summarizes the more plausible scientific hypotheses that have been advanced to date. ….

9 Hypotheses for Bat Attraction to Wind Turbines

Various scientific hypotheses have been proposed as to why bats are seemingly attracted to and/or fail to detect wind turbines

The more plausible hypotheses include the following:

1. Auditory Attraction

Bats may be attracted to the ***audible "swishing" sound*** produced by wind turbines. Museum collectors seeking bat specimens have used long poles that were swung back and forth to attract bats and then knock them to the ground for collection.

It is not known if these bats were attracted to the audible "swishing" sound, the movement of the pole, or both factors.

2. Electromagnetic Field Disorientation

Wind turbines produce ***complex electromagnetic fields***, which may cause bats in the general vicinity to become ***disoriented*** and ***continue flying close to the turbines***.

3. Insect Attraction

As ***flying insects*** may be attracted to wind turbines, perhaps due to their prominence in the landscape, white color, lighting sources, or heat emitted from the nacelles, bats would be attracted to concentrations of prey.

4. Heat Attraction

Bats may be attracted to the heat produced by the ***nacelles of wind turbines*** because they are seeking warm roosting sites.

5. Roost Attraction

Wind turbines may attract bats because they are perceived as potential roosting sites.

6. Lek Mating

Migratory tree bats may be attracted to wind turbines because they are the highest structures in the landscape along migratory routes, possibly thereby serving as rendezvous points for mating.

7. Linear Corridor

Wind farms constructed along forested ridge-tops create clearings with linear landscapes that may be attractive to bats.

8. Forest Edge Effect

The clearings around wind turbines and access roads located within forested areas create forest edges. At forest edges, insect activity might well be higher, along with the ability of bats to capture the insects in flight.

Resident bats as well as migrants making stopovers may be similarly attracted to these areas to feed, thus increasing their expo-sure to turbines and thus mortality from collision or barotrauma.

9. Thermal Inversion

Thermal inversions create dense fog in cool valleys, thus concentrating both bats and their insect prey on ridge-tops.

(North American species edited out – not applicable)

Bat Detection Technology Demonstration for Wind Turbines (VIDEO)

Bats are worth billions to the ***agriculture industry*** due to their ***natural control of pests***. Unfortunately, wind power poses a risk to bats due to the potential for them to be struck by spinning turbine blades.

EPRI is working with ***We Energies*** to demonstrate a specialized technology that uses ultrasonic microphones to detect the presence of bats. If the microphones pick up the high-pitched squeaks and clicks bats make, the turbines will automatically shut down and restart when the bats are out of range.

The project is focused on ***reducing bat mortality at wind farms*** while avoiding long-term curtailments and maximizing electricity production.

(Latin American species edited out – not applicable)

Bats Worth Billions to Agriculture: Pest-control Services at Risk
Released: 3/31/2011 4:38:46 PM

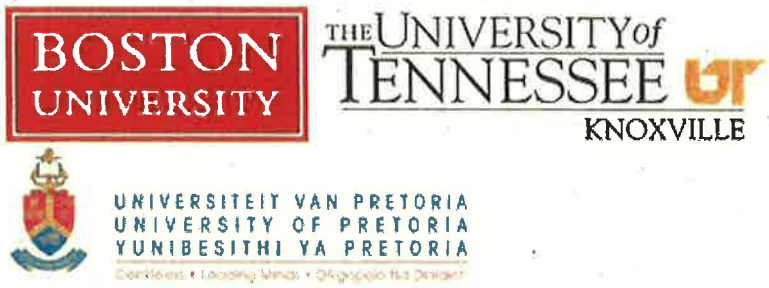
Contact Information:
U.S. Department of the Interior, U.S. Geological Survey
Office of Communication
119 National Center
Reston, VA 20192

Catherine Puckett, USGS
Phone: 352-264-3532

Marisa Lubeck, USGS
Phone: 303-202-4765

Justin Boyles, Univ. of Pretoria
Phone: +27-0124205343, skype justin.boyles1

In partnership with: Boston University, University of Tennessee, University of Pretoria, South Africa



Most relevant info highlighted on page 2 and 3. RJC.

