

TO: Thurston County Development Services  
2000 Lakeridge Drive SW  
Olympia, WA 98502  
Phone (360)-754-4023  
Fax (360)-754-2939

Date: August 10, 2014  
Attention: Robert Smith

RE: Presubmission Conference 14 109668 VI, OL0757 Clear Lake, Parcel 23505000000,

Dear Mr. Smith:

A notice regarding a balloon test for a proposed 100' tall communication tower for AT&T mobility located on Weyerhaeuser Property was sent to residents in the Clear Lake area by Noah Grodzin of CascadiaPM, LLC. A growing number of residents of Clear Lake and surrounding areas have reviewed this project proposal and are submitting the following comments to be made a part of the public record for this proposal and this parcel. As the controversy over the issue of the harmful effects of wireless communication is really a global issue, concerns about the proposed siting of this tower is spreading beyond the local area to be served by this tower as there are already over 1.9 million existing towers and antennas in the United States.

- 1) On page 2 of the Supplemental Application Presubmission Conference for this project, under Critical Areas, it was marked that there were no water or other critical areas on or within 300 feet of the property. Although the Thurston County Parcel information for this lot lists wetlands as unknown, it also does indicate that wetland buffers, critical buffers, and Mazama Pocket Gopher Indicator Soils may be present on this 531+ acre parcel. Attached is a 5 page Priority Habitat and Species Report generated by the Washington State Department of Fish and Wildlife that identifies 7 aquatic habitat areas, Endangered and Threatened Northern Spotted Owl Management Buffer, a Wood Duck breeding area, and 20 occurrences of the Endangered Taylor's Checkerspot Butterfly all located within this parcel. Based upon this data it is clear that there are Critical Areas located within this parcel.
- 2) According to United States Fish and Wildlife Service Guidance on the Siting, Construction, Operation and Decommissioning of Communications Towers taken from <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>, "The construction of new towers creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. Communications towers are estimated to kill 4-5 million birds per year, which violates the spirit and the intent of the Migratory Bird Treaty Act and the Code of Federal Regulations at Part 50 designed to implement the MBTA. Some of the species affected are also protected under the Endangered Species Act and Bald and Golden Eagle Act." Based upon our observations of the Clear Lake area, the following guidance applies to this site.
  - a) "#4 Towers should not be sited in or near wetlands, other known bird concentration areas (e.g., state or Federal refuges, staging areas, rookeries), in known migratory or daily movement flyways, or in habitat of threatened or endangered species. Towers should not be sited in areas with a high incidence of fog, mist, and low ceilings."
  - b) "#8 If significant numbers of breeding, feeding, or roosting birds are known to habitually use the proposed tower construction area, relocation to an alternate site should be recommended."

Both Clear Lake and Elbow Lake located north and west of this parcel together with the numerous wetland areas both within and surrounding this parcel experience regular migratory bird activity.

- 3) The attached 7 page Priority Habitat and Species Report generated by the Washington State Department of Fish and Wildlife for the Clear Lake and Elbow Lake areas identifies a Bald Eagle Nest and two breeding area management buffers, two Cutthroat Trout occurrences, Common

Loon breeding area, Threatened Endangered Northern Spotted Owl management buffer, Osprey Nest, 26 aquatic habitat areas, Wood Duck breeding area, and 10 occurrences of the Endangered Taylor Checkerspot Butterfly. There are also a number of other species such as Canada Geese, Great Herons, and others that are at times present in these areas but are not listed on the Priority Habitat and Species Report. A letter from the Department of Interior to the National Telecommunications and Information Administration of the Department of Commerce dated February 2014 identifies "In addition to the 147 Birds of Conservation Concern (BCC) species, the FWS has listed an additional 92 species as endangered or threatened under the Endangered Species Act. Together with the bald and golden eagle, this represents 241 species of birds whose populations are in trouble or otherwise merit special protection, according to the varying criteria of these lists." This Department of Interior letter goes on to state that the First Responder Network Authority proposal lacks provisions necessary to conserve migratory bird resources, including eagles both due to migratory bird collisions with the towers as well as due to non-ionizing electromagnetic radiation emitted from the towers. A copy of the letter can be viewed here. [http://www.ntia.doc.gov/files/ntia/us\\_doi\\_comments.pdf](http://www.ntia.doc.gov/files/ntia/us_doi_comments.pdf)

The following statements are taken from the EMR Policy Institute, "Current Federal Communications Commission RF safety standards are based on protection of humans against thermal effects from high power levels of RF radiation. These FCC radiation limits do not protect people from adverse biological effects of long term RF exposure or take into account the impact on children or other especially vulnerable citizens. Legal advocates argue that FCC RF safety standards do not extend to harmful effects on animals or wildlife." These comments can be found here. [http://www.emrpolicy.org/public\\_policy/siting\\_zoning/index.htm](http://www.emrpolicy.org/public_policy/siting_zoning/index.htm) Within the Department of Interior letter referenced previously, "Radiation studies at cellular communication towers were begun circa 2000 in Europe and continue today on wild nesting birds. Study results have documented nest and site abandonment, plumage deterioration, locomotion problems, reduced survivorship, and death (e.g., Balmori 2005, Balmori and Hallberg 2007, and Everaert and Bauwens 2007). Nesting migratory birds and their offspring have apparently been affected by the radiation from cellular phone towers in the 900 and 1800 MHz frequency ranges- 915 MHz is the standard cellular phone frequency used in the United States. However, the electromagnetic radiation standards used by the Federal Communications Commission (FCC) continue to be based on thermal heating, a criterion now nearly 30 years out of date and inapplicable today. This is primarily due to the lower levels of radiation output from microwave-powered communication devices such as cellular telephones and other sources of point-to-point communications ..... in laboratory studies,..... concerns about impacts of low-level, non-thermal electromagnetic radiation from the standard 915 MHz cell phone frequency on domestic chicken embryos- with some lethal results ....Radiation at extremely low levels (0.0001 the level emitted by the average digital cellular telephone) caused heart attacks and the deaths of some chicken embryos..." A copy of this letter can be viewed here. [http://www.ntia.doc.gov/files/ntia/us\\_doi\\_comments.pdf](http://www.ntia.doc.gov/files/ntia/us_doi_comments.pdf)

- 4) According to the Bioinitiative Report Updated in March 2014 "Public safety standards are 1,000 – 10,000 or more times higher than levels now commonly reported in mobile phone base station studies to cause bioeffects.... Human sperm are damaged by cell phone radiation at very low intensities in the low microwatt and nanowatt/cm<sup>2</sup> range (0.00034 – 0.07 uW/cm<sup>2</sup>). There is a veritable flood of new studies reporting sperm damage in humans and animals, leading to substantial concerns for fertility, reproduction and health of the offspring (unrepaired de novo mutations in sperm). Exposure levels are similar to those resulting from wearing a cell phone on the belt, or in the pants pocket, or using a wireless laptop computer on the lap. Sperm lack the ability to repair DNA damage.... Magras and Xenos (1997) reported irreversible infertility in mice after five (5) generations of exposure to RFR at cell phone tower exposure levels of less than one microwatt per centimeter squared (µW/cm<sup>2</sup>). Several thousand scientific studies over four decades point to serious biological effects and health harm from EMF and RFR. These studies report genotoxicity, single-and double-strand DNA damage, chromatin condensation, loss of

DNA repair capacity in human stem cells, reduction in free-radical scavengers (particularly melatonin), abnormal gene transcription, neurotoxicity, carcinogenicity, damage to sperm morphology and function, effects on behavior, and effects on brain development in the fetus of human mothers that use cell phones during pregnancy. Cell phone exposure has been linked to altered fetal brain development and ADHD like behavior in the offspring of pregnant mice.... Many research studies show that very low intensity exposures to RFR can affect the blood-brain barrier (BBB) (mostly animal studies).... A single 2-hr exposure to cell phone radiation can result in increased leakage of the BBB, and 50 days after exposure, neuronal damage can be seen, and at the later time point also albumin leakage is demonstrated. The levels of RFR needed to affect the BBB have been shown to be as low as 0.001 W/kg, or less than holding a mobile phone at arm's length. The US FCC standard is 1.6 W/kg; the ICNIRP standard is 2 W/kg of energy (SAR) into brain tissue from cell/cordless phone use. Thus, BBB effects occur at about 1000 times lower RFR exposure levels than the US and ICNIRP limits allow. .... On a precautionary public health basis, a reduction from the BioInitiative 2007 recommendation of 0.1 uW/cm<sup>2</sup> (or one-tenth of a microwatt per square centimeter) for cumulative outdoor RFR down to something three orders of magnitude lower (in the low nanowatt per square centimeter range) is justified. A scientific benchmark of 0.003 uW/cm<sup>2</sup> or three nanowatts per centimeter squared for 'lowest observed effect level' for RFR is based on mobile phone base station-level studies. Applying a ten-fold reduction to compensate for the lack of long-term exposure (to provide a safety buffer for chronic exposure, if needed) or for children as a sensitive subpopulation yields a 300 to 600 picowatts per square centimeter precautionary action level. This equates to a 0.3 nanowatts to 0.6 nanowatts per square centimeter as a reasonable, precautionary action level for chronic exposure to pulsed RFR."

- **mW = milli-Watt = 1/thousandth Watt = 10<sup>-3</sup> Watt**
- **µW = micro-Watt = 1/Millionth Watt = 10<sup>-6</sup> Watt**
- **nW = nano-Watt = 1/Billionth Watt = 10<sup>-9</sup> Watt**
- **pW = pico -Watt = 1/Trillionth Watt = 10<sup>-12</sup> Watt**

The precautionary level recommended by the BioInitiative Report is 0.3 to 0.6 pico Watts/cm<sup>2</sup> = 0.3 to 0.6 x 10<sup>-12</sup> Watts/cm<sup>2</sup> = 0.0000003 to 0.0000006 uW/cm<sup>2</sup> . The 1996 FCC PCS Standard for public exposure of 1000 uW/cm<sup>2</sup> is 3.3 to 1.7 million times higher than the current recommended precautionary level of the BioInitiative Report. If you think reducing current public exposure by a factor of a million is extreme, it is noteworthy to consider that "EMF efficiently harms cells at a billion times lower levels that conventional heating." A copy of the 2014 revised BioInitiative Report can be found here.

