

# 5G Technology vs. Science and Freedom of Choice



5G is the latest generation of wireless technology utilizing radiofrequency (RF) radiation. It adds higher frequencies in the millimeter and sub-millimeter range to transmit large amounts of data, but it works best over short distances, requiring close proximity to users and a dense deployment of small cell antennas in neighborhoods across America.

- Human exposure guidelines for RF radiation used by the Federal Communications Commission (FCC) are more than 25 years old and address the thermal effects (heating of tissue), not other biological effects at non-thermal levels which have now been firmly established. The guidelines have been under intense scrutiny by the research community, and the subject of several lawsuits, with no resolution, creating an uncertain regulatory environment.
- Over the last 20 years a robust body of independent science has emerged, showing significant biological impacts, including cancer, neurological and cognitive harm, heart abnormalities, reproductive effects and microwave sickness among other serious health problems. Populations especially at risk include pregnant women, children, the elderly, individuals with implanted medical devices, and those with cardiac or neurological problems.\*
- More than 250 medical and public health professionals have signed the International EMF Scientists Appeal, urging government officials to consider the latest science on RF radiation and human health and harm to animals and plants.
- Freedom of choice is a fundamental American value. The FCC and the telecom industry should not force American citizens to endure involuntary exposure to powerful RF radiation 24/7 in their own homes or apartments.
- Major insurance companies have refused to insure telecoms against losses from personal liability claims related to exposure to RF radiation. Swiss Re, the second-largest reinsurance company in the world, has classified 5G as a "high impact" liability risk due to potential adverse health impacts.
- Local governments across the country are busy strengthening their municipal codes to protect their communities. Many are rejecting applications for 5G "small cell" antenna installations near homes and schools on the basis of aesthetics, safety, privacy, property values, security, lack of insurance and a failure by applicants to prove a significant gap in personal wireless service coverage.



*Children are especially vulnerable to wireless radiation*

\*A digest of recent independent scientific studies documenting biological harm from exposure to RF radiation can be found at [www.AmericansForResponsibleTech.org/scientific-studies](http://www.AmericansForResponsibleTech.org/scientific-studies)

## 5G, Small Cells & Cell Towers Can Drop Property Values

Would you buy a home with cell antennas outside the bedroom window?



Legal filings by cities and municipalities to the FCC highlight how small cell deployment could impact aesthetics and property values.

**"many deployments of small cells could affect property values, with significant potential effect..."**

— Reply Comments of Smart Communities Siting Coalition (local governments and associations representing 1,854 communities) 4/7/2017, Docket No. 16-421, April 7, 2017

**"Considering that the Smart Communities' prior filings show that the addition of facilities of this size diminish property values, it is strange for the Commission to assume that approval can be granted in the regulatory blink of an eye...."**

**"...allowing poles to go up in areas where poles have been taken down has significant impacts on aesthetics (not to mention property values)."**

— *Ex Parte* Submission of Smart Communities Letter to Ms. Marlene H. Dortch, Secretary, Federal Communications Commission, September 19, 2018

**"While the magnitude of the impact varies, the studies uniformly indicate that there is a significant impact on residential property values from installation of cell phone towers..."**

**— Report and Analysis by David E. Burgoyne, ASA, SR/WA Certified General Real Estate Appraiser to the FCC in Docket 16-421**

*PDF is hyperlinked. More on property values at [ehtrust.org](http://ehtrust.org)*

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# What 5G Could Mean for Property Values in Your Town



4 bdr, 2 bath, EIK, LR, FR w/fireplace, all new appliances, great 5G wireless reception!

**\$ 370,000**



4 bdr, 2 bath, EIK, LR, FR w/fireplace, all new appliances, fully wired with fiber optic!

**\$ 425,000**

Property owners and real estate professionals are right to be worried about the value of homes and apartments near wireless antennas.

According to a survey published in Realtor Magazine, 94% of home buyers said they are less interested and would pay less for a property located near a cell tower or antenna, and 79% of the respondents said they would never purchase or rent such a property.\*

Americans have a right to protect their property values and to the quiet enjoyment of their homes without constant involuntary exposure to radiation from nearby wireless antennas. That's why many real estate professionals are joining the effort to push back against the deployment of unnecessary "small cell" 4G/5G antennas in our neighborhoods.

To learn more about the science and why 5G antennas may significantly reduce property values, please visit [AmericansForResponsibleTech.org](http://AmericansForResponsibleTech.org).



Americans for  
Responsible  
Technology

[AmericansForResponsibleTech.org](http://AmericansForResponsibleTech.org)

\* "Cell Towers, Antennas Problematic for Buyers" REALTOR Magazine, July 25, 2014

# PROTECT THE BEES

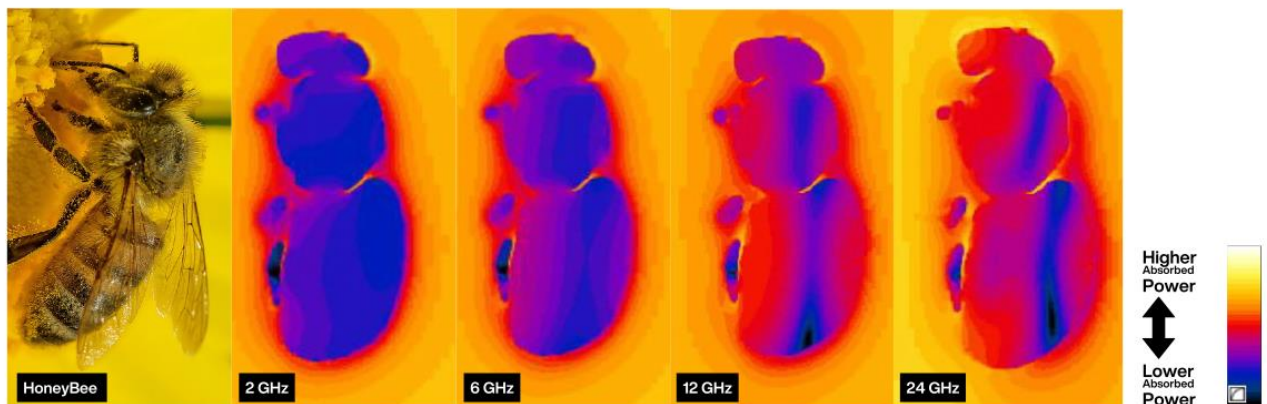
Growing science on insects links cell tower and wireless radiation exposure to impacts on:

