

Environmental Impacts on Neighborhoods (Natural Environment and Social Environment)

Natural Environment:

Energy Use

When it comes to energy consumption, 'homegrown' (cannabis) isn't green. A new study details a surefire way you can save on household energy bills and lower your carbon footprint: Don't grow pot. Matt Hickman, Eco-living expert, <http://www.mnn.com/your-home/organic-farming-gardening/blogs/when-it-comes-to-energy-consumption-homegrown-cannabis-isn>

Carbon Footprint

According to a 2011 report, indoor marijuana growing may account for one percent of the entire country's electricity consumption, and this energy use costs about \$6 billion annually. The report also claims that the carbon dioxide pollution from this electricity use "plus associated transportation fuels equals that of 3 million cars." Source: by Lawrence Berkeley National Laboratory researcher Evan Mills, Ph.D, **Energy up in Smoke: The Carbon Footprint of Indoor Cannabis Production**, <http://evan-mills.com/energy-associates/Indoor.html>

Water Use

Water-loving cannabis plants can easily use up to 15 gallons per day. While water usage may vary widely, one study of an outdoor cannabis farm during the 2011 growing season found the farm used 40,000 gallons of water to grow 25 large outdoor plants, from cracking the seeds to harvest. This comes to 1,600 gallons of water per plant during the entire growing season. <http://www.prweb.com/releases/marijuana-attorney/california/prweb9316223.htm>

Contamination Risks – molds and fungi

Chemicals are often added to enhance plant growth or for pest and disease control. While marijuana is being stored (during cultivation or by the user), certain types of molds and fungi may unintentionally grow on the plant. Some substances can be added by retailers to increase the weight or perceived quality of marijuana. <http://adai.uw.edu/marijuana/factsheets/contamination.htm>

Heavy Metals

The cannabis species draws heavy metals and toxins from the soil it's grown in and as a result the final dried product can contain very dangerous levels of toxic chemicals that you fast track into the blood stream. <http://voices.yahoo.com/stop-smoking-marijuana-body-will-thank-you-2302136.html>

The Distribution of Heavy Metals Content in Cannabis Leaf and Seed, Pakistan Journal of Nutrition. 2005. Abstract: The distribution of heavy metals content in cannabis leaf and seed were assayed / carried, using an atomic absorption spectrometers model Perkin Elmer 3110. The heavy metals determined in both samples mean arsenic, cadmium, chromium, iron, nickel, lead mercury and manganese. The results obtained revealed that metal levels in cannabis leaf exceeded those of cannabis seed except in manganese, which had the highest metal content among all the metals determined. The results furthers showed that As, Cd., Cr, Fe, Ni, Ph and Hg levels in cannabis leaf exceeded those of the cannabis seed. Therefore cannabis leaves appear to be more dangerous to health than the seeds.

Conclusion and suggestions: The results obtained in this study revealed that As, Cd., Cr, Fe, Ni, Ph and Hg levels in cannabis leaf exceeded those of the cannabis seed. Manganese levels in both samples were the highest among other metals studied. Kasimu, K.S., 1982. Generally, the levels of toxic metals may be attributed to

the nature of the drug and area of cultivation. Education about the harms and health implications of cannabis sativa must include this chemical/heavy metal information to increase public awareness about the real and comprehensive dangers of this drug. <http://www.pjbs.org/pjnonline/fin356.pdf>

Toxins

In a study by the journal *Chemical Research in Toxicology*, Health Canada researchers found higher levels of certain toxins in marijuana smoke than in tobacco smoke. The marijuana smoke had 20 times as much ammonia and five times as much hydrogen cyanide and nitrogen oxides, possibly due to higher levels of nitrate fertilizer traces in the marijuana. Then again, only the tobacco smoke contained the potent carcinogens known as tobacco-specific nitrosamines, and had "moderately higher levels" of potentially hazardous compounds such as formaldehyde, acetaldehyde, and polycyclic aromatic hydrocarbons. "Cannabis smoke 'has more toxins,'" BBC News reported, warning that ammonia is "linked to cancer," while hydrogen cyanide and nitrogen oxides "are linked to heart and lung damage respectively." *The Guardian* agreed: "Cannabis smoke more toxic than puffing tobacco." Even *EarthTimes* ("Cannabis smoke more harmful than tobacco smoke") and *New Scientist* ("Inhaled cannabis is more toxic than tobacco smoke"). But typically marijuana users smoke less each day than tobacco smokers, so their daily dose of toxins is likely lower than cigarette smokers. <http://reason.com/blog/2007/12/19/the-dose-makes-the-poison-even>