[http://www.bioinitiative.org/report/wp-content/uploads/pdfs/section\\_1\\_table\\_1\\_2012.pdf](http://www.bioinitiative.org/report/wp-content/uploads/pdfs/section_1_table_1_2012.pdf)

Several interesting points taken from the Fall 2008 edition of the American Trial Lawyer are as follows: "More than 1000 peer-reviewed, published studies form the basis for establishing the link between mobile phone use and a variety of health problems..... The expanding telecommunications and internet industries have perpetrated a dangerous fraud upon the public, withholding information that would expose the risk that cell phones pose to humans and the environment". Evidence of the true health risks of wireless technology can be seen in the "insurance carriers' decision to exclude health risk claims from product liability policies marketed to the wireless industry. Beginning in 2002, major insurers excluded health risks from cell phone usage as a covered loss under policies sold to the industry..... Because the FDA granted the industry a variance on the requirement for premarket safety, it is unlikely that the FDA will take further steps at protecting the public..... Further, the cell phone industry routinely misrepresents as safety standards the emission guidelines for wireless radiation promulgated under the Telecommunications Act of 1996 and administered through the FCC. The FCC has no safety authority. Thus no safety standards exist to protect consumers from the dangers of cell

phones and other wireless devices.....In the absence of sound Federal Guidelines or vigilant regulation, Litigation is the only option to compensate victims and deter the continued disingenuous and dangerous behavior of the wireless industry". A copy of this article from the American Trial Lawyer Magazine can be found here:  
<http://d.scribd.com/docs/3zkbngq25hwwnvgmqm.pdf>

The Fall 2011 edition of the Trial Lawyer Magazine contains an article about the warning signs of radiation and cell phones which states "In May 2011 the World Health Organization (WHO) .... elevated cell phones to Group 2B in its internationally recognized rankings of carcinogens .... According to the WHO, cell phones are possibly carcinogenic to humans, now being classified alongside the pesticide DDT, lead, chloroform and gasoline engine exhaust.....children using cell phones are exposed to RF energy rates two times higher in the brain and up to 10 times higher in the bone marrow of the skull compared to adults' use..... because their tissue normally contains a larger number of ions and thus has higher conductivity.....With its five billion subscribers, massive marketing presence, high degree of social acceptance, irresistible gadgets, unrivaled convenience and habit-forming pastime, the cell phone industry has reached limits well beyond "Big Tobacco.... it has denied the existence of any danger and has spent millions of dollars trying to discredit the research that points to problems regarding safety — all the while registering patents responsive to the dangers associated with cell phone use..... A good student of history might find striking parallels emerging from the position put forward today by the cell phone industry as compared to the earlier actions of the industries that produced and, for many years, protected tobacco and asbestos through coordinated efforts to stymie research and constantly deny the hazards truly presented by products to which the consuming public had become attached". A copy of this Fall 2011 article from the Trial Lawyers Magazine can be found here:  
<http://www.thenationaltriallawyers.org/the-trial-lawyer-magazine/archived-issues/>

Another website created by lawyers <http://www.anticelltowerlawyers.com/links/expert-studies.html> provides a comprehensive list of expert studies that document adverse health effects of cell towers including a "German Study of 2004 - The Influence of Being Physically Near to a Cell Phone Transmission Mast on the Incidence of Cancer...Ten year study conducted from 1994-2004, revealed that living within 400 meters of a Cell Tower increased the risk of developing cancer by three hundred percent (300%)... The Israeli Study of 2004 - Increased Incidence of Cancer Near a Cell-Phone Transmitter Station (a Cell Tower)...Study indicated an association between increased incidence of cancer and living in proximity to a Cell Tower. Those living near a Cell Tower are 4.15 times more likely to develop cancer."

A list of over 600 scientific studies that link the effects of RF to harmful health affects can be found here. <http://www.marinproject.org/studies.html> A tabulation of some of the known adverse symptoms and health effects of wireless technology presented on the Marin Project Site <http://www.marinproject.org/> is provided as follows:

TOP 10 DISEASES	TOP SYMPTOMS	BIO-EFFECTS
<ul style="list-style-type: none"> <li>▪ Alzheimer's Disease</li> <li>▪ Autism</li> <li>▪ Brain Cancers and Tumors</li> <li>▪ Breast Cancer</li> <li>▪ Depression</li> <li>▪ Heart Disease</li> <li>▪ Leukemia/Blood Cancers</li> <li>▪ Lymphoma</li> <li>▪ Melanoma</li> <li>▪ Prostate Cancer</li> </ul>	<ul style="list-style-type: none"> <li>▪ Attention Deficit Disorder (ADD)</li> <li>▪ Chronic stress</li> <li>▪ Headaches</li> <li>▪ Impotence</li> <li>▪ Learning disorders</li> <li>▪ Memory Loss</li> <li>▪ Reaction time changes</li> <li>▪ Sleep disturbances</li> <li>▪ Suicide</li> <li>▪ Testosterone reductions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Birth Defects/Miscarriages</li> <li>▪ Chromosome Damage</li> <li>▪ DNA/ Genetic Damage</li> <li>▪ Impaired Immune System</li> <li>▪ Permeates blood brain barrier</li> <li>▪ Altered blood pressure/heart rhythms</li> <li>▪ Reduced Melatonin/Serotonin</li> <li>▪ Calcium Ion changes</li> <li>▪ Disrupts Pineal Gland</li> <li>▪ Rise in Triglycerides/Cholesterol</li> </ul>

It has been estimated that 70 out of the top 100 human food crops, which supply about 90 percent of the world's nutrition, are pollinated by bees. "The electromagnetic waves emitted by mobile phone towers and cellphones can pose a threat to honey bees, a study published in India has concluded. The electromagnetic waves emitted by the towers crippled the "navigational skills" of the worker bees that go out to collect nectar from flowers to sustain bee colonies, said Dr. Sainuddin Pattazhy, who conducted the study, ..... He found that when a cell phone was kept near a beehive, the worker bees were unable to return, leaving the hives with only the queens and eggs and resulting in the collapse of the colony within ten days." A copy of this report can be viewed here. <http://www.physorg.com/news170920128.html>

5) SUMMARY AND CONCLUSIONS:

- There are numerous species of plants and animals both listed as Endangered as well as listed as Birds of Conservation Concern, wetland habitats and other critical areas that will be adversely affected not only by the wireless radiation transmitted by this proposed tower but also physically by the presence of the tower itself within the migratory flight patterns of these animals. We demand that if this project goes forward, a full Environmental Impact Statement be prepared for this site for this installation. We will not accept the FCC's NEPA process for evaluation and mitigation of adverse affects.
- Damaging effects of wireless technology include but are not limited to: irreversible sterility (extinction), disease, shortened life span, impaired mental capacity, and will if the proliferation of this technology continues likely result in a collapse of the food supply, causing widespread famine and starvation. The insurance companies have like Pontius Pilot already washed their hands of liability by refusing to provide coverage to wireless providers for adverse health effects of wireless technology. The Lawyers have already pointed out that given the current lack of effective Government Regulations to protect consumers and the environment, litigation is the only option to compensate victims and deter the continued disingenuous and dangerous behavior of the wireless industry.
- Our society has been through episodes of technological adolescence before with Tobacco, Asbestos, Fluoroscopes, Radium Clock Faces, DDT, thalidomide, dioxin, benzene, Agent Orange, etc. There is a constant stream of advertising on television for lawsuits against bad drugs and bad medical devices approved by the Food and Drug

Administration to remind us all of the ineffectiveness of the government to protect the health of its citizens.

- The continued actions of Federal, State, and County Governments to approve the installation and proliferation of wireless technology so that wireless providers achieve their goal of 100% coverage of land within this country with their technology without any meaningful consideration of the adverse health effects that this technology has been documented to cause to all inhabitants (life forms) of this country is unconstitutional. The most fundamental and sacred principals of the US Constitution and State Constitutions is that the governments created by the people are to be strictly limited by those constitutions and that governments so created are required above all else to protect the unalienable rights to life, liberty, and the pursuit of happiness of the people who allow these governments to exist. Wireless technology creates irreversible sterility which is extinction of life. Unlike the tobacco-free zones we now enjoy in public spaces, there is no consideration of peoples free choice not to be radiated by wireless service providers and thus live a healthy life therefore there is no protection of the liberty to choose to live a healthy life. Wireless technology creates disease, premature aging, shortened life, degrades the quality of life and soon will add starvation to the list of pestilence caused by this technology and all of this is destructive to the pursuit of any meaningful happiness in life as they lead to a destruction of all life. One of the most landmark cases decided by the US Supreme Court which established the doctrine of judicial review was Marbury v. Madison (1803) “ the particular phraseology of the Constitution of the United States confirms and strengthens the principle, supposed to be essential to all written Constitutions, that a law repugnant to the Constitution is void, and that courts, as well as other departments, are bound by that instrument”, a full copy of that decision is available here: <http://supreme.justia.com/cases/federal/us/5/137/case.html> . The definition of Weapons of Mass Destruction (WMD) taken from a Federal Government web site [http://www.fbi.gov/about-us/investigate/terrorism/wmd/wmd\\_fags](http://www.fbi.gov/about-us/investigate/terrorism/wmd/wmd_fags) “are defined in US law (18 USC §2332a) as: ... (C) any weapon involving a biological agent, toxin, or vector (as those terms are defined in section 178 of this title)(D) any weapon that is designed to release radiation or radioactivity at a level dangerous to human life. WMD is often referred to by the collection of modalities that make up the set of weapons: chemical, biological, radiological, nuclear, and explosive (CBRNE). These are weapons that have a relatively large-scale impact on people, property, and/or infrastructure.” On page 10 of the Criminal and Epidemiological Investigation Handbook <http://www.fbi.gov/about-us/investigate/terrorism/wmd/criminal-and-epidemiological-investigation-handbook> the term biological agent as it refers to WMD’s is further defined as it “includes any weapons involving a disease organism. However, it does not require the actual use of a biological agent. Also, it does not require that the biological agent be a select agent only that that agent is capable of causing biological malfunction, disease, or death in a living organism (Title 18 U.S.C. Section 178).” The International Criminal Court [http://www.icc-cpi.int/en\\_menus/icc/about%20the%20court/frequently%20asked%20questions/Pages/12.aspx](http://www.icc-cpi.int/en_menus/icc/about%20the%20court/frequently%20asked%20questions/Pages/12.aspx) defines “Crimes against humanity include any of the following acts committed as part of a widespread or systematic attack directed against any civilian population, with knowledge of the attack: ... extermination; enforced sterilization, other inhumane acts of a similar character intentionally causing great suffering or serious bodily or mental injury.” The term Genocide as defined by the United States Holocaust Memorial Museum is taken from this site <http://www.ushmm.org/wlc/en/article.php?ModuleId=10007043> “United Nations approved the Convention on the Prevention and Punishment of the Crime of Genocide. This convention establishes genocide as an international crime, which signatory nations undertake to prevent and punish. It defines genocide as: ... any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such: ... Killing members of the group; ... Causing serious

- bodily or mental harm to members of the group; ... Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part ..... Imposing measures intended to prevent births within the group...". It should now be apparent from the gravity of this situation that our elected and appointed government officials have failed to honor their oath and obligation to support and defend the constitution by failing to refuse to obey unconstitutional regulations/laws, failing to protect the life, liberty, and the pursuit of happiness for their fellow countrymen, by failing to prevent the approval/proliferation of wireless technologies which are essentially Weapons of Mass Destruction, making them complicit in ongoing Crimes Against Humanity and the Genocide of their fellow countrymen as well as themselves.
- Now that the recipients of this letter have been informed of the seriousness of this situation, they can no longer pretend that they did not know. What we expect our public officials to do about this is to take immediate action to reverse this situation. There are existing proven, hard wired telephone and fiber optic technologies available that are not only more reliable but are also more secure that can be used in place of wireless technologies. There are also new LED-based wireless technologies being developed which have none of the radio frequency health concerns found in current wireless technologies. Article X (Tenth Amendment) of the Bill of Rights to the US Constitution provides remedy for this situation "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people" [http://www.archives.gov/exhibits/charters/bill\\_of\\_rights\\_transcript.html](http://www.archives.gov/exhibits/charters/bill_of_rights_transcript.html) . Justice Scalia, writing for the majority in a 1997 US Supreme Court decision, Mack and Printz v. United States, 521 U.S. 898 (1997) see pages 919 and 925 of the following: <http://www.supremecourt.gov/opinions/boundvolumes/521bv.pdf> said that "...Residual state sovereignty was also implicit, of course, in the Constitution's conferral upon Congress of not all government powers, but only discrete, enumerated ones, Art.I, § 8, which implication was rendered express by the Tenth Amendment's assertion ... the Federal Government may not compel the States to implement, by legislation or executive action, federal regulatory programs ...". A number of other state legislatures have already taken action in this way, see <http://tenthamendmentcenter.com/> .
  - At a city or county level there are at least 10 government agencies that we know of that passed resolutions urging the Federal Government to repeal sections of the 1996 Telecommunications Act/ perform additional research on adverse health affects of wireless technology/ etc. These agencies that have already adopted resolutions include Los Angeles, California: Santa Fe, New Mexico: San Francisco, California: Tucson, Arizona: Santa Barbara, California: Agoura Hills, California: Sebastopol, California: Glendale, California: Portland, Oregon: Albany, California. Copies of their resolutions can be seen here <https://www.cloutnow.org/localres/>
  - To be clear, those of us who have signed in support of this letter are not going to accept some well meaning but realistically impotent resolution as an acceptable response to reverse this situation. We do not consent to being damaged in any way by any wireless technologies at any time or in any place now or in the future. We demand immediate action to accomplish the following:
    - a. Stop sending locally generated taxes and fees to state and federal governments that act in violation of the constitution and stop accepting funds which have unconstitutional conditions of acceptance from state and federal governments that violate the constitution.
    - b. Require highly visible, legible, warning labels truthfully stating the adverse health affects of wireless devices permanently affixed to the outside of all such devices and prohibit the removal of such warning labels from the devices. Require highly visible, legible warning signs showing the location of all wireless transmitter facilities and

prohibit the removal of such warning signs so long as the transmitter facilities remain in place.