Additional Media Contacts:
•Paul Cryan, USGS, 970-226-9389, cryanp@usgs.gov
•Gary McCracken, University of Tennessee, 865-974-3065, gmccrack@utk.edu
•Thomas Kunz, Boston University, 617-353-2474, kunz@bu.edu

Pest-control services provided by insect-eating bats in the United States likely save the U.S. agricultural industry at least $3 billion a year, and yet insectivorous bats are among the most overlooked economically important, non-domesticated animals in North America, according to an analysis published in this week's Science magazine Policy Forum.

"People often ask why we should care about bats," said Paul Cryan, a U.S. Geological Survey research scientist and one of the study's authors. "This analysis suggests that bats are saving us big bucks by gobbling up insects that eat or damage our crops. It is obviously beneficial that insectivorous bats are patrolling the skies at night above our fields and forests — these bats deserve help."

The value of the pest-control services to agriculture provided by bats in the U.S. alone range from a low of $3.7 billion to a high of $53 billion a year, estimated the study's authors, scientists from the University of Pretoria (South Africa), USGS, University of Tennessee and Boston University. They also warned that noticeable economic losses to North American agriculture could occur in the next 4 to 5 years as a result of emerging threats to bat populations.

"Bats eat tremendous quantities of flying pest insects, so the loss of bats is likely to have long-term effects on agricultural and ecological systems," said Justin Boyles, a researcher with the University of Pretoria and the lead author of the study. "Consequently, not only is the conservation of bats important for the well-being of ecosystems, but it is also in the best interest of national and international economies."

A single little brown bat, which has a body no bigger than an adult's thumb, can eat 4 to 8 grams (the weight of about a grape or two) of insects each night, the authors wrote. Although this may not sound like much, it adds up — the loss of the one million bats in the Northeast has probably resulted in between 660 and 1320 metric tons of insects no longer being eaten each year by bats in the region.

"Additionally, because the agricultural value of bats in the Northeast is small compared with other parts of the country, such losses could be even more substantial in the extensive agricultural regions in the Midwest and the Great Plains where wind-energy development is booming and the fungus responsible for white-nose syndrome was recently detected," said Tom Kunz, a professor of ecology at Boston University, another co-author.

Although these estimates include the costs of pesticide applications that are not needed because of the pest-control services bats provide, Boyles and his colleagues said they did not account for the detrimental effects of pesticides on ecosystems nor the economic benefits of bats suppressing pest insects in forests, both of which may be considerable.

Bat populations are at risk in some areas of the country as a result of the emerging disease of white-nose syndrome. The loss of bats to white-nose syndrome has largely occurred during the past 4 years, after the disease first appeared in upstate New York. Since then, the fungus thought to cause white-nose syndrome has spread southward and westward and has now been found in 16 states and 3 Canadian provinces. Bat declines in the Northeast, the most severely affected region in the U.S. thus far, have exceeded 70 percent. Populations of at least one species, the little brown bat, have declined so precipitously that scientists expect the species to disappear from the region within the next 20 years.

Scientists are also concerned with the potential for losses of certain species of migratory bats at wind-energy facilities. By one estimate, published by Kunz and colleagues in 2007, about 33,000 to 111,000 bats will die each year by 2020 just in the mountainous region of the Mid-Atlantic Highlands from direct collisions with wind turbines as well as lung damage caused by pressure changes bats experience when flying near moving turbine blades. The issue raised by the authors is that the impacts on bat populations from white nose syndrome and wind turbines are just beginning to interact and might result in economic consequences.

"We hope that our analysis gets people thinking more about the value of bats and why their conservation is important," said Gary McCracken, a University of Tennessee professor and co-author of the analysis. "The bottom line is that the natural pest-control services provided by bats save farmers a lot of money."

The authors conclude that solutions to reduce threats to bat populations may be possible in the coming years, but that such work is most likely to be driven by public support that will require a wider awareness of the benefits of insectivorous bats.

The article, "Economic importance of bats in agriculture," appears in the April 1 edition of Science. Authors are J.G. Boyles, P. Cryan, G. McCracken and T. Kunz.

http://www.theguardian.com/environment/2010/mar/07/extinction-species-evolve

The Guardian

Humans driving extinction faster than species can evolve, say experts.