Plant size

According to one online marijuana site, you can "Grow Monster-Size Medical Marijuana Plants Indoors to Maximize Yield and THC." Like any other horticultural or agricultural activity, "marijuana growers are constantly trying to maximize yields." A medical marijuana plant with an exclusive 1000 watt light can easily reach 3-6 feet in height and yield 1-2 lbs of medicine.

"Chicago Pot Farm's Plants as Big as Trees" -- Police in a helicopter stumbled upon what may be the largest outdoor pot farm in the city's history. Planted in rows and spread over an area the size of two football fields, as many as 1,500 plants averaging 6-foot tall were growing amidst heavy brush in an industrial area on the city's South Side. <http://abcnews.go.com/blogs/headlines/2012/10/chicago-pot-farms-plants-as-big-as-trees/>

Odor

"Marijuana odors put off neighbors. *Smell more potent as harvest time approaches*". Ashland, Oregon. "It was like having a family of skunks living in our backyard," Kauder said. "It's my understanding that marijuana that's growing has a very distinctive odor. It's sometimes referred to as 'skunk weed.'"... After multiple complaints to city of Ashland officials, Kauder's neighbor was eventually cited under an Ashland law that prohibits odor nuisances.

<http://www.dailytidings.com/apps/pbcs.dll/article?AID=/20120906/NEWS02/209060303>

"Boulder [Colorado] sniffs out problem with medical marijuana odors -- City receiving complaints about lingering smells." The unmistakable and sometimes overwhelming bouquet of marijuana has prompted a handful of Boulder residents and businesses to complain about the smell radiating from some dispensaries and greenhouses in the city. http://www.coloradodaily.com/business/ci_17002230#ixzz2KcfC73ga

Illegal Growing: As the marijuana industry and market becomes entrenched, illegal outdoor grow operations begin to proliferate as well. In California, in a 37-square-mile patch of forest, state scientists counted 281 outdoor pot farms, and 286 greenhouses, containing an estimated 20,000 marijuana plants – mostly fed by water diverted from creeks of a fork of the Eel River, spawning grounds for endangered coho salmon and other threatened fish. Marijuana is a water-intensive plant. "... you get a lot of marijuana sucking up a lot of water... This threatens species we are spending millions of dollars to recover." The marijuana boom that came with the sudden rise of medicinal cannabis in California has wreaked havoc on the fragile habitats of the North Coast and other parts of the state. With little or no oversight, farmers have illegally mowed down timber, graded mountaintops for sprawling greenhouses, dispersed poisons and pesticides, drained streams and polluted watersheds. Thos illegal growers operate in the shadows and scientists have little hard data on their collective impact, but they are getting a snapshot. Pictures posted at the LA Times.com. "Environmental impact of

marijuana-growing in California”, Posted by Jerome Adamstein, December, 22, 2012, <http://framework.latimes.com/2012/12/22/environmental-impact-of-marijuana-growing-california/#/0>,

Environmental Impacts of Illegal Outdoor Grow Operations

Medical marijuana has been a reality in California since 1996. Since then, illegal grow sites have proliferated along with dispensaries. A domestic black market for marijuana proliferates. Officials cite increased environmental degradation at illegal grow sites on the North Coast of California. Damage includes diverted streams, unpermitted soil grading, the clear cutting of trees, heavy fertilizer and pesticide usage and tons of garbage left in some of the state’s most pristine public lands Source: ‘A huge, huge mess’; officials talk environmental impacts of marijuana, and the need for more study, clean up” Thadeus Greeson/TheTimes-Standard.com, Sunday February 10, 2013. , http://www.times-standard.com/localnews/ci_21455470/.

