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Science News



New Study: German Wind Turbines Kill 1,200 Tons Of Insects Per Year

Date: 12/03/19 | Michael Krueger, Science Sceptical blog

A new study finds that around 1,200 tons of insects are killed p.a. by wind turbines in Germany alone

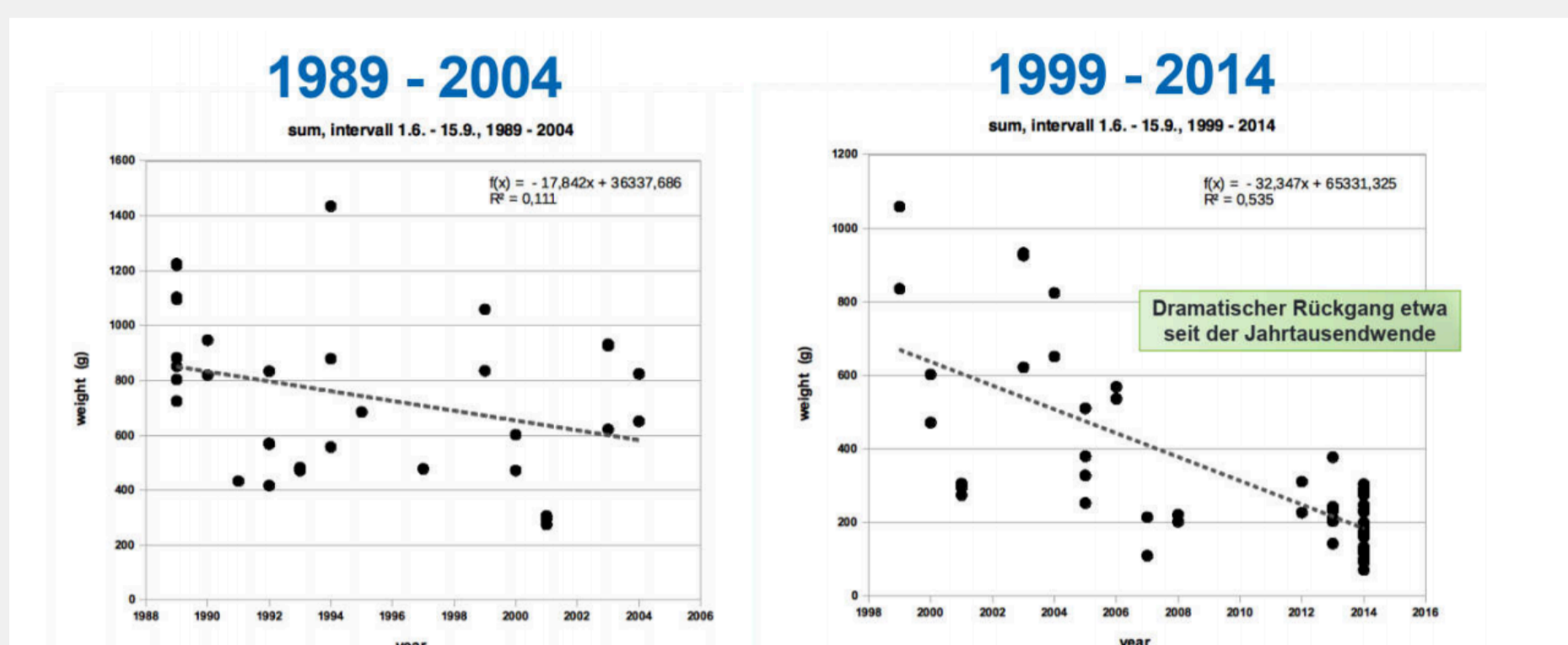


Figure 2: Insect biomass found in Malaise traps in Northern Germany from 1989 – 2014 (Deutscher Bundestag 2016). The figure at right reveals an acceleration of insect losses after the change of the century.

In Germany, there are currently around 25,000 wind turbines installed. For some years now, it has been known that they do not provide environmentally friendly electricity, as countless birds and bats are killed by their rotor blades. But that is not all.

Wind turbines for power generation should actually produce more electricity with increasing wind strength. However, this is exactly what they often do not do, which has confused experts for years. The puzzle could already have been solved in 2001 thanks to a new study: dead insects that stick to wind turbines should be responsible for the low yield.

This was reported by a Dutch-Danish team of scientists as early as 2001 in the issue of the British journal *Nature*: "Insects can halve wind turbine power", *Nature* 2001.