- c. Impose a moratorium on all new wireless communication towers, transmitter installations, 'smart' utility meters, and other wireless devices that utilize current radio/microwave frequency technologies.
- d. Remove all wifi routers, smart utility meters, other wireless devices, and wireless transmitter coverage from all public spaces which are to include, but not be limited to schools, hospitals, government buildings, stores, public transportation, etc much like has been done with the tobacco smoke free areas. Provide signage designating these areas as wireless free areas.
- e. Remove all wireless transmitter coverage, smart utility meters, and other wireless devices from any private property owner that requests it at the sole expense of the wireless provider/s that has/have trespassed upon their private property.
- f. Prohibit the use of cell phones to young people under 12 years of age as is currently done in India, Japan, Russia, France, Israel, and the United Kingdom.
- g. Adopt local standards which limit all wireless technology radiation to at or below the precautionary levels recommended by the current Bioinitiative Report. Require wireless providers to pay for independent certified third party testing services to monitor compliance of wireless radiation levels and provide full transparency of these measurements by free public access to the publication of this information on the internet.
- h. Require all wireless communication providers to pay for the removal of all wireless communication towers and other wireless devices from environmentally critical areas as defined under the Endangered Species Act, and Fish and Wildlife Priority Habitat, etc.
- i. Require wireless service providers to provide financial compensation for adverse health affects that they have caused to people, and the environment. To be perfectly clear we do not consent to a business as usual compensation package where "Corporations privatize profits and socialize losses". There shall not be one penny of extra expense incurred by our governmental agencies in enforcing these requirements nor any fees or additional taxes charged to the public for enforcing these requirements nor shall there be any lump sum settlement paid to the government to absolve the wireless industry of its liabilities leaving little or nothing to help the people and environment who are the true victims of this governmental and corporate malfeasance. Compensation to victims shall follow the principals of Common Law as well as the Nuremberg Principles with the intent to undo/remedy the damages done. Those in government whose actions or lack of actions violated their oaths to the Constitution shall be held personally liable as shall the corporate officers of the wireless industry under whose direction these damages have been done.
- j. Last but not least, approve no new technologies unless and until adequate peer review safety studies conducted by independent third party researchers with full disclosure and transparency prove that there are no adverse affects to people and the environment over both short term and long term exposures.



This concludes the public comments of record submitted for this project from those of us who have signed it at this time. Copies of this letter are being mailed to the following recipients. Additional comments of record will follow as appropriate.

Thurston County Development Services  
Attention: Robert Smith  
2000 Lakeridge Drive SW  
Olympia, WA 98502

Thurston County Board of County Commissioners  
Thurston County Courthouse, Building One, Room 269  
2000 Lakeridge Drive SW, Olympia, WA 98502

Bob Ferguson, Washington State Attorney General  
1125 Washington Street SE  
PO Box 40100  
Olympia, WA 98504-0100

Phil Anderson, Washington Department of  
Fish & Wildlife  
600 Capitol Way N.  
Olympia, WA 98501-1091

Michelle Tirhi, District Biologist Thurston & Pierce Counties  
Washington Department of Fish and Wildlife  
7801 Phillips Rd SW  
Lakewood, WA 98498

Weyerhaeuser, Attn: Julie Keough  
PO Box 889  
Rainier, WA 98576

At&T Mobility  
19801 SW 72<sup>nd</sup> Ave #200  
Tualatin, OR 97062

CascadiaPM, Attn Noah Grodzin  
5501 NE 109<sup>th</sup> Court, Suite A2  
Vancouver, WA 98662

The following Enclosures are attached:

- Thurston County Permit Assistance Center, Master Application, Parcel 23505000000
- 5 page Priority Habitat and Species Report generated by the Washington State Department of Fish and Wildlife for the project parcel
- 7 page Priority Habitat and Species Report generated by the Washington State Department of Fish and Wildlife for the Clear Lake and Elbow Lake areas
- 11 page Table of Reported Biological Effects from Radiofrequency Radiation at Low Intensity Exposure presented in the Bioinitiative Report here <http://www.bioinitiative.org/rf-color-charts/>

Those who have signed and provided contact information below require that the Thurston County Reviewing Agency of record notify them of any changes to the status of this project.

Sincerely,

Cosigned by the following:

Signature

Printed Name and Contact Information


Those who have signed and provided contact information below require that the Thurston County Reviewing Agency of record notify them of any changes to the status of this project.

Sincerely,

Cosigned by the following:

Signature


Printed Name and Contact Information




Thurston County Permit Assistance Center  
 2000 Lakeridge Dr. SW, Olympia, WA 98502  
 (360)786-5490 / (360)754-2939 (Fax)  
 TDD Line (360) 754-2933  
 Email: [permit@co.thurston.wa.us](mailto:permit@co.thurston.wa.us)  
[www.co.thurston.wa.us/permitting](http://www.co.thurston.wa.us/permitting)

*Creating Solutions for Our Future*

## MASTER APPLICATION

STAFF USE ONLY	DATE STAMP
  <b>2014101583</b>  14 109668 VI Site Address: 0 UNKNOWN UNKNOWN WA Parcel #: 23505000000	<p style="text-align: center;"><b>THURSTON COUNTY RECEIVED</b></p> <p style="text-align: center;"><b>APR 14 2014</b></p> <p style="text-align: center;"><b>DEVELOPMENT SERVICES</b></p> <p>Intake by: <u>    <i>II</i>    </u></p>

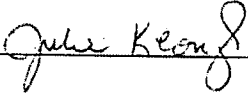

The Master Application is required for all projects and shall accompany a project-specific supplemental application(s). The Master Application may not be submitted alone.

Property Tax Parcel Number(s):	<u>23505000000</u>		
Subdivision Name (if applicable):	_____		Lot #: _____
Property Address:	<u>NA</u>	City: <u>Yelm</u>	State: <u>WA</u> Zip Code: <u>98597</u>
Directions to the Property:	TURN SLIGHT RIGHT ONTO WA-507 (7.7 MI), TURN LEFT ONTO MCHAUGHT ST N / WA-507 (5.4 MI), TURN LEFT ONTO VAIL RD SE (.9 MI), TURN LEFT ONTO BALD HILLS RD SE (3.7 MI), TURN RIGHT ONTO WEYERHAEUSER TRUCK RD (.2 MI), TURN LEFT ONTO SECOND GATED RD (.5 MI TO SITE)		
Property Access Issues (locked gate, code required, dogs or other animals):	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		
If yes, Describe:	<u>Gated Access RD</u>		
<b>OWNER IS RESPONSIBLE FOR SECURING ANIMALS BEFORE SITE VISIT.</b>			

### DESCRIPTION OF PROJECT PROPOSAL

100' Tall monopole with 40'x40' associated ground equipment compound.  
 Would like to discuss landscape standards at pre-application meeting.

Type or Print: *Additional property owner sheet can be obtained online at [www.co.thurston.wa.us/permitting](http://www.co.thurston.wa.us/permitting) or copy obtained from the Permit Assistant Center.*

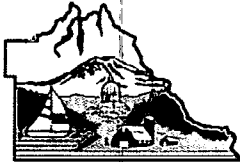
<b>Property Owner(s):</b> WEYERHAEUSER (JULIE KEOUGH)			
Mailing Address: PO BOX 889			
City:	RAINIER	State:	WA Zip Code: 98576
Phone #:	(360) 446-3870	Ext.:	Fax #:
Cell #:		E-mail:	julie.keough@weyerhaeuser.com
Signature:*		Date:	04/02/14
<b>Applicant</b> (if different than owner): AT&T Mobility			
Mailing Address: 19801 SW 72ND AVENUE #200			
City:	Tualatin	State:	OR Zip Code: 97062
Phone #:	(503) 691-5020	Ext.:	Fax #:
Cell #:		E-mail:	
Signature:*		Date:	
<b>Point of Contact:</b> CascadiaPM Noah Grodzin			
Mailing Address: 5501 NE 109TH Court, Suite A2			
City:	Vancouver	State:	WA Zip Code: 98662
Phone #:	(971) 285-6645	Ext.:	Fax #:
Cell #:		E-mail:	noah.grodzin@cascadiapm.com
Signature:*		Date:	4/2/2014

**BILLING INVOICES**

The base application fee charged at the time of application covers base hours listed on the fee schedule. When the base hours by a Department are used, a monthly billing invoice will be generated for additional hours at the hourly rate listed on the fee schedule. Should review of the project exceed the base hours allotted, billing invoices shall be mailed to:

Owner  Applicant  Point of Contact

\*Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in the application and that to the best of my knowledge and belief, such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. I hereby grant to the agencies to which this application is made or forwarded, the right to enter the above-described location to inspect the proposed, in-progress or completed work. I agree to start work **only** after all necessary permits/approvals have been received.



**THURSTON COUNTY**  
 WASHINGTON  
 SINCE 1852

Thurston County Resource Stewardship  
 2000 Lakeridge Dr. S.W. Olympia, WA 98502  
 (360)786-5490 / (360)754-2939 (Fax)  
 TDD Line (360) 754-2933  
 Email: [permit@co.thurston.wa.us](mailto:permit@co.thurston.wa.us)  
[www.co.thurston.wa.us/permitting](http://www.co.thurston.wa.us/permitting)

**Supplemental Application  
 PRESUBMISSION CONFERENCE**

STAFF USE ONLY	DATE STAMP
<p><b>14 109668 VI</b></p> <p>Permit Type: Presubmission Conference            Sub Type: Special Use Permit            Work Type: Preliminary Meeting            Site: <b>0 UNKNOWN UNKNOWN WA</b>            Assessor Property ID: 23505000000            Applicant: AT&amp;T Mobility            Owner: JULIE KEOUGH/WEYERHAEUSER COMPANY</p>	<p align="center"><b>THURSTON COUNTY            RECEIVED            APR 14 2014            DEVELOPMENT SERVICES</b></p> <p>Intake by: <u>    </u></p>

**This application form cannot be submitted alone. In addition to this form, a complete application package includes:**

Applicant Use	SUBMITTAL CHECKLIST	Staff Use Only
<input checked="" type="checkbox"/>	Master Application.	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Applicable processing fees. <i>Refer to current fee schedules. Depending on the adopted fee structure, additional fees may occur if base hours/fees at intake are exhausted.</i>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Site plan drawn to scale (standard engineer scale) on an 8 1/2" X 11" or 11" x 17" sheet.	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Site plan requirement checklist.	<input type="checkbox"/>

**ZONING JURISDICTION**

Rural County Zoning \_\_\_\_\_  
  Lacey UGA Zoning \_\_\_\_\_  
  Tumwater UGA Zoning \_\_\_\_\_  
  Olympia UGA Zoning \_\_\_\_\_  
  Grand Mound UG Zoning \_\_\_\_\_

**DETAILED DESCRIPTION OF THE PROJECT (Use separate sheet if necessary)**

100' tall camouflaged communications tower. Request to alleviate landscaping requirements in lieu of property owner vegetation plan.