- By Juliette Jowit, Sunday 7 March 2010

Conservationists say rate of new species slower than diversity loss caused by the destruction of habitats and climate change

For the first time since the dinosaurs disappeared, humans are driving animals and plants to extinction faster than new species can evolve, one of the world's experts on biodiversity has warned.

Conservation experts have already signalled that the world is in the grip of the "sixth great extinction" of species, driven by the destruction of natural habitats, hunting, the spread of alien predators and disease, and climate change.

However until recently it has been hoped that the rate at which new species were evolving could keep pace with the loss of diversity of life.

Speaking in advance of two reports next week on the state of wildlife in Britain and Europe, Simon Stuart, chair of the Species Survival Commission for the International Union for the Conservation of Nature – the body which officially declares species threatened and extinct – said that point had now "almost certainly" been crossed.

"Measuring the rate at which new species evolve is difficult, but there's no question that the current extinction rates are faster than that; I think it's inevitable," said Stuart.

The IUCN created shock waves with its major assessment of the world's biodiversity in 2004, which calculated that the rate of extinction had reached 100-1,000 times that suggested by the fossil records before humans.

No formal calculations have been published since, but conservationists agree the rate of loss has increased since then, and Stuart said it was possible that the dramatic predictions of experts like the renowned Harvard biologist E O Wilson, that the rate of loss could reach 10,000 times the background rate in two decades, could be correct.

"All the evidence is he's right," said Stuart. "Some people claim it already is that ... things can only have deteriorated because of the drivers of the losses, such as habitat loss and climate change, all getting worse. But we haven't measured extinction rates again since 2004 and because our current estimates contain a tenfold range there has to be a very big deterioration or improvement to pick up a change."

Extinction is part of the constant evolution of life, and only 2-4% of the species that have ever lived on Earth are thought to be alive today. However fossil records suggest that for most of the planet's 3.5bn year history the steady rate of loss of species is thought to be about one in every million species each year.

Only 869 extinctions have been formally recorded since 1500, however, because scientists have only "described" nearly 2m of an estimated 5-30m species around the world, and only assessed the conservation status of 3% of those, the global rate of extinction is extrapolated from the rate of loss among species which are known. In this way the IUCN calculated in 2004 that the rate of loss had risen to 100-1,000 per millions species annually – a situation comparable to the five previous "mass extinctions" – the last of which was when the dinosaurs were wiped out about 65m years ago.

Critics, including The Skeptical Environmentalist author, Bjørn Lomborg, have argued that because such figures rely on so many estimates of the number of underlying species and the past rate of extinctions based on fossil records of marine animals, the huge margins for error make these figures too unreliable to form the basis of expensive conservation actions.

However Stuart said that the IUCN figure was likely to be an underestimate of the problem, because scientists are very reluctant to declare species extinct even when they have sometimes not been seen for decades, and because few of the world's plants, fungi and invertebrates have yet been formally recorded and assessed.

The calculated increase in the extinction rate should also be compared to another study of thresholds of resilience for the natural world by Swedish scientists, who warned that anything over 10 times the background rate of extinction – 10 species in every million per year – was above the limit that could be tolerated if the world was to be safe for humans, said Stuart.

"No one's claiming it's as small as 10 times," he said. "There are uncertainties all the way down; the only thing we're certain about is the extent is way beyond what's natural and it's getting worse."

Many more species are "discovered" every year around the world, than are recorded extinct, but these "new" plants and animals are existing species found by humans for the first time, not newly evolved species.

In addition to extinctions, the IUCN has listed 208 species as "possibly extinct", some of which have not been seen for decades. Nearly 17,300 species are considered under threat, some in such small populations that only successful conservation action can stop them from becoming extinct in future. This includes one-in-five mammals assessed, one-in-eight birds, one-in-three amphibians, and one-in-four corals.

Later this year the Convention on Biological Diversity is expected to formally declare that the pledge by world leaders in 2002 to reduce the rate of biodiversity loss by 2010 has not been met, and to agree new, stronger targets.

