



Americans Against Legalizing Marijuana

WATER AND WILDLIFE OR WEED?

January 13, 2022

The issues of water availability and the killing of wildlife due to contaminants from marijuana growing are serious issues in states that have legalized marijuana such as California. The huge number of marijuana grows are having very negative effects on water availability, water quality, aquatic habitats, riparian habitat, wetlands and springs and rivers.



Pictured This male fisher was found dead near Yosemite National Park. Tissue samples confirmed the animal was killed by rat poison.
ELIZABETH SHOGREN / NPR

Wildlife may be exposed to dangerous chemicals due to marijuana growing. Animals exposed to these chemicals “drown in their own blood or stumble around until they’re eaten themselves, passing the poison up the food chain to predators like owls and fishers.” 1

Executive Summary

1. Marijuana growers are responsible for theft of water during droughts.
2. This water is needed elsewhere to grow food and to fight wild fires.
3. Many “legal” and all illegal marijuana grows are not regulated safely.
4. The increase in water theft has exposed the vulnerabilities in the state systems to secure water and the complications of weak marijuana law enforcement.
5. Current marijuana cultivation activities have led to significant environmental impacts, including habitat degradation, loss and fragmentation or burying of streams, diversion of surface waters, and impacts to water quality including sediment, garbage, pesticides and petroleum products.
6. Intimidation by marijuana growers is an impediment to more robust reporting and enforcement.
7. Much of the marijuana industry is out of control and has made water more scarce and more polluted.
8. Lack of clean water and pollution is killing wildlife.

Americans Against Legalizing Marijuana is an all-volunteer IRS approved non-profit 501(c)(3) dedicated to providing information on the harms of marijuana to individuals and our Country based on the premise of No Use of Any Illegal Drug and No Illegal Use of Legal Drugs.

9. Although there may be some regulations there are massive numbers of illegal grows that are not regulated. 2

Water usage

Marijuana legalization has allowed black market growing and selling to continue because marijuana advertising fuels demand. Some states produce more marijuana than is consumed within their state. The excess is shipped illegally across state lines to the east where prices are higher. Local law enforcement agencies are completely overwhelmed with marijuana related criminal activities. 3 Legalization was supposed to reduce demands on law enforcement.

Theft of water

Recent press reports document that marijuana growers are stealing scarce water. Water thieves working for illicit marijuana operations are stealing water from wells, aquifers, remote filling stations and tap into fire hydrants and improperly shut off water valves. This leads to a limited water supply for fighting fires and food production. 4



The majority of California agriculture is subject to heavy water use regulation. Farmers of most irrigated crops help their plants through the dry summer months by filling water tanks in the winter, when streams and springs are full. By contrast, many marijuana growers draw surface water during the plant's summer growing season, when drought conditions are worse. Taking water directly from rivers and streams in the summer not only reduces the water available for agriculture but also threatens wildlife species, especially birds and fish. 5

Farmers, ranchers and licensed marijuana growers fight to obtain water through legal channels but illegal pot growers are stealing it or purchasing it from illicit sources. The increase in water theft has exposed the vulnerabilities in the state systems to secure water and the complications of weak marijuana law enforcement. Intimidation by marijuana growers is an impediment to more robust reporting and enforcement. In addition, the political power of marijuana interests is undermining the ability of citizens to get local jurisdictions to address these problems. 6

Watersheds have been losing water flow at an "alarming rate" because of illegal marijuana cultivation. It is estimated that there are 40-50,000 illegal grow sites in California using precious water. Each pot plant requires between 6 and 8 gallons of water per day. For example, illegal grows in just three southern California counties use an astounding 5.4 million gallons of water each day. 7

The Science

A study suggests that widespread reliance on groundwater wells for marijuana irrigation may result in stream flow depletion. Well use by marijuana farms is common in the 11 top marijuana producing counties in California. In eight of these 11 counties, more than one quarter of farms are using wells that are located outside of groundwater basins subject to state groundwater use regulations. 8

Some grows use 50 percent more water because of inefficient irrigation systems and added stressors like pests, pathogens, and drier weather at higher elevations. Some trespass growers leave their irrigation systems running around the clock throughout the year, even when nothing is growing. Multiply that by hundreds of thousands of plants and there is a serious water problem. A study by the California Department of Fish and Wildlife estimated that trespass marijuana grows used about 300 million gallons of water per square mile, roughly the same as almond orchards. 9

California and other states that have legalized marijuana have droughts that make it very clear that clean water is a precious and critically important natural resource essential to life. Much of the marijuana industry in those states is out of control and is threatening this natural resource. Legalization of marijuana has made water more scarce and more polluted.