**PROJECT INFORMATION**

**UTILITIES:**

**Water Supply:**

**Existing:**  Single Family well  Two party well  Group B Well  Public Water System

Name of public water system: \_\_\_\_\_

**Proposed:**  Single Family well  Two Party well  Group B Well  Public Water System

Name of public water system: \_\_\_\_\_

Is water system located/proposed onsite? \_\_\_\_\_ If no, provide tax parcel number of property the water system is located or proposed on \_\_\_\_\_

Are there any off-site water supplies within 200 feet of the property?  Yes  No

How was this verified? \_\_\_\_\_

**Sewage Disposal:**

**Existing:**  Single Family Septic System  Community Septic System (Serves more than one home)

Public Utility Name of Public Utility \_\_\_\_\_

**Proposed:**  Single Family Septic Systems  Community Septic System

Public Utility Name of Public Utility \_\_\_\_\_

Are the test holes dug?  Yes  No If No, explain \_\_\_\_\_

Is sewage system located/proposed onsite? Select One If no, provide tax parcel number of property the system is located or proposed on \_\_\_\_\_

**ACCESS:**

Existing  New  Private Road  Public Road

Name of road or street from which access is or will be gained SE Weyerhauser RD

How many other parcels have access by this road? 1 (same ownership)  
(Include vacant Parcels)

**CRITICAL AREAS:**

Water on or within 300' of property:  None  Salt  River/Creek  Lake/Pond  Wetland  Ditch

Name of water body: \_\_\_\_\_

Has the property ever flooded?  No  Do not know  Yes, when? \_\_\_\_\_ (If yes, show area on site plan)

Slopes greater than 30%?  Yes  No

Are there other Critical Areas? (e.g. oak trees, eagle's nest, high ground water, etc.)  Yes  No

If yes, describe: \_\_\_\_\_

**ADDITIONAL PROJECT INFORMATION FOR NON-RESIDENTIAL PROPOSALS**

1. What are the hours of operation? This is for a communications tower
2. What are the days of operation? This is for a communications tower  
Monday Tuesday Wednesday Thursday Friday Saturday Sunday
3. What is the total number of employees engaged in the business? Unmanned
4. Does the owner/operator of the proposed business reside on the property where the business is located?  
 Yes  No
5. Are customers expected to visit the site?  Yes  No If no, skip to No. 8
6. What is the average number of customers visiting the site? per day \_\_\_\_\_ per week \_\_\_\_\_
7. Are parking spaces being provided?  Yes  No If yes, how many \_\_\_\_\_
8. Will this proposal generate noise?  Yes  No If yes, describe the noise that will be generated
9. Will there be any outside storage of materials or equipment?  Yes  No If yes, describe in detail what will be stored outside  

There will be equipment placed inside of a shelter
10. Are any vehicles involved in the business?  Yes  No If yes, list the type of vehicle and how many?  
\_\_\_\_\_
11. Is a sign proposed?  Yes  No If yes, how many and what type (wall sign, monument sign, other)?  
\_\_\_\_\_
12. Is the use proposed within an accessory structure?  Yes  No If yes, what is the square footage of the accessory structure? \_\_\_\_\_
13. What is the gross square footage of the existing non-residential buildings? NA
14. What is the gross square footage of the total finished project? 1600 SQFT
15. What is the square footage of existing impervious area? NA Impervious area means pavement (compacted gravel, asphalt and concrete), roofs, revetments, or any other man-made surface which substantially impedes the infiltration of precipitation.
16. What is the total square footage of impervious area after the finished project? 1600 SQFT



### Presubmission Conference Site Plan Checklist

The site plan shall contain and/or address the following in a clear, accurate and intelligible form. Submit the checklist with your application.

Applicant Use		Staff Use Only
<input checked="" type="checkbox"/>	1. The project site must be identified in the field by posting an identification sign visible from the access road and by flagging the property corners and the center of the driveway/road access location. The purpose of the sign is for project identification rather than public notification. The sign and flagging are provided by Thurston County and can be obtained at the Permit Assistance Center.	<input type="checkbox"/>
<input checked="" type="checkbox"/>	2. The site plan shall be drawn to scale (standard engineer scale) on an 8 ½" X 11" or 11" x 17" sheet. If larger size maps are submitted, also provide one copy of a reduced map. The site plan shall depict the following:	<input type="checkbox"/>
<input checked="" type="checkbox"/>	a. The property boundaries and property boundary dimensions of the entire property.	<input type="checkbox"/>
<input checked="" type="checkbox"/>	b. The location and height of all existing and proposed structures, including, but not limited to, mobile homes, houses, sheds, garages, barns, fences, culverts, bridges, storage tanks, retaining walls, decks and porches. Include square footage of each structure.	<input type="checkbox"/>
<input checked="" type="checkbox"/>	c. Setback distances from all property lines (or road easements) to all existing and proposed buildings	<input type="checkbox"/>
<input checked="" type="checkbox"/>	d. The location of all existing and proposed wells, septic tanks, drainfields, reserve areas.	<input type="checkbox"/>
<input checked="" type="checkbox"/>	e. All means, existing and proposed, vehicular and pedestrian ingress and egress to and from the site, including driveways, streets, fire access roads, including existing and proposed road names and existing county and state right of way.	<input type="checkbox"/>
<input checked="" type="checkbox"/>	f. For non-residential projects, the location of proposed parking, landscaping and outside storage areas.	<input type="checkbox"/>
<input checked="" type="checkbox"/>	g. The location of any existing critical areas or buffers affecting the site, both on-site and on adjacent properties, including but not limited to shorelines, wetlands, streams, flood zones, steep slopes, high groundwater and special habitats.	<input type="checkbox"/>
<input checked="" type="checkbox"/>	h. Directions to the site.	<input type="checkbox"/>
<input checked="" type="checkbox"/>	i. Contours or other demonstration of slopes.	<input type="checkbox"/>
<input checked="" type="checkbox"/>	j. All existing vegetation proposed to remain and areas of proposed landscaping, including location and type	<input type="checkbox"/>



# WASHINGTON DEPARTMENT OF FISH AND WILDLIFE PRIORITY HABITATS AND SPECIES REPORT

SOURCE DATASET: PHSPublic  
REPORT DATE: 07/15/2014 1.32

Query ID: P140715133136

Common Name	Site Name	Priority Area	Accuracy	Federal Status	Sensitive Data	Source Entity
Scientific Name	Source Dataset	Occurrence Type		State Status	Resolution	Geometry Type
Notes	Source Record	More Information (URL)		PHS Listing Status		
	Source Date	Mgmt Recommendations				
LACUSTRINE LITTORAL	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service
	NWIPOLY	Aquatic habitat		N/A	AS MAPPED	Polygons
		<a href="http://www.ecy.wa">http://www.ecy.wa.</a>		PHS Listed		
Northern Spotted Owl		Management Buffer	NA	Threatened	Y	WA Dept. of Fish and Wildlife
<i>Strix occidentalis</i>	WS_OwlStatus_Buf	Management buffer		Endangered	TOWNSHIP	Polygons
		<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS Listed		
PALUSTRINE	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service
	NWIPOLY	Aquatic habitat		N/A	AS MAPPED	Polygons
		<a href="http://www.ecy.wa">http://www.ecy.wa.</a>		PHS Listed		
PALUSTRINE	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service
	NWIPOLY	Aquatic habitat		N/A	AS MAPPED	Polygons
		<a href="http://www.ecy.wa">http://www.ecy.wa.</a>		PHS Listed		
PALUSTRINE	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service
	NWIPOLY	Aquatic habitat		N/A	AS MAPPED	Polygons
		<a href="http://www.ecy.wa">http://www.ecy.wa.</a>		PHS Listed		
PALUSTRINE	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service
	NWIPOLY	Aquatic habitat		N/A	AS MAPPED	Polygons
		<a href="http://www.ecy.wa">http://www.ecy.wa.</a>		PHS Listed		
PALUSTRINE	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service
	NWIPOLY	Aquatic habitat		N/A	AS MAPPED	Polygons
		<a href="http://www.ecy.wa">http://www.ecy.wa.</a>		PHS Listed		

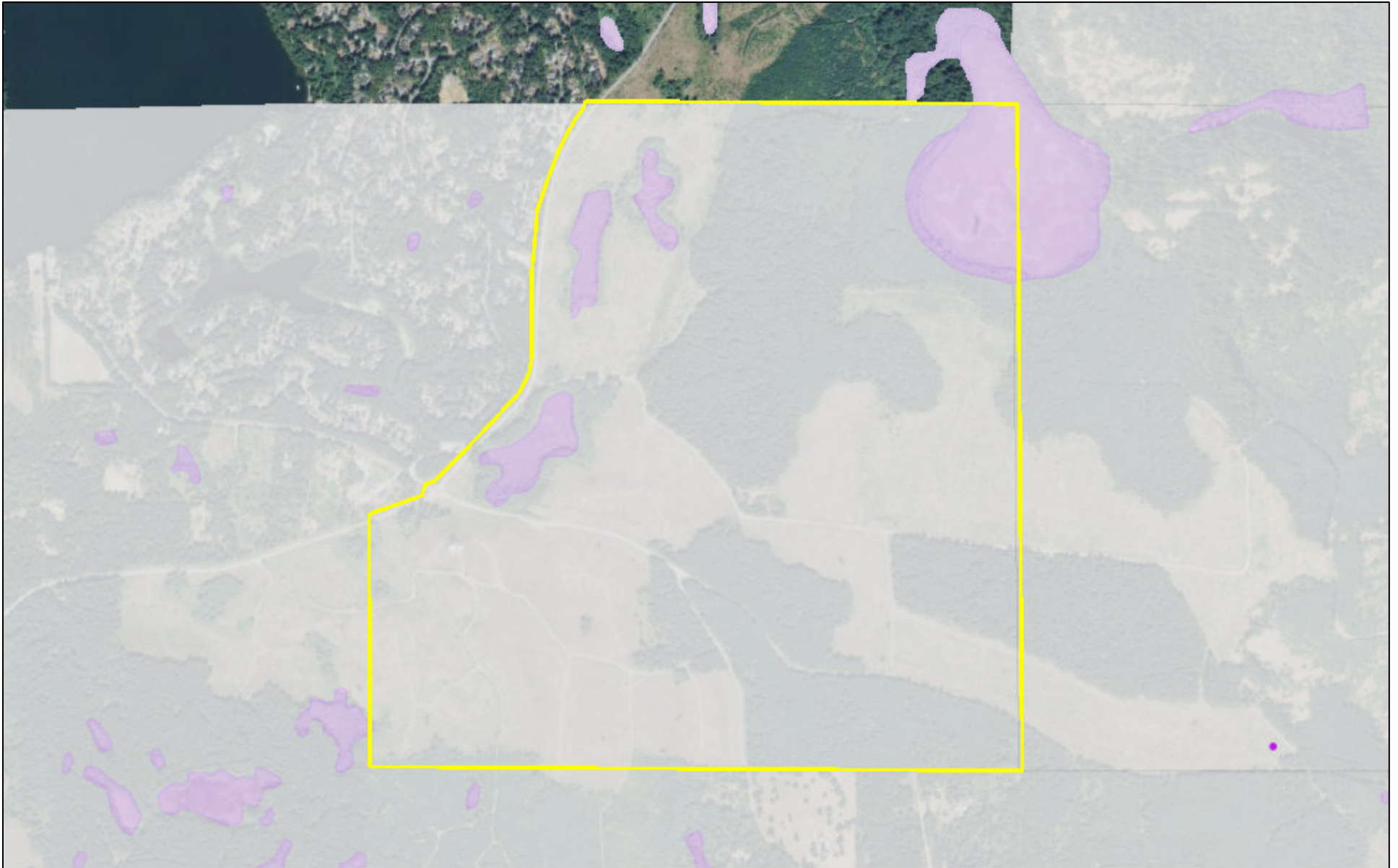
Common Name	Site Name	Priority Area	Accuracy	Federal Status	Sensitive Data	Source Entity
Scientific Name	Source Dataset	Occurrence Type		State Status	Resolution	Geometry Type
Notes	Source Record	More Information (URL)		PHS Listing Status		
	Source Date	Mgmt Recommendations				
PALUSTRINE	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service
	NWIPOLY	Aquatic habitat		N/A	AS MAPPED	Polygons
		<a href="http://www.ecy.wa.gov">http://www.ecy.wa.gov</a>		PHS Listed		
Taylor's Checkerspot		Occurrence	1/4 mile (Quarter	Endangered	Y	WA Dept. of Fish and Wildlife
Euphydryas editha taylori	WS_OccurPoint	Biotic detection		Endangered	SECTION	Points
	59437					
	May 14, 2002	<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot		Occurrence	1/4 mile (Quarter	Endangered	Y	WA Dept. of Fish and Wildlife
Euphydryas editha taylori	WS_OccurPoint	Biotic detection		Endangered	SECTION	Points
	59448					
	May 01, 2004	<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot		Occurrence	1/4 mile (Quarter	Endangered	Y	WA Dept. of Fish and Wildlife
Euphydryas editha taylori	WS_OccurPoint	Biotic detection		Endangered	SECTION	Points
	59436					
	May 02, 1996	<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot		Occurrence	1/4 mile (Quarter	Endangered	Y	WA Dept. of Fish and Wildlife
Euphydryas editha taylori	WS_OccurPoint	Biotic detection		Endangered	SECTION	Points
	59438					
	May 14, 2002	<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot		Occurrence	1/4 mile (Quarter	Endangered	Y	WA Dept. of Fish and Wildlife
Euphydryas editha taylori	WS_OccurPoint	Biotic detection		Endangered	SECTION	Points
	59447					
	April 10, 2004	<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot		Occurrence	1/4 mile (Quarter	Endangered	Y	WA Dept. of Fish and Wildlife
Euphydryas editha taylori	WS_OccurPoint	Biotic detection		Endangered	SECTION	Points
	59449					
	April 10, 2004	<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot		Occurrence	1/4 mile (Quarter	Endangered	Y	WA Dept. of Fish and Wildlife
Euphydryas editha taylori	WS_OccurPoint	Biotic detection		Endangered	SECTION	Points
	59441					
	May 02, 2004	<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		