Despite the worsening problem, and the increasing threat of climate change, experts stress that understanding of the problems which drive plants and animals to extinction has improved greatly, and that targeted conservation can be successful in saving species from likely extinction in the wild.

This year has been declared the International Year of Biodiversity and it is also hoped that a major UN report this summer, on the economics of ecosystems and biodiversity, will encourage governments to devote more funds to conservation.

Professor Norman MacLeod, keeper of palaeontology at the Natural History Museum in London, cautioned that when fossil experts find evidence of a great extinction it can appear in a layer of rock covering perhaps 10,000 years, so they cannot say for sure if there was a sudden crisis or a build up of abnormally high extinction rates over centuries or millennia.

For this reason, the "mathematical artefacts" of extinction estimates were not sufficient to be certain about the current state of extinction, said MacLeod.

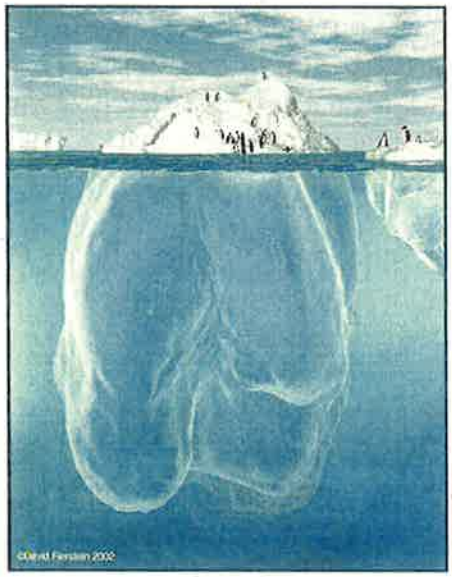
"If things aren't falling dead at your feel that doesn't mean you're not in the middle of a big extinction event," he said. "By the same token if the extinctions are and remain relatively modest then the changes, [even] aggregated over many years, are still going to end up a relatively modest extinction event."

http://wcfn.org/2013/07/01/tip-of-the-iceberg/

World Council for Nature

independent and dedicated

The tip of the iceberg



A rare bird hit by wind turbine blades in the presence of birdwatchers leads conservationists to ask some disturbing questions.

Photo: courtesy of the Daily Mail – http://www.dailymail.co.uk

Does fatal attraction of hirundines to wind turbines threaten populations and species?

The fatal impact of a white-throated needletail with a wind turbine in Scotland (1) raises serious concerns, with ramifications far beyond the sad loss of a single, spectacular vagrant. As a rare visitor, this individual bird was being very carefully observed, and thus there was a far higher chance of a turbine impact being detected than is the case for most small birds. Only a minuscule fraction of birds are intensively monitored in this way, and if the movements and fates of many other individual birds were being monitored, then what appears to be a rare event might prove to be frequent – or indeed probable. The death of this needletail should remind us that numerous small birds are being hit by turbines without detection or raising alarm. However, other hirundine deaths have already been documented amongst Europe's wind turbines (2).

The needletail encountered a small, lone turbine. On the face of it, this is highly unlikely – unless the bird was actively attracted to the vicinity of the turbine. Indeed, some insects are attracted to wind turbines, and some bats are attracted to their deaths by unknown features of the turbines – possibly the food concentration around them (3, 4, 5). **Remarkably, there are reports of bats commuting to wind turbines up to 14 km offshore for such food resources, as well as others stopping, perching and feeding around them during migration** (4). **This attraction exerted by wind turbines extends their ecological footprint to new, unsuspected dimensions.**

We hypothesise that **hirundines** (including swifts, swallows, martins, swiftlets and needletails) **might also be attracted to insects flying around these machines – onshore and offshore**. Indeed, awareness has already been raised about the potential attraction of insectivorous birds to wind turbines (5). Reports (5, 6) that hirundines can comprise a third of turbine victims in Sweden and are being killed by domestic microturbines in Britain merit further investigation. Another consideration is that certain landscape features and air flows might attract both wind farm developers and hirundines, putting them on a collision course as they do with raptors.