Wildlife or Weed?

Marijuana cultivation has caused significant environmental damage, including discharges of pollutants to surface water and ground water, erosion and sedimentation, and illegal diversions of surface water. The federal and state laws that all farmers must follow have been ignored by many marijuana growers. There is improper use of chemicals and fertilizers at marijuana grows. Even many licensed growers do not abide by the rules. 10



Pictured These barred owls died from anticoagulant rodenticide, which causes rats to bleed out, and inevitably accumulates in apex predators like owls. The poison most likely came from an illegal cannabis operation. MATT SIMON / WIRED

Fertilizers with high nitrates are of particular concern as nitrate loading contributes to cyanobacteria that kill fish and animals. Pesticides used at grows are often not approved for use on crops for human consumption. Current marijuana cultivation activities have led to significant environmental impacts, including habitat degradation, loss and fragmentation or burying of streams, diversion of surface waters, and impacts to water quality including sediment, garbage, pesticides and petroleum products. 11

The illegal growers often use chemical fertilizers and pesticides restricted or banned in the United States, including carbofuran, diazinon and zinc phosphide. "Carbofuran, one of these

banned pesticides, can cause headaches, nausea, vomiting, convulsions, and even death to humans or animals that consume it. Diazinon, another chemical found at many illegal grows sites, can cause breathing difficulties, weakness, blue lips, convulsions, and coma.” 12 Carbofuran is turning up at 60 to 70% of illegal grow sites, often mixed in bottles with no labels. One third of a teaspoon can kill a 300 lb bear. 13

Growers have turned thousands of acres of woodlands into waste dumps so toxic that law enforcement officers who inadvertently touched plants and equipment require hospitalization. Many animals are dying. Many contaminated rivers and creeks flow into the water supply system in our most populous areas. Streams may test positive for chemicals more than a year after illegal grows are cleared. It may take months or years for chemicals to migrate through the soil. 14

The Huffington Post noted that many of the chemicals applied to marijuana plants are intended only for lawns and other non-edible uses. They reported that marijuana pesticide contamination is widespread and in some cases pesticide residue levels are 1,600 times greater than the legal desirable amount. 15

Impact of Water Pollution

Normal agriculture in California follows strict requirements in the application of chemicals and fertilizers. Products used must be labeled as approved for use on the agricultural product being grown with application rates, methods, time of day, wind speed, containment. In the case of chemicals there must be OSHA compliant safety equipment used and blood testing of workers. Air and water monitoring both upstream and downstream are often required to insure there is no migration to of chemical onto neighboring property via air or into adjacent streams. In some cases, neighbors must be notified. 16

An article in [The Atlantic](#) about marijuana grows in California noted the following problems:

1. Rodenticides used in marijuana growing cause neurological damage and internal bleeding.
2. Animals exposed to these chemical “drown in their own blood or stumble around until they’re eaten themselves, passing the poison up the food chain to predators like owls and fishers.”
3. The growers bait open tuna cans with pesticides, which are often flavored like meat or peanut butter, or string up poisoned hot dogs on fish hooks. People have found bears, foxes, vultures, and deer with chemicals from grow sites in their bodies. One study of owls in the Pacific Northwest found that 80 percent of the birds tested positive. And for every animal found, there are probably dozens more in a similar condition.
4. The poisons could spread far beyond each grow site and contaminate the water supply of towns and cities far downstream. The toxicants can leach into the soil and linger for years.
5. The chemical containers can explode. They can gasify and build up pressure in the heat of the sun. 17

Indoor Growing

Indoor/hydroponic growing is defined as the process of growing plants in sand, gravel, or liquid, with added nutrients but without soil. The water used contains a specialty mix of chemicals and fertilizers designed for high potency growth. When the water is disposed of into a municipal waste treatment systems or private on-site septic systems that are not designed to handle the effluent, environmental damage results. 18 Pest problems are always worse indoors, which biases farmers toward a chemically intensive regime and chemical run-off into water sources. 19



Pictured A Fremont CA couple's rental property seriously damaged by a black market marijuana grow. DAN NOYES / ABC

The Science

It has been found that toxicants from marijuana cultivation cause a threat to birds. 20 One environmental side-effect of marijuana growing is the extensive use of anticoagulant rodenticides to prevent damage to marijuana plants caused by wild rodents. The proliferation of grow operations with their use of anticoagulant rodenticides in forested landscapes used by northern spotted owls may pose an additional stressor for this threatened species. In Humboldt County California it is estimated there are 4,000 to 15,000 marijuana grow sites. Many marijuana growers use anticoagulant rodenticides. When rodents exposed to anticoagulant rodenticides are eaten by the birds and animals that feed on them the birds die from uncontrollable bleeding. The anticoagulant rodenticides also run off into rivers and streams and kill fish such as salmon. These deaths “have been directly attributed to rat poison used by cannabis farmers.” 21 The increase in cannabis use might increase its levels in freshwaters, enhancing hazards to bivalves and to the whole aquatic community. 22