Common Name	Site Name	Priority Area	Accuracy	Federal Status	Sensitive Data	Source Entity
Scientific Name	Source Dataset	Occurrence Type		State Status	Resolution	Geometry Type
Notes	Source Record	More Information (URL)		PHS Listing Status		
	Source Date	Mgmt Recommendations				
Taylor's Checkerspot Euphydryas editha taylori	WS_OccurPoint 59444 April 29, 2004	Occurrence Biotic detection  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	1/4 mile (Quarter)	Endangered Endangered  PHS LISTED	Y SECTION	WA Dept. of Fish and Wildlife Points
Taylor's Checkerspot Euphydryas editha taylori	WS_OccurPoint 113077 April 26, 2005	Occurrence Biotic detection  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	GPS	Endangered Endangered  PHS LISTED	Y SECTION	WA Dept. of Fish and Wildlife Points
Taylor's Checkerspot Euphydryas editha taylori	WS_OccurPoint 113079 April 26, 2005	Occurrence Biotic detection  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	GPS	Endangered Endangered  PHS LISTED	Y SECTION	WA Dept. of Fish and Wildlife Points
Taylor's Checkerspot Euphydryas editha taylori	WS_OccurPoint 113076 May 02, 2004	Occurrence Biotic detection  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	GPS	Endangered Endangered  PHS LISTED	Y SECTION	WA Dept. of Fish and Wildlife Points
Taylor's Checkerspot Euphydryas editha taylori	WS_OccurPoint 113080 April 19, 2005	Occurrence Biotic detection  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	GPS	Endangered Endangered  PHS LISTED	Y SECTION	WA Dept. of Fish and Wildlife Points
Taylor's Checkerspot Euphydryas editha taylori	PHSREGION 913878	Occurrence Individual occurrence  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	1/4 mile (Quarter)	Endangered Endangered  PHS LISTED	Y SECTION	WA Dept. of Fish and Wildlife Polygons
Taylor's Checkerspot Euphydryas editha taylori	PHSREGION 913879	Occurrence Individual occurrence  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	1/4 mile (Quarter)	Endangered Endangered  PHS LISTED	Y SECTION	WA Dept. of Fish and Wildlife Polygons
Taylor's Checkerspot Euphydryas editha taylori	PHSREGION 913880	Occurrence Individual occurrence  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	1/4 mile (Quarter)	Endangered Endangered  PHS LISTED	Y SECTION	WA Dept. of Fish and Wildlife Polygons








Common Name	Site Name	Priority Area	Accuracy	Federal Status	Sensitive Data	Source Entity
Scientific Name	Source Dataset	Occurrence Type		State Status	Resolution	Geometry Type
Notes	Source Record	More Information (URL)		PHS Listing Status		
	Source Date	Mgmt Recommendations				
Taylor's Checkerspot Euphydryas editha taylori	PHSREGION 913881	Occurrence Individual occurrence	1/4 mile (Quarter)	Endangered Endangered	Y SECTION	WA Dept. of Fish and Wildlife Polygons
		<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot Euphydryas editha taylori	PHSREGION 913883	Occurrence Individual occurrence	1/4 mile (Quarter)	Endangered Endangered	Y SECTION	WA Dept. of Fish and Wildlife Polygons
		<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot Euphydryas editha taylori	PHSREGION 913884	Occurrence Individual occurrence	1/4 mile (Quarter)	Endangered Endangered	Y SECTION	WA Dept. of Fish and Wildlife Polygons
		<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot Euphydryas editha taylori	PHSREGION 913882	Occurrence Individual occurrence	1/4 mile (Quarter)	Endangered Endangered	Y SECTION	WA Dept. of Fish and Wildlife Polygons
		<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot Euphydryas editha taylori	WS_OccurPolygon 4474 May 15, 2006	Occurrence Concentration	GPS	Endangered Endangered	Y SECTION	WA Dept. of Fish and Wildlife Polygons
		<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Wood duck Aix sponsa	PHSREGION 900938	Breeding Area Breeding occurrence	1/4 mile (Quarter)	N/A N/A	N AS MAPPED	WA Dept. of Fish and Wildlife Polygons
		<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		

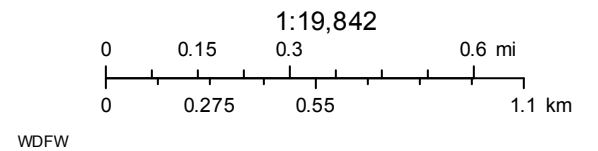
DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

# WDFW Test Map



July 15, 2014

- |  |   |  |
|--|---|--|
|  PHS Report Clip Area |  AS MAPPED |  TOWNSHIP |
|  PT                   |  SECTION   |  |
|  LN                   |  QTR-TWP   |  |





# WASHINGTON DEPARTMENT OF FISH AND WILDLIFE PRIORITY HABITATS AND SPECIES REPORT

SOURCE DATASET: PHSPublic  
REPORT DATE: 07/18/2014 2.51

Query ID: P140718145029

Common Name	Site Name	Priority Area	Accuracy	Federal Status	Sensitive Data	Source Entity
Scientific Name	Source Dataset	Occurrence Type		State Status	Resolution	Geometry Type
Notes	Source Record	More Information (URL)		PHS Listing Status		
	Source Date	Mgmt Recommendations				
Bald eagle <i>Haliaeetus leucocephalus</i>	ELBOW LAKE WS_OccurPoint 63486 March 22, 2005	Breeding Area Nest <a href="http://wdfw.wa">http://wdfw.wa</a> <a href="http://wdfw.wa">http://wdfw.wa</a>	1/4 mile (Quarter)	Fed Spp Concern Sensitive  PHS LISTED	N AS MAPPED	WA Dept. of Fish and Wildlife Points
Bald eagle <i>Haliaeetus leucocephalus</i>	Not Given BaldEagle_Bf	Breeding Area Management buffer  <a href="http://wdfw.wa">http://wdfw.wa</a>	NA	Fed Spp Concern Sensitive  PHS Listed	N AS MAPPED	WDFW Wildlife Program Polygons
Bald eagle <i>Haliaeetus leucocephalus</i>	Not Given BaldEagle_Bf	Breeding Area Management buffer  <a href="http://wdfw.wa">http://wdfw.wa</a>	NA	Fed Spp Concern Sensitive  PHS Listed	N AS MAPPED	WDFW Wildlife Program Polygons
Coast Resident Cutthroat <i>Oncorhynchus clarki</i>	Elbow Lake Creek FISHDIST 18992	Occurrence/Migration Occurrence/migration <a href="http://wdfw.wa.gov/wlm/diversty/soc/soc.htm">http://wdfw.wa.gov/wlm/diversty/soc/soc.htm</a> <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	NA	N/A N/A  PHS LISTED	N AS MAPPED	WA Department of Fish & Wildli Lines
Common loon <i>Gavia immer</i>	ELBOW LAKE 2 WS_OccurPoint 60477 April 20, 1979	Breeding Area Biotic detection  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	1/4 mile (Quarter)	N/A Sensitive  PHS LISTED	N AS MAPPED	WA Dept. of Fish and Wildlife Points
Cutthroat <i>Oncorhynchus clarki</i>	Elbow Lake Creek SASI 7420	Occurrence Occurrence <a href="http://wdfw.wa.gov/wlm/diversty/soc/soc.htm">http://wdfw.wa.gov/wlm/diversty/soc/soc.htm</a> <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	NA	Not Warranted N/A  PHS Listed	N AS MAPPED	WDFW Fish Program Lines
Northern Spotted Owl <i>Strix occidentalis</i>	WS_OwlStatus_Buf	Management Buffer Management buffer  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	NA	Threatened Endangered  PHS Listed	Y TOWNSHIP	WA Dept. of Fish and Wildlife Polygons

Common Name	Site Name	Priority Area	Accuracy	Federal Status	Sensitive Data	Source Entity
Scientific Name	Source Dataset	Occurrence Type		State Status	Resolution	Geometry Type
Notes	Source Record	More Information (URL)		PHS Listing Status		
	Source Date	Mgmt Recommendations				
Osprey Pandion haliaetus	ELBOW LAKE WS_OccurPoint 69242 June 01, 1990	N/A Nest  N/A	1/4 mile (Quarter)	N/A Monitored  NOT A PHS LISTED	N AS MAPPED	WA Dept. of Fish and Wildlife Points
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons



Common Name	Site Name	Priority Area	Accuracy	Federal Status	Sensitive Data	Source Entity
Scientific Name	Source Dataset	Occurrence Type		State Status	Resolution	Geometry Type
Notes	Source Record	More Information (URL)		PHS Listing Status		
	Source Date	Mgmt Recommendations				
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons

