WINDFARMS TO WIPE OUT

SCOTTISH EAGLES

The UK ornithological establishment appears to be happy with the siting of windfarms within eagle territories. Whereas the great birds are being slaughtered by wind turbines in the rest of the world, we are asked to believe it is not the case in Scotland. There, we are told, the negative impact on eagles is mitigated through "habitat management".
A reality check proves this to be wrong.

Picture : golden eagle beheaded by a turbine blade in Aragon, Spain - courtesy of El Sekano - http://blog.sekano.org/

Ornithologists D. WALKER, M. MCGRADY, A. MCCLUSKIE, M. MADDERS & D. R. A. MCLEOD were hired to conduct a monitoring study at the Beinn an Tuirc windfarm (BT), which lies within the territory of a breeding pair of golden eagles and whose impact on them is being mitigated by habitat management (1). But curiously, the scope of the study did not include searching for dead eagles under the turbines.
Scientific carcass searches have not been conducted at BT, nor at any other windfarm in Scotland for that matter. Most European countries do it, but not Scotland. We don´t want to know whether or not windfarms harm our wildlife. We want to believe that windfarms and eagles can live together, even if we have to put blinkers on. And here lies the explanation for the alleged lack of eagle collisions north of the border : **we don´t look, so we don´t find.**
As a matter of fact, various eagles happen to have disappeared at or near Scottish windfarms. But **officially**, none of them was killed by a turbine. Golden eagles have vanished from the Beinn Ghlas area, for instance, since a windfarm was built on their breeding territory (3). But the public is not informed, and people who ask are being told stories : the eagles have been "displaced" by the windfarm. How convenient ! But scientifically established evidence from abroad proves that, on the contrary, eagles are attracted by windfarms (16).

At Beinn an Tuirc, though, an adult male was reported missing. But the female stayed. To explain that, will SNH pretend that windfarms cause eagles to divorce ? It would be easier to pretend : died of old age. But as a body is not there to prove it, we are entitled to suspect that the bird was struck by a blade, like other eagles in Germany, Norway, Sweden, Spain etc etc.

Eagles are being killed, we are kept in the dark, and European law is being violated. So is the precautionary principle, which is so essential to conservation. For if an eagle disappears near a windfarm, and no search is made to find its carcass, it should be deemed to have been killed by a rotor : that´s the precautionary approach, for data from other countries show that eagles are especially vulnerable to wind turbines (2).

But hypocrisy is rampant, and by and large Scottish ornithologists keep silent on the vanished eagles. So does the **RSPB**, and thus the habitat management myth is allowed to perdure.
Imaginative ornithologists go as far as calling it "habitat enhancement" (e.g. at Loch Luichart). On the Isle of Lewis, a consultant had the audacity to allege that, thanks to "prey enhancement", a windfarm would actually benefit the eagles. - This is not unlike pretending that windfarms are good for tourism, or will enhance the landscape. People will say any absurdity : decency flew out the window ages ago.

Not surprisingly, this often-flaunted mitigation resulted in failure at the two windfarms where it was implemented : Beinn Ghlas and Beinn an Tuirc. In January 2007, reputed Argyll ornithologist and raptor expert **Mike Gregory** wrote :

1) about BT : *"The last time a chick was reared was in 1997 when survey work for the wind farm commenced. Since construction work started in 2001 breeding productivity has been zero."*

2) about BG : *"The last time that any eagle chick was reared at Beinn Ghlas was in 1991."*

3) about both : ***"Taken together, the experience at both Beinn an Tuirc and Beinn Ghlas ought to suggest that wind farms and Golden Eagles do not go well together ..."***

He also mentioned the disappeared eagles, and used irony to highlight the **misinterpretation by SNH of the mitigation experiments :** "*When dealing with another proposal, the SNH Area Manager for Argyll felt confident enough to write in February 2006 "From studies of existing wind farms in Argyll it would appear that eagles avoid and are displaced from areas with wind farms."* (3)

As I said before, if one doesn´t look for their carcasses, it is unlikely that they will be found. Apart from the myth of habitat management, another one is thus maintained : the fiction that eagles avoid windfarms. We know from scientific studies (and from mortality statistics) that the opposite is true - see :
RSPB executives are causing severe harm to bird life

Picture: Loch Avich, near the Beinn Ghlas windfarm. This is the sort of landscape being

ruined for a tiny amount of erratic, uncontrolable, and unreliable energy.