Direct Contact with Human Beings

Research finds that the application of dangerous chemicals can make direct contact with human beings. For example, many municipal systems spray their treated water onto local golf courses. Without testing for the discrete chemicals that the US Forest Service found on grow sites, the tainted water could make its way into direct contact with people recreating in contaminated areas and waters. People are not be aware of the potential dangers or the level of risk associated with using these recreational facilities. 23

Conclusion

The states that have legalized marijuana and do not really regulate marijuana growing must choose. They cannot continue as they are and have water and wildlife and weed.

Acknowledgement

Dennis Mills, the author of Cultivating Disaster that is cited herein has given permission to use his work. It clearly documents the environmental damage caused marijuana growing and is an excellent scientific resource paper. Our nation owes a great debt to him for his tireless work exposing this threat. Cultivating Disaster was prepared with the Communications Institute. <https://communicationsinstitute.org/> who have also given their permission.

References:

1. Illegal Pot Farms Are Poisoning California's Forests Secret growers are taking advantage of the state's remote stretches of public land - and the environmental impact is severe. <https://www.theatlantic.com/science/archive/2017/03/backcountry-drug-war/521352/>

2. Cannabis Cultivation Policy, State Water Resources Control Board, approved April 16, 2019. https://www.waterboards.ca.gov/water_issues/programs/cannabis/

3. Thieves are stealing California's scarce water. Where's it going? Illegal marijuana farms" Julie Cart, July 27, 2021, <https://calmatters.org/environment/2021/07/illegal-marijuana-growers-steal-california-water/>

Illegal cannabis growers are stealing water amid California's drought, officials say," Washington Post, Rachel Pannett, July 28, 2021 https://www.washingtonpost.com/nation/2021/07/28/water-theft-drought-cannabis/?utm_campaign=wp_post_most&utm_medium=email&utm_source=newsletter&wpisrc=nl_most&carta-url=https%

4. Thieves are stealing California's scarce water. Where's it going? Illegal marijuana farms" Julie Cart, July 27, 2021, <https://calmatters.org/environment/2021/07/illegal-marijuana-growers-steal-california-water/>

5. See: "Cultivating Disaster" page 33 at <https://static1.squarespace.com/static/599a426ee45a7ccab72c77d2/t/618dbf053f3402756b4b7659/1636679434662/CULTIVATING.DISASTER+%28%29.pdf>

Thieves are stealing California's scarce water. Where's it going? Illegal marijuana farms" Julie Cart, July 27, 2021, <https://calmatters.org/environment/2021/07/illegal-marijuana-growers-steal-california-water/>

"Illegal cannabis growers are stealing water amid California's drought, officials say," Washington Post, Rachel Pannett, July 28, 2021 https://www.washingtonpost.com/nation/2021/07/28/water-theft-drought-cannabis/?utm_campaign=wp_post_most&utm_medium=email&utm_source=newsletter&wpisrc=nl_most&carta-url=https%

6. Thieves are stealing California's scarce water. Where's it going? Illegal marijuana farms" Julie Cart, July 27, 2021, <https://calmatters.org/environment/2021/07/illegal-marijuana-growers-steal-california-water/>

Illegal cannabis growers are stealing water amid California's drought, officials say," Washington Post, Rachel Pannett, July 28, 2021 https://www.washingtonpost.com/nation/2021/07/28/water-theft-drought-cannabis/?utm_campaign=wp_post_most&utm_medium=email&utm_source=newsletter&wpisrc=nl_most&carta-url=https%

Jewel Wicker, "Marijuana farmers blamed for water theft as drought grips American west" <https://www.theguardian.com/environment/2021/jul/23/water-theft-marijuana-farmers-california-american-west>

"California Cracks Down on Illegal Cannabis Growers Stealing Water Amidst Droughts & Wildfires," James Eason, July 30, 2021 <https://marijuanapackaging.com/blogs/california-marijuana/california-cracks-down-on-illegal-cannabis-growers-stealing-water-amidst-droughts-wildfires>.