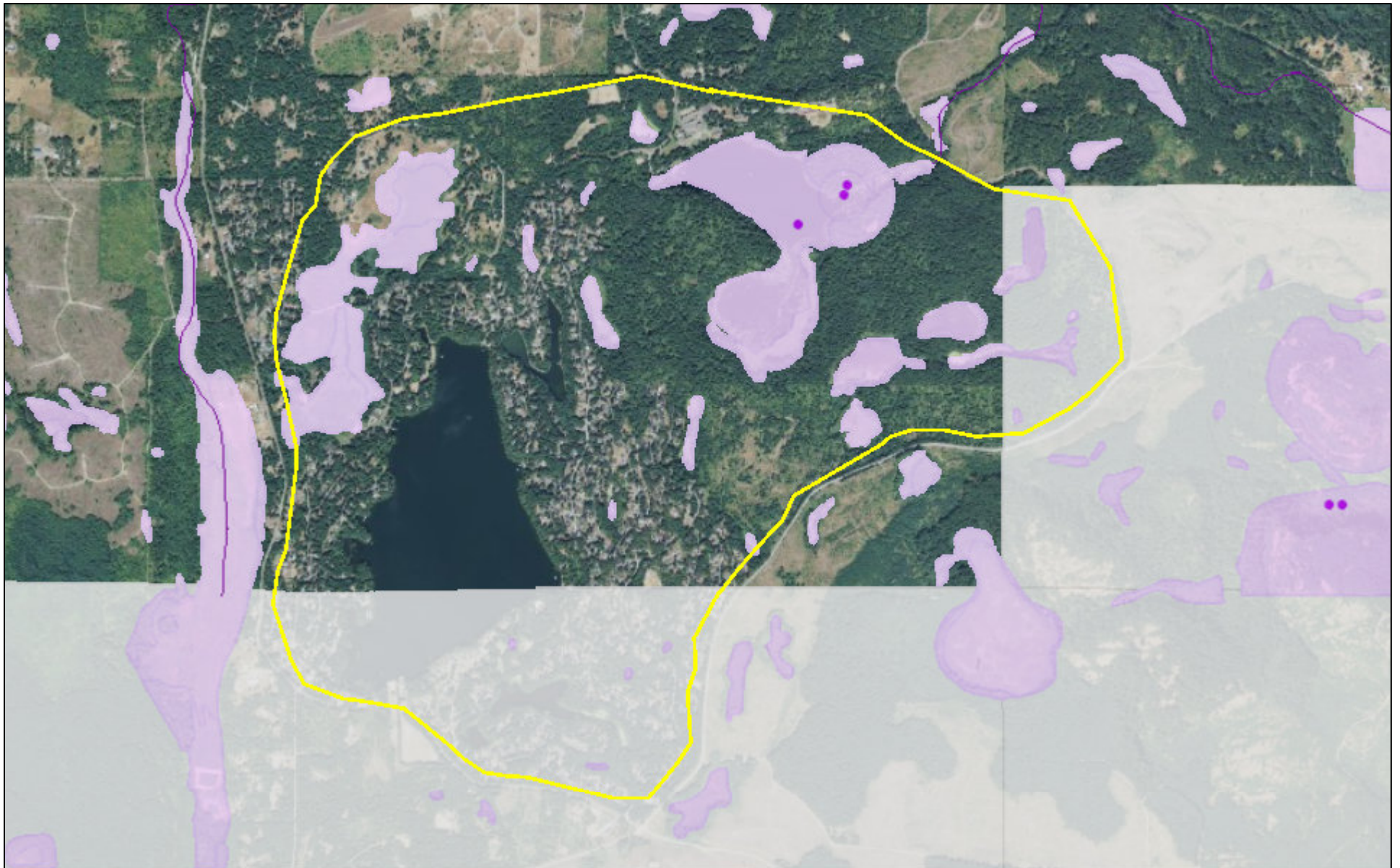
Common Name	Site Name	Priority Area	Accuracy	Federal Status	Sensitive Data	Source Entity
Scientific Name	Source Dataset	Occurrence Type		State Status	Resolution	Geometry Type
Notes	Source Record	More Information (URL)		PHS Listing Status		
	Source Date	Mgmt Recommendations				
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons
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PALUSTRINE	N/A NWIPOLY	Aquatic Habitat Aquatic habitat  <a href="http://www.ecy.wa">http://www.ecy.wa</a>	NA	N/A N/A  PHS Listed	N AS MAPPED	US Fish and Wildlife Service Polygons

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Scientific Name	Source Dataset	Occurrence Type		State Status	Resolution	Geometry Type
Notes	Source Record	More Information (URL)		PHS Listing Status		
	Source Date	Mgmt Recommendations				
PALUSTRINE	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service
	NWIPOLY	Aquatic habitat		N/A	AS MAPPED	Polygons
		<a href="http://www.ecy.wa.gov">http://www.ecy.wa.gov</a>		PHS Listed		
PALUSTRINE	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service
	NWIPOLY	Aquatic habitat		N/A	AS MAPPED	Polygons
		<a href="http://www.ecy.wa.gov">http://www.ecy.wa.gov</a>		PHS Listed		
PALUSTRINE	N/A	Aquatic Habitat	NA	N/A	N	US Fish and Wildlife Service
	NWIPOLY	Aquatic habitat		N/A	AS MAPPED	Polygons
		<a href="http://www.ecy.wa.gov">http://www.ecy.wa.gov</a>		PHS Listed		
Taylor's Checkerspot		Occurrence	1/4 mile (Quarter	Endangered	Y	WA Dept. of Fish and Wildlife
Euphydryas editha taylori	WS_OccurPoint	Biotic detection		Endangered	SECTION	Points
	59434					
	May 02, 1996	<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot		Occurrence	1/4 mile (Quarter	Endangered	Y	WA Dept. of Fish and Wildlife
Euphydryas editha taylori	WS_OccurPoint	Biotic detection		Endangered	SECTION	Points
	59439					
	May 19, 2003	<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot		Occurrence	1/4 mile (Quarter	Endangered	Y	WA Dept. of Fish and Wildlife
Euphydryas editha taylori	WS_OccurPoint	Biotic detection		Endangered	SECTION	Points
	59440					
	May 19, 2003	<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot		Occurrence	1/4 mile (Quarter	Endangered	Y	WA Dept. of Fish and Wildlife
Euphydryas editha taylori	WS_OccurPoint	Biotic detection		Endangered	SECTION	Points
	59435					
	May 02, 1996	<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		
Taylor's Checkerspot		Occurrence	Map 1:12,000 <= 33	Endangered	Y	WA Dept. of Fish and Wildlife
Euphydryas editha taylori	WS_OccurPoint	Biotic detection		Endangered	SECTION	Points
	113082					
	April 28, 2006	<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		








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Scientific Name	Source Dataset	Occurrence Type		State Status	Resolution	Geometry Type
Notes	Source Record	More Information (URL)		PHS Listing Status		
	Source Date	Mgmt Recommendations				
Taylor's Checkerspot Euphydryas editha taylori	WS_OccurPoint 113084 April 28, 2006	Occurrence Biotic detection  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	Map 1:12,000 <= 33	Endangered Endangered  PHS LISTED	Y SECTION	WA Dept. of Fish and Wildlife Points
Taylor's Checkerspot Euphydryas editha taylori	WS_OccurPoint 113075 May 19, 2003	Occurrence Biotic detection  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	1/8 mile	Endangered Endangered  PHS LISTED	Y SECTION	WA Dept. of Fish and Wildlife Points
Taylor's Checkerspot Euphydryas editha taylori	WS_OccurPoint 113083 April 28, 2006	Occurrence Biotic detection  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	Map 1:12,000 <= 33	Endangered Endangered  PHS LISTED	Y SECTION	WA Dept. of Fish and Wildlife Points
Taylor's Checkerspot Euphydryas editha taylori	PHSREGION 913877	Occurrence Individual occurrence  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	1/4 mile (Quarter	Endangered Endangered  PHS LISTED	Y SECTION	WA Dept. of Fish and Wildlife Polygons
Taylor's Checkerspot Euphydryas editha taylori	PHSREGION 913878	Occurrence Individual occurrence  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	1/4 mile (Quarter	Endangered Endangered  PHS LISTED	Y SECTION	WA Dept. of Fish and Wildlife Polygons
Wood duck Aix sponsa	PHSREGION 900938	Breeding Area Breeding occurrence  <a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>	1/4 mile (Quarter	N/A N/A  PHS LISTED	N AS MAPPED	WA Dept. of Fish and Wildlife Polygons

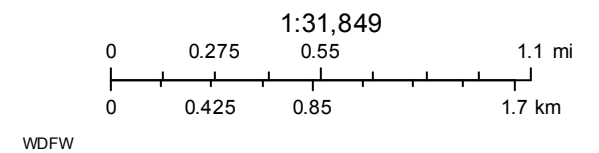
DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

# WDFW Test Map



July 18, 2014

- |  |   |  |
|--|---|--|
|  PHS Report Clip Area |  AS MAPPED |  TOWNSHIP |
|  PT                   |  SECTION   |  |
|  LN                   |  QTR-TWP   |  |



## Reported Biological Effects from Radiofrequency Radiation at Low-Intensity Exposure (Cell Tower, Wi-Fi, Wireless Laptop and 'Smart' Meter RF Intensities)

Power Density (Microwatts/centimeter <sup>2</sup> - uW/cm <sup>2</sup> )		Reference
As low as (10 <sup>-13</sup> ) or 100 femtowatts/cm <sup>2</sup>	Super-low intensity RFR effects at MW resonant frequencies resulted in changes in genes; problems with chromatin conformation (DNA)	Belyaev, 1997
5 picowatts/cm <sup>2</sup> (10 <sup>-12</sup> )	Changed growth rates in yeast cells	Grundler, 1992
0.1 nanowatt/cm <sup>2</sup> (10 <sup>-10</sup> ) or 100 picowatts/cm <sup>2</sup>	Super-low intensity RFR effects at MW resonant frequencies resulted in changes in genes; problems with chromatin condensation (DNA) intensities comparable to base stations	Belyaev, 1997
0.00034 uW/cm <sup>2</sup>	Chronic exposure to mobile phone pulsed RF significantly reduced sperm count,	Behari, 2006
0.0005 uW/cm <sup>2</sup>	RFR decreased cell proliferation at 960 MHz GSM 217 Hz for 30-min exposure	Velizarov, 1999
0.0006 - 0.0128 uW/cm <sup>2</sup>	Fatigue, depressive tendency, sleeping disorders, concentration difficulties, cardio-vascular problems reported with exposure to GSM 900/1800 MHz cell phone signal at base station level exposures.	Oberfeld, 2004
0.0009 uW/cm <sup>2</sup>	RFR induced 10%-40% increase in DNA synthesis in glioma cells (brain)	Stagg, 1997
0.003 - 0.02 uW/cm <sup>2</sup>	In children and adolescents (8-17 yrs) short-term exposure caused headache, irritation, concentration difficulties in school.	Heinrich, 2010
0.003 to 0.05 uW/cm <sup>2</sup>	In children and adolescents (8-17 yrs) short-term exposure caused conduct problems in school (behavioral problems)	Thomas, 2010
0.005 uW/cm <sup>2</sup>	In adults (30-60 yrs) chronic exposure caused sleep disturbances, (but not significantly increased across the entire population)	Mohler, 2010
0.005 - 0.04 uW/cm <sup>2</sup>	Adults exposed to short-term cell phone radiation reported headaches, concentration difficulties (differences not significant, but elevated)	Thomas, 2008
0.006 - 0.01 uW/cm <sup>2</sup>	Chronic exposure to base station RF (whole-body) in humans showed increased stress hormones; dopamine levels substantially decreased; higher levels of adrenaline and nor-adrenaline; dose-response seen; produced chronic physiological stress in cells even after 1.5 years.	Buchner, 2012
0.01 - 0.11 uW/cm <sup>2</sup>	RFR from cell towers caused fatigue, headaches, sleeping problems	Navarro, 2003

Stress proteins, HSP, disrupted immune function	Brain tumors and blood-brain barrier
Reproduction/fertility effects	Sleep, neuron firing rate, EEG, memory, learning, behavior
Oxidative damage/ROS/DNA damage/DNA repair failure	Cancer (other than brain), cell proliferation
Disrupted calcium metabolism	Cardiac, heart muscle, blood-pressure, vascular effects

