

On Jan 2, 2008 6:07 AM, Marjorie Lundquist <marlundquist@usa.net> wrote:

To Paul Doyon!

Paul, I got interested in the question of whether RF/microwave radiation was affecting birds about a dozen years ago. I searched the published literature, and there was more to be found than I had supposed, though of course there has been no definitive study done.

I got interested again 5 or 6 years ago, when a dairy farmer in western Wisconsin (USA) attended a state-sponsored meeting and claimed that animals on his farm were being adversely affected by microwave radiation from cellular phone towers. I wasn't sure he was correct, but I thought his claim ought to be taken seriously and investigated, and I knew nobody from the state would investigate, so I took on the task myself.

Although I was initially quite skeptical of his claim, I visited with an open mind, and finally concluded that he was probably correct. An adjoining farm was also having similar problems, I discovered. I managed to get the state to come out to both farm with equipment to measure microwave radiation at no cost to the farmers.

All we learned from the visit of state personnel was that the microwave radiation levels could not be detected by the instrument that the state was using, which was designed to measure radiation close to the intensity range where the existing voluntary consensus standard is located (around 10 milliwatts/square cm). This made it apparent to me that the effect of microwave radiation on these farms was coming from microwave radiation considerably lower in intensity.

This farm was surrounded by 6 or 8 cellular phone microwave transmitters, all of them at least two miles away (and one TV transmitter that was fairly close by, if I recall correctly).

I have had a growing impression for some time now that the presence of multiple transmitting sources adds to the health problems. [I have some idea, now, of how and why multiple microwave sources might be more health-damaging than a single radiation source of the same intensity as the combined intensity of multiple radiation sources, but I haven't attempted to publish anything yet. Existing standards in the USA are based on what I call a "kindergarten-level" understanding of RF radiation health effects, while the "multiple-sources-effect" is what might be called a "university-graduate-school-level" type of effect. Nobody would understand me if I tried to explain the multiple-sources effect theoretically, because they would first need to study and learn about EMF radiation health effects up through the "undergraduate-university-level", and nobody is trying to teach this at present, except me.

This is why I decided it was necessary to found an entirely new scientific discipline—one that I call "bioelectromagnetic hygiene"—that puts in place a sound scientific theory upon which scientific understanding of electromagnetic radiation health effects can be based. [Interestingly, the theoretical foundation for such a theory was laid in the very early twentieth century – all the basic theory was in place by 1940 – but since then, the part of the theory that is responsible for the very low-intensity health effects has been dropped from university – and college-level EMF courses taught to UNDERGRADUATE electrical engineers, with the result that the only health effects that undergraduate electrical engineers today have any theoretical understanding of is the simplistic high-radiation-intensity health effects! Graduate EEs do learn the full theory, I believe, but apparently none of them are involved in health effects research!]

In short, there is a lot of work to be done (in educating electrical engineers and others who claim to be "experts" in RF health effects) to get back to where we were in 1940, in terms of theoretical understanding of EMF radiation! The "multiple-radiation-sources" effect goes BEYOND what was known in 1940, which is why I call it a "university-graduate-school-level" phenomenon.

I did manage to get published in 2000 what I call an introduction to bioelectromagnetic hygiene. It is Chapter 4 in the book "Wireless Phones and Health II: State of the Science" which was published by Kluwer Academic Publishers in 2000. George Carlo edited this volume.

What I tried to do in Chapter 4 of this book was to review the electromagnetic theory that was well-understood by physicists in 1940, which undergraduate electrical engineers today understand only the very simplest part of.

If you look in past issues of the Bulletin of the American Physical Society, beginning in 2003, and look up my name in the author index, you will find the abstracts of my papers. I've addressed this issue in the years 2003–2006.

OK, now back to birds, and the farmers in western Wisconsin that I visited.

The state of Wisconsin had an instrument for measuring microwave radiation that was developed on the basis of what electrical engineers have been teaching during the last half of the 20th century (based on what I call a "kindergarten-level understanding" of the health effects problem). We are handicapped in doing the research that needs to be done, because it requires instrumentation that is not readily available.

This is why all I can really do is address the theory. It will be expensive to do experimental research, because of the need for equipment that is not readily available, and probably still needs to be developed.