7. Thieves are stealing California's scarce water. Where's it going? Illegal marijuana farms" Julie Cart, July 27, 2021, <https://calmatters.org/environment/2021/07/illegal-marijuana-growers-steal-california-water/>

Illegal cannabis growers are stealing water amid California's drought, officials say," Washington Post, Rachel Pannett, July 28, 2021; https://www.washingtonpost.com/nation/2021/07/28/water-theft-drought-cannabis/?utm_campaign=wp_post_most&utm_medium=email&utm_source=newsletter&wpisrc=nl_most&carta-url=https%

"California Cracks Down on Illegal Cannabis Growers Stealing Water Amidst Droughts & Wildfires"; <https://marijuanapackaging.com/blogs/california-marijuana/california-cracks-down-on-illegal-cannabis-growers-stealing-water-amidst-droughts-wildfires>,

8. Cannabis farms in California rely on wells outside of regulated groundwater basins, Christopher Dillis et al 2021 Environ. Res. Commun. 3 075005; <https://iopscience.iop.org/article/10.1088/2515-7620/ac1124>

9. Illegal Pot Farms Are Poisoning California's Forests Secret growers are taking advantage of the state's remote stretches of public land - and the environmental impact is severe. <https://www.theatlantic.com/science/archive/2017/03/backcountry-drug-war/521352/>

10. For more documentation see: "Cultivating Disaster" at 18-19 <https://static1.squarespace.com/static/599a426ee45a7ccab72c77d2/t/618dbf053f3402756b4b7659/1636679434662/CULTIVATING.DISASTER+%28%29.pdf>

11. For more documentation see the entire document "Cultivating Disaster" Ibid.

https://www.oregonlive.com/opinion/index.ssf/2018/01/us_attorney_a_call_for_transpa.html;

<https://www.marijuana.com/news/2018/05/u-s-attorney-to-crack-down-on-illegally-grown-northern-california-marijuana/>

12. <https://merryjane.com/health/toxic-pesticides-from-illegal-cannabis-grows-are-seeping-into-california-waterways>;

<https://www.thecannabist.co/2018/01/01/california-marijuana-legalization-environmental-regulations/95680/>

13. <https://www.cbsnews.com/news/lassen-national-forest-toxic-chemicals-killing-wildlife-illegal-marijuana-grows/>https://www.co.siskiyou.ca.us/sites/default/files/SO-20160920_MarijuanaEnforcementUpdate.pdf

14. "Banned Pesticides from Illegal Pot Farms Seep into California Water, 35 No. 16 Westlaw Journal Toxic Torts 5, September 22, 2017

15. http://www.huffingtonpost.com/2013/05/24/marijuana-pesticides-contamination_n_3328122.html

16. See: "Cultivating Disaster" page 12 at <https://static1.squarespace.com/static/599a426ee45a7ccab72c77d2/t/618dbf053f3402756b4b7659/1636679434662/CULTIVATING.DISASTER+%282%29.pdf>

17. See the entire document: "Cultivating Disaster" Ibid.

Illegal Pot Farms Are Poisoning California's Forests Secret growers are taking advantage of the state's remote stretches of public land - and the environmental impact is severe. <https://www.theatlantic.com/science/archive/2017/03/backcountry-drug-war/521352/>

18. See: "Cultivating Disaster" page 22. Ibid

19. See: "Cultivating Disaster" page 35, Ibid

20. "Patterns of Natural and Human-Caused Mortality Factors of a Rare Forest Carnivore, the Fisher (*Pekania pennanti*) in California," Mourad W. Gabriel, Leslie W. Wood, Greta M. Wengert, Nicole Stephenson, et. al, PLOS ONE/DOI:10.1371/journal.pone.0140640 November 4, 2015

21. "Grass is not always greener: rodenticide exposure of a threatened species near marijuana growing operations," Franklin et al. BMC Res Notes (2018) 11:94; <https://doi.org/10.1186/s13104-018-3206z>. See also, AVIAN CONSERVATION & ECOLOGY VOLUME 13, ISSUE 1, ARTICLE 2 Gabriel, M. W., L. V. Diller, J. P. Dumbacher, G. M. Wengert, I M. Higley, R. H. Poppenga, and S. Mendia. 2018. Exposure to rodenticides in Northern Spotted and Barred Owls on remote forest lands in northwestern California: evidence of food web contamination.

22. Environ Toxicol Chem. 2017 Feb;36(2):472-479. doi: 10.1002/etc.3575. Epub 2016 Oct 5. Increase in cannabis use may indirectly affect the health status of a freshwater species. Parolini M, Castiglioni S, Magni S, Della Torre C, Binelli A¹.

23. See: "Cultivating Disaster" page 23 <https://static1.squarespace.com/static/599a426ee45a7ccab72c77d2/t/618dbf053f3402756b4b7659/1636679434662/CULTIVATING.DISASTER+%282%29.pdf>