A peer reviewed scientific study by UC Davis researchers quantify impacts of large-scale, illicit pot grows and concludes that the heavy use of high-powered rodenticides at outdoor marijuana grows is likely a leading cause of death for the Pacific fisher, a reclusive weasel-like creature that is currently a candidate for federal protection under the endangered species act. When police raid a grow site, it’s often the thousands of marijuana plants that garner the attention. But other items found at the grow sites are what may actually pose a larger danger to the public. Investigators find complex mazes of plastic irrigation lines, large containers of high-powered pesticides, fertilizers and rodenticides. Also left behind at the illegal grow sites are mounds of soda cans, and human feces from holes dug and used as makeshift outhouses.

The state of California has had to establish a Campaign Against Marijuana Planting, and federal drug enforcement agencies have joined with them to establish the Cannabis Eradication and Reclamation Team, with a focus on pulling pot plants and cleaning up after the growers who planted them illegally. http://www.timesstandard.com/localnews/ci_21455470/.

Pot: Not so green after all? May 21, 2010 By Shannon Service California’s marijuana industry is worth an estimated \$14 billion. But large marijuana growing operations — most of which are illegal — are polluting local ecosystems on an industrial scale in rural counties and places as unlikely as state parks.
<http://www.pbs.org/wnet/need-to-know/environment/pot-not-so-green-after-all/839/>

Social Environment:

Crime

Marijuana is an all cash business. Banks will not deal with dispensaries, as marijuana is federally illegal. The marijuana business violates Federal law and any bank that does business with the industry would lose its FDIC backing. As a result marijuana dispensaries are repositories of marijuana crops with significant street value and large amounts of cash. Problems of increased crime around dispensaries, and home invasions of “patients” and “caregivers” that cultivate for personal use, are well documented in other medical marijuana states. In 2013, Massachusetts and Rhode Island are experiencing similar negative activity.

Marijuana grow house uncovered in home invasion, Marshfield, MA, 1/23/13
<http://www1.whdh.com/news/articles/local/south/12009663187732/marijuana-grow-house-uncovered-in-home-invasion/>
<http://www.bostonglobe.com/metro/2013/01/23/armed-home-invasion-marshfield-leads-discovery-marijuana-growing-operation/lq4H8t20heblEHbEkEmq0J/story.html>

Police bust pot grow house in Edgartown, MA, February 1, 2013
<http://www.mvtimes.com/2013/02/01/police-bust-pot-grow-house-edgartown-14290/>

Home invasion of Providence, RI, medical marijuana grower , Providence Journal, March 8, 2012. Gunmen demanded cash, and they took two laptops, two cell phones, and two ounces of marijuana in a jar, according to a police report.
<http://news.providencejournal.com/breaking-news/2012/03/home-invasion-o.html>

Four arrested in S. Vrain, CO, home invasion, One shot in chest in intensive care. January 17, 2013. Colorado Springs, CO. "... four allegedly targeted the apartment, where they planned to break in and steal marijuana and money, according to an arrest affidavit." <http://www.gazette.com/articles/three-149850-home-vrain.html#ixzz2Kb5bk3jZ>, <http://www.gazette.com/articles/home-149512-arrested-three.html>

"Police: 2 intruders shot, killed at marijuana grow house" PUYALLUP, Wash. - Two heavily armed intruders who forced their way into a home with an illegal marijuana grow operation were shot and killed by the homeowner Thursday morning near Puyallup, officials said. **By KOMO Staff Published: Dec 6, 2012 at 9:19 AM PST**
<http://www.komonews.com/news/local/Police-2-intruders-shot-killed-at-marijuana-grow-house--182391481.html>

Nuisance

Everett, WA, council votes to call pot dispensaries nuisances, Thursday, December 20, 2012, <http://www.heraldnet.com/article/20121220/NEWS01/712209882> Some of the issues that city officials say prompted action are dispensaries that skirt the law, odor emitted from growing pot plants and safeguards against criminals who prey on the medical pot patients to steal the drug and sell it on the black market.