- Colony Strength
- Immune System
- Reproduction
- Homing Ability (*ability to come home*)



## 5G's Higher Frequencies Increase Honeybee Exposure

Research Finds Higher Radiation Absorption Into Brain and Vital Organs



**Honeybee Exposure to Wireless: Lighter Color Equals Higher Absorbed Power**

Image: "Exposure of Insects to Radio-Frequency Electromagnetic Fields From 2 to 120 GHz" Scientific Reports by Thielens et al. (2018)



# How 5G Could Dramatically Alter Our Natural World

Scientists have proven that radio frequency (RF) radiation can be absorbed by insects, raising internal temperatures, interfering with reproduction or triggering other responses. This has dramatic implications for our natural world as purveyors of 5G technology push ahead with their plans to blanket the country with powerful 4G/5G antennas.



Honeybees are critical to our nation's food supply. They pollinate our crops, increasing yields and improving quality crops. In fact, many of the foods we eat every day would not exist without the pollinating work of honeybees at bloom time.

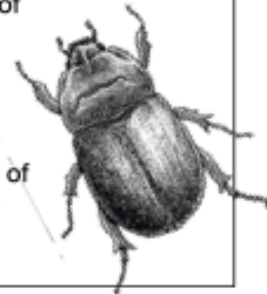


Scientists have found that insects like honeybees can be dramatically affected by high frequencies associated with 5G. These higher frequencies can raise the bee's internal temperature, leading to changes in behavior and physiology, with unknown and unpredictable results.

Even lower frequencies of RF radiation can have a significant impact on the behavior of bees. Studies have shown that signals from ordinary cell phones in close vicinity to a hive can cause bees to sense an impending emergency as if the colony is under attack.

RF radiation can disrupt the magnetic "compass" that many migrating birds and insects use, causing disorientation and possibly disrupting migration patterns.

More than fifty percent of beetle pupae exposed to RF radiation failed to develop normally compared to a control group, resulting in inconsistent maturation of body parts. Twenty-five percent of the exposed beetles died.



RF radiation is routinely used to kill insects in wood and wood products by exposing them to certain high frequencies that resonate in their bodies, causing dielectric heating and death.



*Please see reverse for scientific citations.*

Telecom engineers may know how their new technologies work, but what they ***don't*** know is how those new technologies will affect our natural world.

**More study is urgently needed** before proceeding with the widespread deployment of powerful new 4G/5G antennas.



# Environmental Groups Calling For Caution on 5G & Wireless

Numerous environmental groups have written letters and appeals cautioning that the unfettered proliferation of 5G and new wireless networks will result in environmental impacts such as increased energy consumption, damage to the tree canopy, and harm to pollinators and wildlife.

**"Scientists are now realizing that non-ionizing radiation also can cause biological effects in all systems of the body and in wildlife, including changes in DNA."**

Natural Resources Defense Council

**Natural Resources Defense Council:** Submitted an Amicus Brief in EHT et al v. the FCC lawsuit documents critical regulatory gaps regarding environmental effects.

**Environmental Working Group:** Published research on the need for FCC limits to be hundreds of times stronger to protect children and sent letters to lawmakers in opposition to 5G streamlining laws.

**Berkshire-Litchfield Environmental Council:** Submitted an Amicus Brief on the environmental effects and lack of adequate regulations.

**Greenpeace France:** Passed a position statement on 5G as creating "digital pollution" that will increase carbon emissions, increase e-waste, strip the earth of natural resources and contribute to human tragedies on a global scale.

**Ecologists in Action:** Passed a position on 5G that calls for precaution due to numerous environmental issues.

**Green Party, California:** Issued a statement on 5G recommends adopting recommendations of New Hampshire State 5G Commission to reduce wireless exposures and promote safer alternative technologies.

**Sierra Club Washington DC:** Testified that street trees could be at risk from the proliferation of 5G small cells and equipment.

**Sierra Club California:** Opposed streamlining 5G "small cell" installations because they not only would create aesthetic blight, but also increase RF radiation levels.

**Los Cerritos Wetlands Task Force of the Sierra Club Angeles:** Opposed 5G cell tower referencing studies indicating RF radiation could harm birds and insects. They called for an environmental impact report on health and biological impacts from 5G towers in the city.

**Sierra Club California and Nevada Desert Committee Desert Report:** Includes a chapter with information on 5G's "immense infrastructure that will certainly be costly not only in financial terms but also in energy costs."

**Extinction Rebellion Belgium:** Protested the increased energy consumption of the large-scale deployment of the 5G "which is unacceptable while we are currently fighting against global warming."

**Extinction Rebellion Orléans: France:** Engaged in numerous actions protesting the ecological impacts of 5G include posters and dramatic protests.