Being aware of eagle mortality at windfarms abroad, Scottish ornithologists hired as consultants cannot pretend to ignore the risk of collision. So they make mortality predictions, with the consent of their employers, using computer models. But, of course, the results can manipulated by "managing" the input.

Here are a few of their predictions, compared to what mortality may turn out to be in real life :

..... **GOLDEN EAGLES (GE)**

..... WHITE-TAILED SEA EAGLES (WTE)

WINDFARM PROJECT DEVELOPER 25-YEAR PREDICTION

REAL LIFE POSSIBILITY (*)

NORTH LEWIS :.....50 golden eagles.....50 GE.....15 WTE
PENTLAND ROAD :.....1 golden eagle (**).....20 GE.....2 WTE
EISHKEN :.....9 golden eagles and 6 sea eagles.....75 GE.....20 WTE
PAIRC :.....66 to 165 golden eagles.....65 GE.....15 WTE
EDINBANE :.....15 golden eagles and 2 sea eagles.....80 GE.....15 WTE
BEN AKETIL :.....3 golden eagles.....30 GE.....10 WTE
CARRAIG GHEAL :.....no prediction, but ... (***).....20 GE
ALLT DEARG :.....unavailable, but ... (****).....80 GE.....5 WTE
STACAIN :.....25 golden eagles.....25 GE
LOCH LUICHART :.....no prediction, but ... (***).....20 GE
SHIRA :.....a minimum of 13 golden eagles.....20 GE
etc.....etc.....etc.....etc.

TOTAL (*****) 485+GE and **82+ WTE**

(*) - ... based on critiques from Dr Jeremy Carter, the British Trust for Ornithology, ornithologists Mike Madders and Philip Whitfield, and real life mortality data from 7 countries (4).

(**) - in 46 years.

(***) - ... the windfarm will be built within the breeding territory of a pair of golden eagles, so chances are there will be collisions.

(****) - Similar situation as Edinbane : it is on a hill within a dispersion area for young eagles. A "dispersion area" is a hunting territory without suitable nesting sites, thereby free of territorial adults : it is therefore used by a multiplicity of young eagles. To make things worse, there is a high turnover as these young birds travel from one dispersion area to the next, all over Scotland, looking for a suitable place to establish themselves. The population sink effect is more severe as a result (e.g. the very large, very infamous Altamont Pass windfarm in California that kills on average 116 golden eagles a year, according to the latest monitoring

study (6)).

(*****) - It is not possible to accurately estimate cumulative mortality of the 11 projects without knowing the total number of windfarms that will be built where eagles fly, plus some information about them. As the national eagle population dwindles, adjustments must be made to annual mortality estimates. I made allowance for that in my figures, but they lack precision due to the missing information. To estimate how fast the national population will be shrinking, one needs to know how many windfarms will be slaying eagles. **Is this why the information is not made available by SNH, or the RSPB ?** If the RSPB doesn´t know, then why don´t they demand to be informed ? For how can they give an orange/green light to Allt Dearg, for instance, if they don´t know how many more killer windfarms there will be ? (12) **It is irresponsible of them one way or another.**

NOTES :

1) - some of these projects have been **downsized**, and with them their predicted impact. The question is: **are 50 land mines so much less dangerous than 150, when planted on a busy road ? Besides, mines explode and disappear, but wind turbines remain, and will be killing birds practically forever.** And there is more: downsized windfarms can be expanded at a later date with great ease. This manipulation has been denounced in another paper (5).

2) - In a letter obtained from SNH under the Freedom of Information Act, it was revealed that a stunning error had been found by an independent party, Dr Jeremy Carter, in the computer-modelled eagle mortality predictions for the Eishken project (a.k.a. Eisgein, or Muaitheabhal). Indeed, it had been predicted that one golden eagle would be killed every 3 to 6 years, and one sea eagle every 8 to 15 years, whereas it should have read "every 3 to 6 **weeks**" and "every 8 to 15 **weeks**. - The Herald, Feb 2, 2006.

SNH had thus recognised that 288 golden eagles and 113 WTE could be killed at Eishken over 25 years. As this caused a bit of a stir, SNH alleged more errors and the predictions were dropped. Sited in an Important Bird Area (IBA UK224 or "Park IBA") **whose 11 breeding pairs of golden eagles** arguably constitute the most important concentration of these birds in Europe, **plus 2 pairs of sea eagles**, the Eishken project is **likely to be authorized** after a second downsizing manoeuvre that will make it the competence of local politicians. **It is simply outrageous.**.