We propose that wind turbines, let alone wind farms, may create extensive **population sinks** which could deplete and exterminate populations of birds and bats. We doubt the woeful amount of independent monitoring of turbine impacts would be capable of detecting this threat in most regions or for most species.

In the circumstances, a **precautionary approach** would be particularly appropriate in

areas with populations of already threatened endemic hirundines, bats and other species – as in Seychelles or the Mascarenes for instance. For such areas, irreversible global extinction might be caused by wind turbines, yet even the highest standards of monitoring (including videos and radio transmitters) might be insufficient to alert us in time. We predict the extinction legacy of wind turbines will become an increasing source of concern, as ecological traps are set in vast numbers across the planet.

Clive Hambler (Lecturer in Biological and Human Sciences, Hertford College, University of Oxford)
Mark Duchamp (President, Save the Eagles International; Chair, World Council for Nature)

References:

(1) – http://blog.birdguides.com/2013/06/white-throated-needletail.html

(2) – Photos of a sample of bird fatalities due to wind farms, including hirundines, from the Save the Eagles International website:
http://savetheeagles.wordpress.com/birdkill-pictures/

- More pictures of birds killed by wind turbines may be seen here:
http://savetheeaglesinternational.org/multimedia/
and there are many more.

(3) – Video monitoring of bats flying between turbine blades, showing some getting struck: http://www.epaw.org/multimedia.php?article=b6

(4) – "*We recorded 11 species (of a community of 18 species) flying over the ocean* ***up to 14 km*** *from the shore*." Ahlén, I. et al. (2009). Behaviour of Scandinavian bats during migration and foraging at sea. Journal of Mammology, 90, 1318-1323
http://www2.ekol.slu.se/Personliga_filer/Ahlen/JmammBatsatSeaDec09.pdf

- "*The bats did not avoid the turbines. On the contrary they stayed for shorter or longer periods hunting close to the windmills because of the* ***accumulation of flying insects****. Hunting close to the blades was observed, why the risk of colliding might be comparable to land-based turbines.* ***Bats also used wind turbines for resting****. Insects were collected at places and times when bats were observed feeding*." Ahlén, I. et al. (2007). Bats and offshore wind turbines studied in southern Scandinavia. Swedish Environmental Protection Agency. Report 5571.
http://www.naturvardsverket.se/Documents/publikationer/620-5571-2.pdf

(5) – "*Increased risks depend on insect hunting (****swifts, swallows****), carrion search (crows, ravens, some raptors), and hangwind gliding (red kites, eagles, and*

buzzards)." – Ahlén, I. (2010). Fågelarter funna under vindkraftverk i Sverige. Var Fågelvärld, 4/2010, 8-12
http://www.slu.se/PageFiles/8390/artiklar/BirdsWindPowerVF2010.pdf

- Long, C. V. et al. (2011). Insect attraction to wind turbines: does colour play a role? European Journal of Wildlife Research, 57, 323-331
http://peer.ccsd.cnrs.fr/docs/00/62/51/48/PDF/PEER_stage2_10.1007%252Fs10344-010-0432-7.pdf

- http://windfarmaction.wordpress.com/2013/04/08/brief-summary-of-recent-international-research-on-the-risk-to-bats-from-wind-turbines/

(6) – "*Almost one third of the birds (killed) were* ***swallows and swifts****, species that like bats hunt flying insects*". Ahlén, I. (2002). Wind turbines and bats – a pilot study. Report to Swedish National Energy Association.
http://publikationer.slu.se/Filer/08WindBatFinalReport.pdf

https://www.herefordshire.gov.uk/environmental-protection/conservation-and-sustainability/areas-of-outstanding-natural-beauty – and many other sites.

An Area of Outstanding Natural Beauty (AONB) is an area whose distinctive character and natural beauty is so outstanding that it is in the nation's interest to safeguard it.

The primary purpose of AONB designation is to conserve and enhance the natural beauty of the area. 'Natural beauty' is taken to include geology, climate, soils, animals, communities, archaeology, buildings, the people who live in it, past and present, and the perceptions of those who visit it.

The landscapes of AONBs are equal in value to those of our National Parks and command the same levels of planning protection.