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Power Density (Microwatts/centimeter <sup>2</sup> - uW/cm <sup>2</sup> )		Reference
0.01 - 0.05 uW/cm <sup>2</sup>	Adults (18-91 yrs) with short-term exposure to GSM cell phone radiation reported headache, neurological problems, sleep and concentration problems.	Hutter, 2006
0.005 - 0.04 uW/cm <sup>2</sup>	Adults exposed to short-term cell phone radiation reported headaches, concentration difficulties (differences not significant, but elevated)	Thomas, 2008
0.015 - 0.21 uW/cm <sup>2</sup>	Adults exposed to short-term GSM 900 radiation reported changes in mental state (e.g., calmness) but limitations of study on language descriptors prevented refined word choices (stupified, zoned-out)	Augner, 2009
0.05 - 0.1 uW/cm <sup>2</sup>	RFR linked to adverse neurological, cardio symptoms and cancer risk	Khurana, 2010
0.05 - 0.1 uW/cm <sup>2</sup>	RFR related to headache, concentration and sleeping problems, fatigue	Kundi, 2009
0.07 - 0.1 uW/cm <sup>2</sup>	Sperm head abnormalities in mice exposed for 6-months to base station level RF/MW. Sperm head abnormalities occurred in 39% to 46% exposed mice (only 2% in controls) abnormalities was also found to be dose dependent. The implications of the pin-head and banana-shaped sperm head. The occurrence of sperm head observed increase occurrence of sperm head abnormalities on the reproductive health of humans living in close proximity to GSM base stations were discussed."	Otitolaju, 2010
0.38 uW/cm <sup>2</sup>	RFR affected calcium metabolism in heart cells	Schwartz, 1990
0.8 - 10 uW/cm <sup>2</sup>	RFR caused emotional behavior changes, free-radical damage by super-weak MWs	Akoev, 2002
0.13 uW/cm <sup>2</sup>	RFR from 3G cell towers decreased cognition, well-being	Zwamborn, 2003
0.16 uW/cm <sup>2</sup>	Motor function, memory and attention of school children affected (Latvia)	Kolodynski, 1996
0.168 - 1.053 uW/cm <sup>2</sup>	Irreversible infertility in mice after 5 generations of exposure to RFR from an 'antenna park'	Magras & Zenos, 1997
0.2 - 8 uW/cm <sup>2</sup>	RFR caused a two-fold increase in leukemia in children	Hocking, 1996
0.2 - 8 uW/cm <sup>2</sup>	RFR decreased survival in children with leukemia	Hocking, 2000
0.21 - 1.28 uW/cm <sup>2</sup>	Adolescents and adults exposed only 45 min to UMTS cell phone radiation reported increases In headaches.	Riddervold, 2008

Stress proteins, HSP, disrupted immune function	Brain tumors and blood-brain barrier
Reproduction/fertility effects	Sleep, neuron firing rate, EEG, memory, learning, behavior
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Power Density (Microwatts/centimeter <sup>2</sup> - uW/cm <sup>2</sup> )		Reference
0.5 uW/cm <sup>2</sup>	Significant degeneration of seminiferous epithelium in mice at 2.45 GHz, 30-40 min.	Saunders, 1981
0.5 - 1.0 uW/cm <sup>2</sup>	Wi-Fi level laptop exposure for 4-hr resulted in decrease in sperm viability, DNA fragmentation with sperm samples placed in petri dishes under a laptop connected via WI-FI to the internet.	Avendano, 2012
1.0 uW/cm <sup>2</sup>	RFR induced pathological leakage of the blood-brain barrier	Persson, 1997
1.0 uW/cm <sup>2</sup>	RFR caused significant effect on immune function in mice	Fesenko, 1999
1.0 uW/cm <sup>2</sup>	RFR affected function of the immune system	Novoselova, 1999
1.0 uW/cm <sup>2</sup>	Short-term (50 min) exposure in electrosensitive patients, caused loss of well-being after GSM and especially UMTS cell phone radiation exposure	Eltiti, 2007
1.3 - 5.7 uW/cm <sup>2</sup>	RFR associated with a doubling of leukemia in adults	Dolk, 1997
1.25 uW/cm <sup>2</sup>	RFR exposure affected kidney development in rats (in-utero exposure)	Pyrpasopoulou, 2004
1.5 uW/cm <sup>2</sup>	RFR reduced memory function in rats	Nittby, 2007
2 uW/cm <sup>2</sup>	RFR induced double-strand DNA damage in rat brain cells	Kesari, 2008
2.5 uW/cm <sup>2</sup>	RFR affected calcium concentrations in heart muscle cells	Wolke, 1996
2 - 4 uW/cm <sup>2</sup>	Altered cell membranes; acetylcholine-induced ion channel disruption	D'Inzeo, 1988
4 uW/cm <sup>2</sup>	RFR caused changes in hippocampus (brain memory and learning)	Tattersall, 2001
4 - 15 uW/cm <sup>2</sup>	Memory impairment, slowed motor skills and retarded learning in children	Chiang, 1989
5 uW/cm <sup>2</sup>	RFR caused drop in NK lymphocytes (immune function decreased)	Boscolo, 2001
5.25 uW/cm <sup>2</sup>	20 minutes of RFR at cell tower frequencies induced cell stress response	Kwee, 2001
5 - 10 uW/cm <sup>2</sup>	RFR caused impaired nervous system activity	Dumansky, 1974
6 uW/cm <sup>2</sup>	RFR induced DNA damage in cells	Phillips, 1998

Stress proteins, HSP, disrupted immune function	Brain tumors and blood-brain barrier
Reproduction/fertility effects	Sleep, neuron firing rate, EEG, memory, learning, behavior
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Power Density (Microwatts/centimeter <sup>2</sup> - uW/cm <sup>2</sup> )		Reference
8.75 uW/cm <sup>2</sup>	RFR at 900 MHz for 2-12 hours caused DNA breaks in leukemia cells	Marinelli, 2004
10 uW/cm <sup>2</sup>	Changes in behavior (avoidance) after 0.5 hour exposure to pulsed RFR	Navakatikian, 1994
10 - 100 uW/cm <sup>2</sup>	Increased risk in radar operators of cancer; very short latency period; dose response to exposure level of RFR reported.	Richter, 2000
12.5 uW/cm <sup>2</sup>	RFR caused calcium efflux in cells - can affect many critical cell functions	Dutta, 1989
13.5 uW/cm <sup>2</sup>	RFR affected human lymphocytes - induced stress response in cells	Sarimov, 2004
14.75 uW/cm <sup>2</sup>	RFR increased biomarker for cell division in glioma brain tumor cells	Stagg, 1997
20 uW/cm <sup>2</sup>	Increase in serum cortisol (a stress hormone)	Mann, 1998
28.2 uW/cm <sup>2</sup>	RFR increased free radical production in rat cells	Yurekli, 2006
37.5 uW/cm <sup>2</sup>	Immune system effects - elevation of PFC count (antibody producing cells)	Veyret, 1991
45 uW/cm <sup>2</sup>	Pulsed RFR affected serum testosterone levels in mice	Forgacs, 2006
50 uW/cm <sup>2</sup>	Cell phone RFR caused a pathological leakage of the blood-brain barrier in 1 hour	Salford, 2003
50 uW/cm <sup>2</sup>	An 18% reduction in REM sleep (important to memory and learning functions)	Mann, 1996
60 uW/cm <sup>2</sup>	RFR caused structural changes in cells of mouse embryos	Somozy, 1991
60 uW/cm <sup>2</sup>	Pulsed RFR affected immune function in white blood cells	Stankiewicz, 2006
60 uW/cm <sup>2</sup>	Cortex of the brain was activated by 15 minutes of 902 MHz cell phone	Lebedeva, 2000
65 uW/cm <sup>2</sup>	RFR affected genes related to cancer	Ivaschuk, 1999
92.5 uW/cm <sup>2</sup>	RFR caused genetic changes in human white blood cells	Belyaev, 2005
100 uW/cm <sup>2</sup>	Changes in immune function	Elekes, 1996
100 uW/cm <sup>2</sup>	A 24.3% drop in testosterone after 6 hours of CW RFR exposure	Navakatikian, 1994

Stress proteins, HSP, disrupted immune function	Brain tumors and blood-brain barrier
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Disrupted calcium metabolism	Cardiac, heart muscle, blood-pressure, vascular effects

## Reported Biological Effects from Radiofrequency Radiation at Low-Intensity Exposure (Cell Tower, Wi-Fi, Wireless Laptop and 'Smart' Meter RF Intensities)

Power Density (Microwatts/centimeter <sup>2</sup> - uW/cm <sup>2</sup> )		Reference
120 uW/cm <sup>2</sup>	A pathological leakage in the blood-brain barrier with 915 MHz cell RF	Salford, 1994
500 uW/cm <sup>2</sup>	Intestinal epithelial cells exposed to 2.45 GHz pulsed at 16 Hz showed changes in intercellular calcium.	Somozy, 1993
500 uW/cm <sup>2</sup>	A 24.6% drop in testosterone and 23.2% drop in insulin after 12 hrs of pulsed RFR exposure.	Navakatikian, 1994

<b>STANDARDS</b>		
530 - 600 uW/cm <sup>2</sup>	Limit for uncontrolled public exposure to 800-900 MHz	ANSI/IEEE and FCC
1000 uW/cm <sup>2</sup>	PCS STANDARD for public exposure (as of September 1,1997)	FCC, 1996
5000 uW/cm <sup>2</sup>	PCS STANDARD for occupational exposure (as of September 1, 1997)	FCC, 1996
<b>BACKGROUND LEVELS</b>		
0.003 uW/cm <sup>2</sup>	Background RF levels in US cities and suburbs in the 1990s	Mantiplay, 1997
0.05 uW/cm <sup>2</sup>	Median ambient power density in cities in Sweden (30-2000 MHz)	Hamnierius, 2000
0.1 - 10 uW/cm <sup>2</sup>	Ambient power density within 100-200' of cell site in US (data from 2000)	Sage, 2000

Stress proteins, HSP, disrupted immune function	Brain tumors and blood-brain barrier
Reproduction/fertility effects	Sleep, neuron firing rate, EEG, memory, learning, behavior
Oxidative damage/ROS/DNA damage/DNA repair failure	Cancer (other than brain), cell proliferation
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## Reported Biological Effects from Radiofrequency Radiation at Low-Intensity Exposure (Cell Tower, Wi-Fi, Wireless Laptop and 'Smart' Meter RF Intensities)

SAR (Watts/Kilogram)		Reference
0.000064 - 0.000078 W/Kg	Well-being and cognitive function affected in humans exposed to GSM-UMTS cell phone frequencies; RF levels similar near cell sites	TNO Physics and
0.00015 - 0.003 W/Kg	Calcium ion movement in isolated frog heart tissue is increased 18% (P<.01) and by 21% (P<.05) by weak RF field modulated at 16 Hz	Schwartz, 1990
0.000021 - 0.0021 W/Kg	Changes in cell cycle; cell proliferation (960 MHz GSM mobile phone)	Kwee, 1997
0.0003 - 0.06 W/Kg	Neurobehavioral disorders in offspring of pregnant mice exposed in utero to cell phones - dose-response impaired glutamatergic synaptic transmission onto layer V pyramidal neurons of the prefrontal cortex. Hyperactivity and impaired memory function in offspring. Altered brain development.	Aldad, 2012
0.0009 W/Kg	Changes in brain glial cells with TDMA 836.55 MHz frequency	Stagg, 1997
0.0016 - 0.0044 W/Kg	Very low power 700 MHz CW affects excitability of hippocampus tissue, consistent with reported behavioral changes.	Tattersall, 2001
0.0021 W/Kg	Heat shock protein HSP 70 is activated by very low intensity microwave exposure in human epithelial amnion cells	Kwee, 2001
0.0024 - 0.024 W/Kg	Digital cell phone RFR at very low intensities causes DNA damage in human cells; both DNA damage and impairment of DNA is reported	Phillips, 1998
0.0027 W/Kg	Changes in active avoidance conditioned behavioral effect is seen after one-half hour of pulsed radiofrequency radiation	Navakatikian, 1994
0.0035 W/Kg	900 MHz cell phone signal induces DNA breaks and early activation of p53 gene; short exposure of 2-12 hours leads cells to acquire greater survival chance - linked to tumor aggressiveness.	Marinelli, 2004
0.0095 W/Kg	MW modulated at 7 Hz produces more errors in short-term memory function on complex tasks (can affect cognitive processes such as attention and memory)	Lass, 2002
0.001 W/Kg	750 MHz continuous wave (CW) RFR exposure caused increase in heat shock protein (stress proteins). Equivalent to what would be induced by 3 degree C. heating of tissue (but no heating occurred)	De Pomerai, 2000