Burst insects rough up the surface

At low wind speeds, burst insects start to accumulate on the leading edges of the rotor blades, the authors explain. At strong winds, the air flow can be torn off due to the now rough surface – the electricity generated drops rapidly.

Such power losses – in some cases up to half – have been noticed, for example, on California wind farms. The reason was unknown until then.

However, with specially developed reflectors glued to the rotor blades, experts were able to directly observe the effects of dead insects 20 years ago.

The "bee dying off"

Currently, the "great insect dying off" and "bee dying off" is on everyone's lips. However, neither the Greens, nor the environmental NGOs, nor the Federal Environmental Agency are addressing the insects killed by the rotor blades of wind turbines, let alone field studies are commissioned. The media is also not interested in the topic.

However, some scientists have long suspected that insects could be attracted to wind farms due to the color of the rotor blades, the heat given off by the turbines and the flashing lights on the wind turbines.

The scientists also know that turbines cause a reduction in wind speed at the hub level and cause turbulence. The turbines cause changes in wind, precipitation, temperature and evaporation. Studies have been able to prove such environmental influences up to 20 km away from a wind farm site.

A recent study by the Deutsches Zentrum für Luft- und Raumfahrt (DLR) "**Interference of Flying Insects and Wind Parks**" concludes that 24,000 tons of insects per summer could pass through the German wind farms with a total of 25,000 wind turbines. That would be about a ton of insects per wind turbine. 5% of the insects could fall victims to the turbines. So 1,200 tons of insects in total, or 50 kg of insects per wind turbine.

The DLR study further concludes that this could be relevant to the survival of insect populations within 15 years, especially for insects flying in the appropriate altitude range between 20-220 meters altitude. This is what most insects do!

Regardless, the topic will not be further discussed and silenced. So also last night in the public German TV channel ARD.

Yesterday evening, the "great dying off of insects" was discussed at the talk show "Maischberger" in the ARD. The invited guests included, among others, the meteorologist and science journalist Karsten Schwanke (once a doctoral student of climate scientist and climate activist Professor Dr. Hartmut Graßel, who was the inspiration behind the famous cover of the magazine *Spiegel* that showed the Cologne Cathedral under water in 1986) and the leader of the Green Party in Bavaria Katherina Schulze (nicknamed #KerosinKatha because of her frequent travelling). Another guest was *Spiegel* author Jan Fleischhauer. Fleischhauer drew Schwanke and Schulze's attention to the effects of wind turbines on insect populations. They were jolted and asked for the source of that claim. Mr. Fleischhauer answered "google it, then you will find it". Ms. Schulze argued that one would have to locate wind turbines so that they would not be in the "entry lanes" of bats and other animals and it was long proven that the damages of climate change would be much larger than if nothing would be done about it. Mr. Schwanke agreed to this.

Mr. Fleischhauer further pointed out in the discussion that the Greens under minister Trittin had promoted monocultures and thus contributed to the insect killing.

As a reminder

Minister of Agriculture Renate Künast argued for the expansion of bioenergy in the face of rising oil prices in 2004. Rapeseed farming could make farmers the "oil sheiks of tomorrow," Künast said.

"The field will become the 21st-century oil well, the farmer will become an energy producer," minister Trittin announced in November 2005 at the International Biofuels Congress, acclaimed by lobbyists and other beneficiaries.

Mrs. Schulze and Mr. Schwanke then both shook their heads in disbelief. Ms. Schulze replied that the expansion of energy maize was not done under the Social Democrat- Green coalition, but under the government of Mrs. Merkel. So they would not bear any responsibility and the mistakes made under Mrs. Merkel must now be corrected.

Ms. Schulze suggests that organic farming should be promoted even more; who should pay for it, she could not and did not want to say. In addition, the consequential damage caused by nitrate in the groundwater would be much more expensive than if one did not act now. Mr. Schwanke underpinned this and mentioned sums in the range of one hundred million euros, which are low compared to the approximately 35 billion euros, which the energy transition costs every year.

Nevertheless, the expansion of wind power will continue and it is hoped to get the problem of "insect dying off" under control with organic farming. That this will not lead to the desired success, since organic farmers also use pesticides and grow monocultures and people are not willing to pay double the price of their organic foods in the stores, it is incidental and not significant. At least for the green clientele, which is among the wealthier citizens.

Full story (in German)

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