



Americans Against Legalizing Marijuana

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WATER AND WILDLIFE...OR WEED?

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.** 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



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

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, and for human use.
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.

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/>

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.
9. Although there may be some regulations, there are massive number 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.



Pictured: Water thieves are using any type of vehicle/containers to transport stolen water such as large tanker water trucks, water cubed containers in backs of beds, trailers with water tanks.

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.

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%](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%253A%252F%252Fcalmatters.org%252Fenvironment%252F2021%252F07%252Fillegal-marijuana-growers-steal-california-water/)

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+%282%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%](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%253A%252F%252Fcalmatters.org%252Fenvironment%252F2021%252F07%252Fillegal-marijuana-growers-steal-california-water/)

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 to 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

6 Gallons of Water: Which Do you Choose?

<p>FLUSH 4x EACH DAY</p>  <p>Avg. 1.6 gallons/flush x 4 flushes = 6 gallons</p>	<p>==</p>	<p>FEED 1 MARIJUANA PLANT 6 GALLONS EACH DAY</p>  <p>Each marijuana plant requires at least 6 gallons of water each day</p>
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**SAVE WATER FOR HUMAN USE -
NOT POT PLANTS**

⁶ Thieves are stealing California's scarce water. Where's it going? Illegal marijuana farms” Julie Cart, July 27, 2021, <https://calmmatters.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 [⁷ Thieves are stealing California's scarce water. Where's it going? Illegal marijuana farms” Julie Cart, July 27, 2021, <https://calmmatters.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; \[https://www.washingtonpost.com/nation/2021/07/28/water-theft-drought-cannabis/?utm_campaign=wp_post_most&utm_medium=email&utm_source=newsletter&wpisrc=nl_most&carta-url=https%20California%20Cracks%20Down%20on%20Illegal%20Cannabis%20Growers%20Stealing%20Water%20Amidst%20Droughts%20&%20Wildfires%22;\]\(https://www.washingtonpost.com/nation/2021/07/28/water-theft-drought-cannabis/?utm_campaign=wp_post_most&utm_medium=email&utm_source=newsletter&wpisrc=nl_most&carta-url=https%20California%20Cracks%20Down%20on%20Illegal%20Cannabis%20Growers%20Stealing%20Water%20Amidst%20Droughts%20&%20Wildfires%22;\) <https://marijuanapackaging.com/blogs/california-marijuana/california-cracks-down-on-illegal-cannabis-growers-stealing-water-amidst-droughts-wildfires>](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%20Jewel%20Wicker,%20%22Marijuana%20farmers%20blamed%20for%20water%20theft%20as%20drought%20grips%20American%20west%22%20https://www.theguardian.com/environment/2021/jul/23/water-theft-marijuana-farmers-california-american-west%20%22California%20Cracks%20Down%20on%20Illegal%20Cannabis%20Growers%20Stealing%20Water%20Amidst%20Droughts%20&%20Wildfires%22,%20James%20Eason,%20July%2030,%202021%20https://marijuanapackaging.com/blogs/california-marijuana/california-cracks-down-on-illegal-cannabis-growers-stealing-water-amidst-droughts-wildfires.”</p>
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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>

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 in the 11 top marijuana producing counties in California. Some trespass growers leave their irrigation systems running around the clock. 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. 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



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

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

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.

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+%282%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/>

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 of chemicals onto neighboring property via air or into adjacent streams. In some cases, neighbors must be notified.¹⁶

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>



Pictured: California land & nature trashed with various marijuana grow tools

An article in The Atlantic about marijuana grows in California noted the following problems:

- 1. Rodenticides used in marijuana growing causes neurological damage and internal bleeding.**
- 2. 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.”**
- 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 for dangerous chemicals. 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 and 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

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

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



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

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

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>

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.



Pictured: Trashed California land is a direct negative result of marijuana farming & growing.

Acknowledgement



Pictured: Dennis Miller at an illegal grow site

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 by 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.