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SAR (Watts/Kilogram)		Reference
0.001 W/Kg	Statistically significant change in intracellular calcium concentration in heart muscle cells exposed to RFR (900 MHz/50 Hz modulation)	Wolke, 1996
0.0021 W/Kg	A significant change in cell proliferation not attributable to thermal heating. RFR induces non-thermal stress proteins (960 MHz GSM)	Velizarov, 1999
0.004 - 0.008 W/Kg	915 MHz cell phone RFR caused pathological leakage of blood-brain barrier. Worst at lower SAR levels and worse with CW compared to Frequency of pathological changes was 35% in rats exposed to pulsed radiation at 50% to continuous wave RFR. Effects observed at a specific absorption (SA) of > 1.5 joules/Kg in human tissues	Persson, 1997
0.0059 W/Kg	Cell phone RFR induces glioma (brain cancer) cells to significantly increase thymidine uptake, which may be indication of more cell division	Stagg, 1997
0.014 W/Kg	Sperm damage from oxidative stress and lowered melatonin levels resulted from 2-hr per day/45 days exposure to 10 GHz.	Kumar, 2012
0.015 W/Kg	Immune system effects - elevation of PFC count (antibody-producing cells)	Veyret, 1991
0.02 W/Kg	A single, 2-hr exposure to GSM cell phone radiation results in serious neuron damage (brain cell damage) and death in cortex, hippocampus, and basal ganglia of brain- even 50+ days later blood-brain barrier is still leaking albumin (P<.002) following only one cell phone exposure	Salford, 2003
0.026 W/Kg	Activity of c-jun (oncogene or cancer gene) was altered in cells after 20 minutes exposure to cell phone digital TDMA signal	Ivaschuk, 1997
0.0317 W/Kg	Decrease in eating and drinking behavior	Ray, 1990
0.037 W/Kg	Hyperactivity caused by nitric oxide synthase inhibitor is countered by exposure to ultra-wide band pulses (600/sec) for 30 min	Seaman, 1999
0.037 - 0.040 W/Kg	A 1-hr cell phone exposure causes chromatin condensation; impaired DNA repair mechanisms; last 3 days (longer than stress response) the effect reaches saturation in only one hour of exposure; electro- sensitive (ES) people have different response in formation of DNA repair foci, compared to healthy individuals; effects depend on carrier frequency (915 MHz = 0.037 W/Kg but 1947 MHz = 0.040 W/Kg)	Belyaev, 2008

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SAR (Watts/Kilogram)		Reference
0.05 W/Kg	Significant increase in firing rate of neurons (350%) with pulsed 900 MHz cell phone radiation exposure (but not with CW) in avian brain cells	Beason, 2002
0.09 W/Kg	900 MHz study of mice for 7 days, 12-hr per day (whole-body) resulted in significant effect on mitochondria and genome stability	Aitken, 2005
0.091 W/Kg	Wireless internet 2400 MHz, 24-hrs per day/20 weeks increased DNA damage and reduced DNA repair; levels below 802.11 g Authors say "findings raise questions about safety of radiofrequency exposure from Wi-Fi internet access devices for growing organisms of reproductive age, with a potential effect on fertility and integrity of germ cells" (male germ cells are the reproductive cells=sperm)	Atasoy, 2012
0.11 W/Kg	Increased cell death (apoptosis) and DNA fragmentation at 2.45 GHz for 35 days exposure (chronic exposure study)	Kesari, 2010
0.121 W/Kg	Cardiovascular system shows significant decrease in arterial blood pressure (hypotension) after exposure to ultra-wide band pulses	Lu, 1999
0.13 - 1.4 W/Kg	Lymphoma cancer rate doubled with two 1/2-hr exposures per day of cell phone radiation for 18 months (pulsed 900 MHz cell signal)	Repacholi, 1997
0.14 W/Kg	Elevation of immune response to RFR exposure	Elekes, 1996
0.141 W/Kg	Structural changes in testes - smaller diameter of seminiferous	Dasdag, 1999
0.15 - 0.4 W/Kg	Statistically significant increase in malignant tumors in rats chronically exposed to RFR	Chou, 1992
0.26 W/Kg	Harmful effects to the eye/certain drugs sensitize the eye to RFR	Kues, 1992
0.28 - 1.33 W/Kg	Significant increase in reported headaches with increasing use of hand-held cell phone use (maximum tested was 60 min per day)	Chia, 2000
0.3 - 0.44 W/Kg	Cell phone use results in changes in cognitive thinking/mental tasks related to memory retrieval	Krause, 2000
0.3 - 0.44 W/Kg	Attention function of brain and brain responses are speeded up	Preece, 1999
0.3 - 0.46 W/Kg	Cell phone RFR doubles pathological leakage of blood-brain barrier permeability at two days (P=.002) and triples permeability at four days (P=.001) at 1800 MHz GSM cell phone radiation	Schirmacher, 2000

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SAR (Watts/Kilogram)		Reference
0.43 W/Kg	Significant decrease in sperm mobility; drop in sperm concentration; and decrease in seminiferous tubules at 800 MHz, 8-hr/day, 12 weeks, with mobile phone radiation level on STANDBY ONLY (in rabbits)	Salama, 2008
0.5 W/Kg	900 MHz pulsed RF affects firing rate of neurons ( <i>Lymnea stagnalis</i> ) but continuous wave had no effect	Bolshakov, 1992
0.58 - 0.75 W/Kg	Decrease in brain tumors after chronic exposure to RFR at 836 MHz	Adey, 1999
0.6 - 0.9 W/Kg	Mouse embryos develop fragile cranial bones from in utero 900 MHz The authors say "(O)ur results clearly show that even modest exposure (e.g., 6 min daily for 21 days" is sufficient to interfere with the normal mouse developmental process"	Fragopoulou, 2009
0.6 and 1.2 W/Kg	Increase in DNA single and double-strand DNA breaks in rat brain cells with exposure to 2450 MHz RFR	Lai & Singh, 1996
0.795 W/Kg	GSM 900 MHz, 217 Hz significantly decreases ovarian development and size of ovaries, due to DNA damage and premature cell death of nurse cells and follicles in ovaries (that nourish egg cells)	Panagopoulous, 2012
0.87 W/Kg	Altered human mental performance after exposure to GSM cell phone radiation (900 MHz TDMA digital cell phone signal)	Hamblin, 2004
0.87 W/Kg	Change in human brainwaves; decrease in EEG potential and statistically significant change in alpha (8-13 Hz) and beta (13-22 Hz) brainwave activity in humans at 900 MHz; exposures 6/min per day for 21 days (chronic exposure)	D'Costa, 2003
0.9 W/Kg	Decreased sperm count and more sperm cell death (apoptosis) after 35 days exposure, 2-hr per day	Kesari, 2012
< 1.0 W/Kg	Rats exposed to mobile phone radiation on STANDBY ONLY for 11-hr 45-min plus 15-min TRANSMIT mode; 2 times per day for 21 days showed decreased number of ovarian follicles in pups born to these pregnant rats. The authors conclude "the decreased number of follicles in pups exposed to mobile phone microwaves suggest that intrauterine exposure has toxic effects on ovaries."	Gul, 2009
0.4 - 1.0 W/Kg	One 6-hr exposure to 1800 MHz cell phone radiation in human sperm cells caused a significant dose response and reduced sperm motility and viability; reactive oxygen species levels were significantly increased after exposure to 1.0 W/Kg; study confirms detrimental effects of RF/MW to human sperm. The authors conclude "(T)hese findings have clear implicatiions for the safety of extensive mobile phone use by males of reproductive age, potentially affecting both their fertility and the health and wellbeing of their offspring."	De Iuliis, 2009

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SAR (Watts/Kilogram)		Reference
1.0 W/Kg	Human semen degraded by exposure to cell phone frequency RF increased free-radical damage.	De Iuliis, 2009
1.0 W/Kg	Motility, sperm count, sperm morphology, and viability reduced in active cell phone users (human males) in dose-dependent manner.	Agarwal, 2008
1.0 W/Kg	GSM cell phone use modulates brain wave oscillations and sleep EEG	Huber, 2002
1.0 W/Kg	Cell phone RFR during waking hours affects brain wave activity. (EEG patterns) during subsequent sleep	Achermann, 2000
1.0 W/Kg	Cell phone use causes nitric oxide (NO) nasal vasodilation (swelling inside nasal passage) on side of head phone use	Paredi, 2001
1.0 W/Kg	Four-fold increase in eye cancer (uveal melanoma) in cell phone users	Stang, 2001
1.0 W/Kg	Increase in headache, fatigue and heating behind ear in cell phone users	Sandstrom, 2001
1.0 W/Kg	Significant increase in concentration difficulties using 1800 MHz cell phone compared to 900 MHz cell phone	Santini, 2001
1.0 W/Kg	Sleep patterns and brain wave activity are changed with 900 MHz cell phone radiation exposure during sleep	Borbely, 1999
1.4 W/Kg	GSM cell phone exposure induced heat shock protein HSP 70 by 360% (stress response) and phosphorylation of ELK-1 by 390%	Weisbrot, 2003
1.46 W/Kg	850 MHz cell phone radiation decreases sperm motility, viability is significantly decreased; increased oxidative damage (free-radicals) significantly decreased; increased oxidative damage (free-radicals)	Agarwal, 2009
1.48 W/Kg	A significant decrease in protein kinase C activity at 112 MHz with 2-hr per day for 35 days; hippocampus is site, consistent with reports that RFR negatively affects learning and memory functions	Paulraj, 2004
1.0 - 2.0 W/Kg	Significant elevation in micronuclei in peripheral blood cells at 2450 MHz (8 treatments of 2-hr each)	Trosic, 2002
1.5 W/Kg	GSM cell phone exposure affected gene expression levels in tumor suppressor p53-deficient embryonic stem cells; and significantly increased HSP 70 heat shock protein production	Czyz, 2004

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SAR (Watts/Kilogram)		Reference
1.8 W/Kg	Whole-body exposure to RF cell phone radiation of 900-1800 MHz 1 cm from head of rats caused high incidence of sperm cell death; deformation of sperm cells; prominent clumping together of sperm cells into "grass bundle shapes" that are unable to separate/swim. Sperm cells unable to swim and fertilize in normal manner.	Yan, 2007
2.0 W/Kg	GSM cell phone exposure of 1-hr activated heat shock protein HSP 27 (stress response) and P38 MAPK (mutagen-activated protein kinase) that authors say facilitates brain cancer and increased blood-brain barrier permeability, allowing toxins to cross BBB into brain	Leszczynski, 2002
2 W/Kg	900 MHz cell phone exposure caused brain cell oxidative damage by increasing levels of NO, MDA, XO and ADA in brain cells; caused statistically significant increase in 'dark neurons' or damaged brain cells in cortex, hippocampus and basal ganglia with a 1-hr exposure for 7 consecutive days	Ilhan, 2004
2.6 W/Kg	900 MHz cell phone exposure for 1-hr significantly altered protein expression levels in 38 proteins following irradiation; activates P38 MAP kinase stress signalling pathway and leads to changes in cell size and shape (shrinking and rounding up) and to activation of HSP 27, a stress protein (heat shock protein)	Leszczynski, 2004
2.0 - 3.0 W/Kg	RFR accelerated development of both skin and breast tumors	Szmigielski, 1982
2 W/Kg	Pulse-modulated RFR and MF affect brain physiology (sleep study)	Schmidt, 2012

STANDARDS		
0.08 W/Kg	IEEE Standard uncontrolled public environment (whole body)	IEEE
0.4 W/Kg	IEEE Standard controlled occupational environment (whole body)	IEEE
1.6 W/Kg	FCC (IEEE) SAR limit for 1 gram of tissue in a partial body exposure	FCC, 1996
2 W/Kg	ICNIRP SAR limit for 10 grams of tissue	ICNIRP, 1996

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Disrupted calcium metabolism	Cardiac, heart muscle, blood-pressure, vascular effects