Eagles, like most raptors (and some other birds like storks, cranes etc.), use wind and updrafts to gain height without wasting energy. This makes hills and ridges particularly attractive to them, because winds are stronger over these relief features. **Placing windfarms in such locations guarantees the slaughter of these birds, year after year, with no end in sight. They will act as ecological traps, "sinks" where entire populations may disappear.**

In the world, extrapolating from available scientific data, as many as **3,000 eagles, 20,000 vultures, 50,000 other birds of prey, and 10 million smaller birds and bats** may have been killed by windfarms to date (6).

If birds get killed by cars moving at 60 miles an hour, how are they to avoid turbine blades travelling at speeds ranging from 90 to 190 mph at the tip ? (6 bis). Besides, the apparent leisurely pace of the rotors would fool the birds into a mistaken sense of security, thus increasing the risk.

Yet, Scottish authorities are permitting the construction of scores of windfarms, perhaps as many as 100, on hills and ridges that are routinely used by eagles. The 11 projects listed above are just a fraction of the total.

At the 2003 census, there were in Scotland 443 breeding pairs of golden eagles. These birds are being persecuted in many parts of the country : either shot, trapped, or killed by poisoned bait. Some birds also collide with power lines or get electrocuted while resting on pylons. As a result, **the conservation status of the species in Scotland is not favourable. Says Whitfield et al : "only 443 out of 716 known and potential eagle territories were occupied by pairs."** (7).

Scottish golden eagles fledge on average about 200 chicks per annum, possibly less (7). But the majority are killed before they reach maturity at year 5. As a result, there are not enough "floaters" (4-year olds) to replace 100% of the adults that die. The breeding population would have declined in the past 20 years had it not been for the sub-adults : according to the 2003 census, in 10% of pairs one partner was not an adult. This is not unlike children being recruited when wars deplete the ranks of young men.

It is a sign of **"demographic difficulty"**, say Whitfield et al. The population is only "apparently" stable (7) & (8).

An earlier study already expressed the same concern :***"...all the lines of evidence indicate that despite apparent recent stability in the numbers of occupied territories the Scottish golden eagle population is at risk of decline and is not in a "favourable" conservation status (Watson and Whitfield, 2002). The present study indicates that persecution can account for the unfavourable status of the population."*** (9)

In the circumstances, and all things being equal, it is self-evident that ANY new mortality will tip the national GE population into decline. And we have seen that windfarms will cause this "additive" mortality - a term used when there is no expendable population surplus. Moreover, experience at Altamont Pass proves that **there is no learning curve** : eagles have been getting killed in large numbers year after year after year since the eighties. And in Scotland, perhaps as many as 100 windfarms will be acting as population sinks, condemning the Scottish eagles to **extinction**.

Let´s suppose a population of 900 adult golden eagles, and 100 windfarms, with an average mortality of 2 GE´s per windfarm in the first year, declining in following years by 22% in proportion to the corresponding shrinkage in the population :

THIS MODEL, SIMPLIFIED TO THE EXTREME, DOES NOT PRETEND TO REFLECT REALITY - SEE NOTES 2 AND 3 BELOW

ADDITIONAL MORTALITY.....**ADULT POPULATION**

year 1.....200----------> 700
year 2.....154----------> 546
year 3.....120----------> 426
year 4.....94----------> 332
year 5.....73----------> 259
year 6..... 57----------> 202
year 7.....44----------> 158
year 8.....35----------> 123
year 9.....27----------> 96

Result : in 9 years, the Scottish GE population of 443 breeding pairs (say 900 eagles) would have dwindled to less than 50 pairs (96 eagles). After that, it is likely to drag on as the **RSPB** may receive government and private money to try and save the species from extinction, importing eagles at great cost from other countries, or intenting to raise them in captivity.

If we put 50 windfarms instead of 100, we will obtain the same result in 18 years.

If we increase the first year mortality to 4 per windfarm (more realistic, given the presence of big killers like Edinbane, Eishken, Pairc, Allt Dearg etc.), we go back to 9 years.

Notes :

1) - We don´t need to take non-adult birds into consideration for the following reason : if the population were expanding, each additional eagle killed, young or adult, would NOT translate into an equal reduction in the adult population. But it is not the case : the population is stable, and there is no buffer, no surplus of floaters.

2) - **This is a model simplified to the extreme, whose only pretension is to give a general idea as to where we are going. I leave it to SNH or the RSPB to use their more sophisticated population models : I´ve been asking them to do it for years, but to no avail .**
- Don´t they want to know if the eagle population is at risk ?
- Do they know it only too well, but keep people in the dark ?