Declared a nuisance in Berkeley, CA, medical marijuana collective ordered closed, By Doug Oakley, Oakland Tribune http://www.mercurynews.com/medical-marijuana/ci_22090535/declared-nuisance-berkeley-medical-marijuana-collective-ordered-closed Posted: 11/29/2012 10:25:12 AM PST. Members of the Sacramento Street Improvement Association who live around the corner and who threatened to sue the group over allegations it brought crime, trash and street drug sales said he won't be convinced [the dispensary business] is gone until he sees the space empty.

Nevada: Marijuana Nuisance Ordinance Numbers So Far, Published Nove 5, 2012.

<http://yubanet.com/regional/Marijuana-Nuisance-Ordinance-Numbers-So-Far.php#.URjuHqX7Lmc>

November 2, 2012 - The Nevada County Sheriff's Office formed a marijuana nuisance ordinance enforcement team that consisted of Sgt. Ray Kress and Deputy Mark Hollitz. The team's goal was to respond to all marijuana nuisance complaints and enforce Marijuana Nuisance Ordinance that was approved on May 5, 2012, by the Nevada County Board of Supervisors. The Nevada County Sheriff's Office has received 294 citizen complaints concerning marijuana nuisance to date.

<http://www.theunion.com/news/ticker/3066908-113/marijuana-ordinance-county-abatement>

Contention in Neighborhoods

Medical pot's side effects *Unhappy neighbors cite gunshots, threats as grove of plants tops 8 feet and odors circulate*
<http://www.pressdemocrat.com/article/20081027/NEWS/810270310#>

A Santa Rosa, CA, man says he has nothing against people who use marijuana for medical reasons. But after another fall harvest season in which his neighbor's marijuana plants grew well above the 8-feet, his compassion finally gave out. A feud between two neighbors represents a dramatic showdown over the right of one homeowner under California law to grow marijuana versus the right of other resident not to have their quality of life or safety threatened by that activity. In a photo outside his home, Gardea posted large homemade sign emblazoned with hand lettering: "Please don't pull a home invasion here. Indoor buds NEXT DOOR at #116. See Allan – [arrow pointing next door]."

Decreased Property Values

"Move over, meth: Marijuana 'grow houses' an increasing menace." A home that was used to grow pot can be a nightmare for a homebuyer, with problems ranging from mold to bad wiring. By Melinda Fulmer of MSN Real Estate. <http://realestate.msn.com/article.aspx?cp-documentid=26924092>

Landlord and Real Estate Issues

A “Growing” Problem – Medical Marijuana Laws Create Liability for Lansing Landlords, Dustin McMahon, Lansing, MI. “It is important for landlords to understand that he or she cannot be held liable for medical marijuana being present in a tenant’s dwelling. However, if a landlord has knowledge that illegal sales of drugs are taking place, especially in common areas of the rental unit, there is potential liability under more general premises liability statutes.”

<http://www.law.msu.edu/clinics/rhc/medmarijuana.pdf>

“Medical marijuana: Big problems for landlords”. Legalizing medical marijuana in Massachusetts now conflicts with federal law, which outlaws marijuana entirely. As a result, property owners whose apartments will be used to grow and distribute marijuana could have their properties summarily taken away under federal law. This civil asset forfeiture does not require any criminal charge or conviction against the landlord. It only requires a “substantial connection” between drug activity and a property, and that connection may not even require the landlord’s awareness. Landlord concerns include: property damage, denial of access to their property because the law requires an “enclosed locked facility accessible only to dispensary agents” and marijuana cardholders, smoking, crime, insurance and mortgages.

Small Property Owners Association, Families who provide 75% of all rental housing.

<http://spoa.com/medical-marijuana-passes-63-37-2/>

Problems with Medical Marijuana Facilities in Commercial Real Estate Properties, ITRA, International Tenant Representative Alliance, Denver, Colorado.