Now, when I visited these two farms in western Wisconsin, around the time that the state personnel came out and made their measurements, both these farmers remarked that they didn't like to spend time outdoors in the evening, like they did in other years, because the insects were so bad that year.

Now I remember what summer evenings were like when I was a child. There would be lots of insects around, but there would also be insect-eating birds, and sometimes even bats, flying through the evening sky, eating the insects that were present in profusion.

So I commented that usually there were birds that would feast on the insects, and the two farmers agreed, but said they hadn't seen any insect-eating birds that year, which was probably why the insects were so much worse than in previous years.

That set me to wondering whether the complaints of microwave radiation health effects on these two farms might have some relationship to the curious absence of insect-eating birds. So I reviewed the literature on birds and RF radiation.

One thing I learned is that flying stresses a bird physiologically to the maximum. What this means is that even a small extra physiological stress on a flying bird is highly likely to render it unable to fly long distances, and maybe unable to fly at all.

Many birds are migratory, so that loss of an ability to fly long distances would disrupt their migratory capability, possibly leading to death. And an inability to fly at all would quickly lead to death for most birds, as they would be vulnerable to predators on the ground. Birds that eat insects while in flight—like swallows—would quickly starve to death if they couldn't fly.

Every time I hear a report of birds falling from the sky, I suspect RF/MW radiation.

So I consider that flying birds are extremely vulnerable to RF/microwave radiation.

It may be that what affects them most are **MULTIPLE MICROWAVE RADIATION SOURCES AT THE SAME FREQUENCY.**

We have had microwave radiation in the urban US environment since the 1950s, which is when television really "took off". Television broadcasts at microwave frequencies, which means we have had microwave radiation in the urban environment (where most TV transmitters are located) for half a century. And birds have NOT been "knocked out of the sky" by the microwave radiation from TV transmitters. [If this HAD been occurring, it would have been in an urban area and residents would have noticed it and reported it promptly. That has NOT happened.]

The FCC regulates RF/MW transmitters in the USA. For television transmitters, the FCC has wanted to make sure that two different TV transmitters using the same frequency would NOT interfere with each other, so the FCC has made its frequency allocations so as to ensure that the "coverage area" of one TV transmitter does NOT overlap with the coverage area of another TV transmitter operating at the same, or nearly the same, frequency. What this means is that if a map were made showing the "coverage area" of all the different TV transmitters operating within a certain narrow frequency band by circles of a certain radius centered on each different transmitter, all these circles would be "disjoint": they would NOT overlap.

The reason that the "coverage areas" of the different TV transmitters do not overlap is because the FCC plans it this way.

Now let's consider a cellular phone system. These systems operate at microwave frequencies, too.

Do the effective service areas around each of the individual fixed microwave transmitters of a given cellular phone system overlap? Yes, indeed they do! Overlap is essential, if calls from a mobile source are not to be "dropped" by one transmitter before the neighboring transmitter can "take over" the job of handling the call.

So we have a system of TV transmitters operating at microwave frequencies, designed by man so that their individual service areas are disjoint--non-overlapping--so as to avoid unwanted interference. And we also have multiple systems of radio-telephone system microwave transmitters, with each system having many transmitters--each at the center of its own cell--operating at the same microwave frequency scattered over the landscape, with the service areas of these transmitters DESIGNED TO OVERLAP so that a cellular phone call from a mobile source can be handed off from one cell to the next as the source moves.

We have had TV transmitters in the USA with NON-OVERLAPPING service areas in profusion since the 1950s, with no evidence of an adverse effect on birds.

We have had cellular phone systems WITH OVERLAPPING SERVICE AREAS in the USA since about 1990. The reports of birds dropping out of the sky have all occurred since 1990.

The difference between these two systems of microwave transmitters appears to be the overlapping service areas of the individual transmitters of the cellular phone systems.

Now one of the things that initially puzzled me, when I first visited that farmer who complained of the microwave radiation effects on his farm, was that his farm was quite some distance away from the cellular phone transmitters in the area! I had expected that a transmitter would have to be nearby, if it was going to affect his farm.