3) - Since publication, a critic deliberately ignored Note 2 above and challenged the table´s mortality figures. So I will say this : **in real life, 300 golden eagles or more may be killed in the first year, of all ages.** For in addition to the breeding pair, each of the 100 windfarms may also kill their young (where applicable), plus intruders (if any). Then there are windarms that overlap several eagle ranges (such as Eishken, Lewis, Pairc etc.), likely to kill 4 - 6 adults and 2 - 3 sub-adults. Finally, there are those located within busy dispersion areas (such as Edinbane/Ben Aketil, Allt Dearg**, etc.), that may kill up to 10 - 12 young GE´s in the first year.
** The Allt Dearg project was rejected by Councillors, but it is not dead.

In the years following year one, mortality will affect adult eagles from neighbouring territories, as they investigate hunting areas that have become vacant next to theirs, and where prey has become more abundant. It will also affect immatures or floaters that may be hunting there, or trying to form a pair, or just passing through. Finally, more young eagles will be killed by wind turbines in the dispersion areas (Edinbane etc.).

Once the adults of neighbouring territories have been killed, attrition in the remaining adult population will continue because of a sharp decline in the recruitment rate. **Young birds, as they roam over the country from hill to hill, will be decimated by windfarms sited on them :** those within dispersion areas, plus those within the 100 territories now vacant.

Recruitment is bound to become a major problem. Already, with persecution and other causes of death, **only about 50 young GE reach adulthood each year in Scotland (3).** Windfarms in excess of 100, sited in places that are attractive to these young eagles, will have a devastating impact.

After 20 years, **most of the adults will have died of old age**. For lack of recruitment, few will be replaced. **Those living in the few Special Protection Areas that will have remained turbine-free will face the same fate. Their young roam across the country like any other."**

End of Notes.

As for the white-tailed sea eagle, it was extinct in Scotland until some 30 years ago, when a reintroduction programme imported young birds from Norway. Its current, tiny population of 42 breeding pairs makes it vulnerable. **It would be disastrous to build windfarms where this small population is concentrated : the Hebridean islands, and Argyll.** Yet, SNH has already consented to several such projects. And the RSPB strongly objected to only one of them : North Lewis.

Picture : white-tailed sea eagle killed by a wind turbine at the Smola windfarm, Norway.

A great many ornithologists have a vested interest in denying that the Scottish eagles are in danger. To them, windfarms mean employment : avian impact assessments, pre-construction surveys, post-construction monitoring, radio-tracking etc.
- Many remember the lean days when opportunities were more limited.

As for bird societies, in Scotland as in other countries, it is not unusual for them to profit from relationships with windfarm interests : through substantial donations (e.g. SEO/Birdlife in Spain), funding for research projects (e.g. the Peregrine Fund in the US), or business deals (e.g. the RSPB with Scottish & Southern Energy, which sells **"RSPB energy"** to its customers).

In the UK, only two ornithologists have dared speak up :

1) John Miles :
"The problems of being a free lance consultant are that you are paid to write what they want to hear, not the truth." (11)

2) Mike Gregory :
"...the experience at both Beinn an Tuirc and Beinn Ghlas ought to suggest that wind farms and Golden Eagles do not go well together." (3)

Yet the RSPB recently suggested that the Allt Dearg project, sited in a busy dispersion area for young eagles (it may kill 80 GE + 5 WTE), may be acceptable to them if ornithologists were hired to monitor the action during a few years. - Question : the RSPB is sure helping the ornithologists, but is it helping the eagles ?

They also suggested the creation of "alternative suitable habitat" (12) : in other words, the miracle recipe that proved ineffective (twice), causing eagles to be killed (albeit denied). It´s the infamous mitigation previously named "habitat management" (see above).

In view of such negative prospects for the survival of the Scottish eagles, it is surprising to see RSPB management behaving that way. I had already brought these concerns to their attention:

RSPB executives are causing severe harm to bird life and as far back as December 2003 : Windfarms - Red Energy
.... but to no avail.

CONCLUSION

Two windfarms built on breeding eagle territories in Argyll turned out to be harmful to the eagles, as shown by local raptor expert Mike Gregory. But SNH and the RSPB, and establishment ornithologists, stick to the fiction that the results were positive. This gives the green light for politicians to authorise more ill-sited projects, **which may bring the Scottish eagles to extinction within a generation.**

I have been blowing the whistle for years, but neither the media, nor SNH, nor the RSPB have listened. Will they now ?

The same applies to **peat** destroyed by windfarms, which may release more C02 than the turbines may save (15).

Does anyone care ?

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