1) Multi-tenant Industrial Buildings with Grow Operations + Retail Dispensaries

a) Marijuana smoke seepage into other tenants’ suites, when on-site smoking is allowed, likely violating the Colorado Clean Indoor Air Act & other tenants’ lease rights for the “quiet and peaceful enjoyment” of their premises.

b) Mold contamination from the marijuana growing process can cause airborne respiratory allergies & serious illnesses for other tenants, again violating their lease rights for the “quiet and peaceful enjoyment” of their premises.

c) Mold contamination from the growing process can cause Environmental Damage to the building, resulting in costly Environmental Remediation & potential loss of property value for the landlord.

d) Strong odors from the marijuana growing process can disturb other tenants & be a nuisance, again violating their lease rights for the “quiet and peaceful enjoyment” of their premises.

e) Magnet targets for robbery of cash, prepared marijuana products & marijuana plants raises safety issues for current & prospective tenants, plus their employees & customers. (Denver Police Dept. can speak directly to this issue.)

f) Given “a”, “b”, “c” & “e” above, will insurance companies increase insurance rates for all tenants in a property that has a Medical Marijuana Facility as a tenant?

g) Very heavy water user as compared to other tenants, all of which are usually on the same water meter & typically only pay for their pro-rata share of water usage based on SF leased, not on actual usage, which can result in other tenants subsidizing the cost of heavy water usage by Medical Marijuana Facilities.

h) Heavy visitor traffic & parking compared to most other Industrial tenants.

i) Disruption of other tenants’ “quiet and peaceful enjoyment” can lead to landlord’s lease defaults, breaking of leases by other tenants and/or a decrease in lease renewals by other tenants, any of which will likely result in loss of the landlord’s long-term property value.

j) Potentially problematic business image issues for some existing tenants can affect their customers’ willingness to make on-site visits to a tenant’s premises.

k) Potentially problematic business image issues for other tenants can affect landlord’s retention of existing tenants & attraction of new tenants & therefore the landlord’s long-term property value.

l) Questionable credit of some Medical Marijuana Facilities, as many are startups that do not have experience in this business, thereby making them risky tenants.

m) Unsettled & volatile legal issues surrounding Medical Marijuana & Medical Marijuana Facilities make them risky tenants in terms of living out the term of their leases.

2) Multi-tenant Office & Retail Buildings with Retail Dispensaries Only

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3) Neighboring Properties - Depending upon the visibility & reputation/history of a Medical Marijuana Facility in a business district or a mixed-use neighborhood, could this also affect the values of neighboring properties?

http://www.maclw.com/articles/Problems_wMed_Marij_Facilities12-12-09.pdf

Traffic Safety Issues

"*Marijuana Use Increases Risk of Traffic Crashes and Deaths.*" A meta-analysis was conducted using nine epidemiological studies of motor vehicle collisions that measured recent cannabis use and also included control groups. Experimental and simulation studies were excluded. The results indicated that driving under the influence of cannabis was associated with a 92% increased risk of vehicular crashes. Important is the fact that such driving was associated with a 110% increase in fatal crashes. It appears that the public is generally unaware of the significant risk of marijuana use to traffic accidents and deaths. <http://www2.potsdam.edu/hansondj/files/Marijuana-Use-Increases-Risk-of-Traffic-Crashes-and-Deaths.html>

DrugFacts: Drugged Driving A study of over 3,000 fatally injured drivers in Australia showed that when marijuana was present in the blood of the driver, he or she was much more likely to be at fault for the accident. Additionally, the higher the THC concentration, the more likely the driver was to be culpable.

<http://www.drugabuse.gov/publications/drugfacts/drugged-driving>

Smoke and Mirrors: Driving While High on Marijuana Doubles One's Chances of a Serious Car Crash

By [Katherine Harmon](#) | February 9, 2012 |

Many drug users have claimed that a few puffs of pot before getting behind the wheel are perfectly harmless. This article in SCIENTIFIC AMERICAN explains that a new study, however, shows that drivers who smoke marijuana within a few hours of hitting the road are almost twice as likely as stone-sober motorists to be in a crash that results in serious injury or death. Authors of the new paper, published online Thursday in the *British Medical Journal* (BMJ), sifted through nine previous studies to develop a clearer picture of the risks to users who light up before revving up.