But it makes sense that his farm was affected, if I think of it in terms of being located in an area of overlap between two or three almost equidistant transmitters operating at the same frequency. That is where a "multiple radiation sources at the same frequency" effect would be a maximum (because the radiation intensity from each different source at a given frequency needs to be about the same)! And I suspect that his farm may have been situated at a "region of overlap" for MORE THAN ONE cellular phone system! [This would be because of the local geography; these transmitters are preferentially located on top of

hills. This means that the transmitters of different systems tend to be located close together—sometimes on the same supporting structure! When two cellular phone systems have their transmitters located close to each other, the "region of overlap" for the two systems will tend to coincide, too.]

My current working hypothesis is that birds are most strongly affected by microwave radiation in these "regions of overlap" of cellular phone systems.

That's all I have to say at this time about this topic.

Feel free to disseminate this message as widely as you wish, Paul.

Marjorie Lundquist, Ph.D.
Bioelectromagnetic Hygienist

From: Paul Doyon <doyon.paul@gmail.com>
Sent: Jan 25, 2008 18:08
To: EMF Refugee
Subject: Discussion: Effects of RF/microwaves on birds Marjorie,

Thank you for this mail. I will pass it on and I am sorry for responding so late with this – I am swamped daily with so many emails from so many people it really takes quite an effort to keep up with everything. But I do sincerely appreciate the correspondence. This is such a serious problem and it is sad that the majority of people out there are not considering it such. "Wake up people! Wake up!" is what I want to say.

regards,

paul doyon

----- Forwarded message -----

From: Mona
Date: Jan 26, 2008 6:05 AM
Subject: Re: Discussion: Effects of RF/microwaves on birds
To: Paul Doyon <doyon.paul@gmail.com>

Dear Paul

Last year I was contacted by a milk farmer who lived in an area with lots of forests that was quite sparsely populated in the western part of Sweden. He was unhappy that a mobile phone mast was erected approx 300 m in front of his beautiful house. Not only did the mast make the landscape look less beautiful, but since the mast was put there he had serious problems with his milk producing cows: they produced less, they were reluctant to eat like before and some cows got so sick that he had to kill them. An increasing number of cows didn't get pregnant and some had lost their calves. I went to see him and measured the radiation. I was surprised by the very low levels, approx. some microW/m². The mast was a 3G-mast. The farmer told me that the cows seemed to feel better and were eating better during a week when he took them inside the farmhouse.

Six months later the farmer told me he sold all his cows. He lost too much money with all their health problems.

Regards
Mona

----- Forwarded message -----

From: Andy Davidson <andy.davidson1@ntlworld.com>
Date: Jan 26, 2008 7:44 AM
Subject: Re: Discussion: Effects of RF/microwaves on birds
To: Paul Doyon <doyon.paul@gmail.com>

Paul

This is a really important area. Please can you pass this message on.

I think the overlapping is not quite what it seems. GSM (for example, though I discovered this initially regarding TETRA in the UK) has cells at separated carrier frequencies. However the digital structure, the pattern frequencies at ELF are synchronized in order to operate between cells. This can therefore create standing waves and interference patterns. In the case of TETRA, which is a constant synchronized signal, these energies persist.

Now let's turn to the scalar or longitudinal EM wave (it not just the scary Tom Bearden stuff: it is a real phenomenon – turn to Konstantin Meyl for some clear exposition of this). What happens here is that two synchronized or resonant sources will create a linear field line. The nature of this is, in my view, very similar to geomagnetic grids or ley lines. Again, these are no more "new age" than Schumann resonance, and they can be detected, traced and followed.

Now cross two of these scalar lines and you will create a new phenomenon, which I am tending to think is akin to geopathic stress points, or vortices.

I have a log of "events" occurring at these points, and I and other people with biolocation skills (dowsers – but a term that is misconstrued) can map these lines. The work of Cyril Smith on scalar waves and quantum phase shifts across the body make sense here, and also suggest strongly that the zone of risk around a mast or EM source will be toroidal. So distance and the square of the distance effect for power density, may have nothing at all to do with safety, but rather a toroidal zone related to frequency.

What this means is that we have multiple effects, one linear and at crossing points, the other toroidal and frequency related, as well as perhaps the third, of plain proximity.

A conversation that we must try to pursue at a level of physics, not engineering knowledge.

I would like to be in touch with more people able and willing to engage with this, because I feel it is very important to gain a better understanding. If the above is correct in any way our picture of what is going on and why is seriously flawed. The mapping of masts and illness may not be what we are currently looking for or expecting.

best regards

Andy Davidson