<http://blogs.scientificamerican.com/observations/2012/02/09/smoke-and-mirrors-driving-while-on-marijuana-doubles-ones-chances-of-a-serious-car-crash/>

Drug Tourism

Concerns raised over 'cannabis tourism' as two U.S. states legalize marijuana use.

PUBLISHED: 07:11 EST, 9 November 2012

Denver has long drawn thrill-seekers to its snowy peaks and thriving ski scene. But a newly passed recreational marijuana law has raised concerns about whether it will open the door to so-called 'pot tourism'. This week, both Colorado and Washington State became the first U.S. states to legalize the possession of marijuana for recreational use. 'Some folks might come to Colorado to enjoy some marijuana as will be their right. So what?' said Betty Aldworth, advocacy director for the Colorado marijuana campaign. But some fear that the vote could deter tourists. 'Colorado's brand will be damaged, and we may attract fewer conventions and see a decline in leisure travel,' Visit Denver CEO Richard Scharf said in a statement before the vote.

<http://www.dailymail.co.uk/travel/article-2230449/Colorado-Washington-state-legalise-marijuana-use-raising-concerns-cannabis-tourism.html#axzz2KcylUeWF>

US tourism fears marijuana legalization impact. 09 November 2012

The legalization of marijuana in Colorado and Washington has led some to fear the states could become new 'drug tourism' destinations akin to Amsterdam.

<http://www.visabureau.com/america/news/09-11-2012/us-tourism-fears-marijuana-legalisation-impact.aspx>

Dutch Court Upholds Ban On Tourists In Cannabis Cafes Reuters | Posted: 04/27/2012 7:11 am

AMSTERDAM, April 27 (Reuters) - A controversial law that will make it harder for foreign tourists to buy cannabis at the Netherlands' famous coffee shops has been upheld by a Dutch court. The law, which reverses 40 years of liberal drugs policy in the Netherlands, is targeted at the many foreigners who have come to see the country as a soft drugs paradise and to tackle a rise in crime related to the drug trade. The government in October launched a plan to ban what it considered to be highly potent forms of cannabis - known as "skunk" - placing them in the same category as heroin and cocaine http://www.huffingtonpost.com/2012/04/27/dutch-court-upholds-ban-o_n_1458428.html

Some Possible Solutions

- Require regular inspections of all home grow and all treatment center operations to ensure health and safety.
- Limit the number of patients a caregiver may grow for.
- Limit the number of plants a dispensary may grow at one time.
- Limit the business volume of each dispensary in an effort to establish a maximum value of cash and assets that expose the business to greater risk for armed robbery and home invasions.
- Link additional public safety costs for marijuana related crime and DUI's to additional fees assessed on the marijuana industry.
- Assure that municipalities can build their own fee structure to cover local social and environmental costs.
- Assure landlord right to choose whether to allow cultivation and use of medical marijuana on their property.
- Explicitly exclude a patient's need for medical marijuana as a disability with respect to anti-discrimination laws. The Oregon Supreme Court recently ruled that landlords in that state may choose not to have medical marijuana tenancies.
- Give Landlords the right to access any apartment with marijuana grow operations in case of emergency, to inspect for damage or health and safety risks and to make repairs.
- Assure that a landlord's right to establish a no-smoking policy that includes medical marijuana.
- Alternatively, the Legislature could prohibit marijuana growing entirely in residential properties.
- Roadside marijuana sobriety tests for pot will reduce traffic fatalities as rapidly as breathalyzers did for alcohol.
- Fees to cover training of public safety officials in drug testing and symptom recognition.
- Restrict Massachusetts Medical Marijuana cards to residents whose primary residence is Massachusetts.
- Prohibit reciprocity with out-of-state programs.