Legalizing Marijuana and Abating Environmental Harm: An Overblown Promise?

Michael Vitiello*

Written in advance of the passage of Proposition 64 (legalizing recreational use of marijuana in California), this article explores why legalization of marijuana is now quite likely. It also identifies arguments made by proponents in support of legalization, including the need to abate environmental harm caused by illegal production of marijuana in pristine areas and elsewhere where marijuana has become a major cash crop. Specifically, the article examines the report produced by The Blue Ribbon Commission organized by Lieutenant Governor Gavin Newsom and Proposition 64’s provisions addressing environmental concerns. It questions whether Proposition can deliver on the promise to abate the environmental harm caused by marijuana production. In closing, the article focuses on one source for optimism, an increasing number of young marijuana producers interested in cooperation with state actors to comply with the law, especially with environmental regulations.

TABLE OF CONTENTS

INTRODUCTION ................................................................................... 775

I. THE STEADY MARCH TOWARDS LEGALIZATION ......................... 777
II. THE ENVIRONMENTAL COST ..................................................... 791
III. PROMISING A POT OF GOLD? .................................................... 796
   A. Reducing the Illegal Trade ..................................................... 803

* Copyright © 2016 Michael Vitiello. Distinguished Professor of Law, the University of the Pacific McGeorge School of Law; University of Pennsylvania, J.D., 1974; Swarthmore College, B.A., 1969. I want to extend special thanks to Rosemary Deck for her capable research assistance. I also want to thank my several colleagues who gave me extensive feedback on an earlier draft of the article, including Associate Dean for Scholarship Raquel Aldana and Professors Karrigan Bork, Frank Gevurtz, Jennifer Harder, John Kirlin, Leslie Jacobs, Brian Landsberg, Emily Parento, and John Sprankling.
B. Regulated Agriculture ......................................................... 806
C. Expanded Demand ............................................................. 808
D. Some Good News? ............................................................. 810
CONCLUDING THOUGHTS.............................................................. 811
INTRODUCTION

In December 2014, the Library of Congress named The Big Lebowski, the Coen brothers’ cult film about a pot smoking oddball hero, one of 650 “culturally, historically or aesthetically significant films.” The designation means that the Library will preserve the film for future generations. The popularity of The Big Lebowski and other similar movies, portraying marijuana use favorably or humorously helps explain why the legalization of marijuana is on the fast track. Several factors, including changing demographics, make legalization plausible in the near term. The generally successful experiments in Colorado and Washington with legalization and taxation similarly move us closer to legalization. Proponents of legalization have advanced a number of arguments in support of legalization, including abatement of environmental harm. That includes Lieutenant Governor Gavin Newsom’s Blue Ribbon Commission, which listed environmental protection among its goals in regulating the marijuana industry. California’s drought has added to the urgency to address environmental concerns because marijuana production uses significant amounts of water and illegal producers do not work within normal constraints on agriculture. During the summer of 2015, in

2 Id.
5 STEERING COMM., BLUE RIBBON COMM’N ON MARIJUANA POLICY, PATHWAYS REPORT: POLICY OPTIONS FOR REGULATING MARIJUANA IN CALIFORNIA 40–41 (2015), http://www.ltg.ca.gov/BRCpathwaysreport.pdf [hereinafter BRC REPORT]. As I have written elsewhere, I am a tepid legalizer. See Michael Vitiello, Legalizing Marijuana: California’s Pot of Gold?, 2009 Wis. L. REV. 1349, 1388 (2009) [hereinafter Pot of Gold] (“I am a tepid supporter of legalization.”). I am agnostic whether many of the claimed benefits promised by proponents will materialize; at least that is the case unless policy makers are thoughtful in how they implement reforms. See Michael Vitiello, Why the Initiative Process Is the Wrong Way to Go: Lessons We Should Have Learned from Proposition 215, 43 MCGEORGE L. REV. 63, 79 (2012) [hereinafter Lessons from Proposition 215].
6 BRC REPORT, supra note 5, at vii.
7 See Fish, Flows and Marijuana Grows: Drought and Illegal Marijuana Impacts to Fisheries: Hearing before the J. Comm. on Fisheries and Aquaculture, 2015 Sess. (Cal.
response to concerns about marijuana producers’ water usage, a joint committee of the California legislature conducted hearings on the issue.\(^8\) Those hearings led to legislation\(^9\) and greater involvement by the state Water Resources Control Board in monitoring water use by growers.\(^{10}\)

After months of wrangling, a number of groups interested in placing their own initiatives on the 2016 ballot have agreed to back an initiative proposed by the Lieutenant Governor and his supporters.\(^{11}\) Consistent with recommendations in The Blue Ribbon Commission’s report, the Newsom initiative promises that it will address illegal marijuana production on public lands and will abate harm to watersheds and habitat.\(^{12}\)

This article focuses on two questions: why is legalization of marijuana realistic, and will legalization of marijuana lead to abatement of environmental damage if California adopts the Newsom initiative? Part I addresses why legalization seems realistic in the short

---

\(^8\) Id.


\(^11\) California Proposition 64, Marijuana Legalization (2016), BALLOT PEDIA (2016), https://ballotpedia.org/California_Proposition_64_%E2%80%9AMarijuana_Legalization\] (last visited Sept. 3, 2016). Lt. Gov. Gavin Newsom is supporting the Adult Use of Marijuana Act (AUMA), along with the CA branch of NORML, the Drug Policy Alliance, Law Enforcement Against Prohibition, the Emerald Growers Association, the creator of Napster Sean Parker, and Dr. Donald O. Lyman, MD. In addition to AUMA, alternative versions of a marijuana ballot initiative are also in the works, such as the Control Regulate and Tax Cannabis Act of 2016, the California Cannabis Hemp Initiative 2016, and the California Craft Cannabis Initiative. See, e.g., David Downs, Tech Billionaire Sean Parker Matching All Donations to Pot Legalization, SF\textregistered\texttrademark\textcopyright\textregistered\texttrademark (Dec. 13, 2015, 2:11 PM), http://blog.sfgate.com/smellthetruth/2015/12/13/tech-billionaire-sean-parker-matching-all-donations-to-pot-legalization\] (regarding the “Submission of Amendment to Statewide Initiative Measure – Control, Regulate and Tax Adult Use of Marijuana Act, No. 15-0103”).

When I have lectured and written about marijuana legalization, I have used public attitudes towards the film *Reefer Madness* as a shorthand way to describe demographic changes favoring legalization of marijuana. A must-see for anyone interested in attitudes towards marijuana for a good part of the last century, the film is a melodrama.
about the evils of marijuana use, including sexual libertinism, corruption of young people, suicide and murder. If my older brothers saw Reefer Madness, they would have done so at time when viewers probably took it seriously in the 1950s or early 1960s. By the time I saw the movie in the early 1970s, it was on its way to cult status as one of the worst movies in history (and therefore, “camp”). Fast-forward to my children’s generation (now in their early 30s). They grew up on a steady diet of films that showed marijuana use humorously, like The Big Lebowski, Dude, Where’s My Car, and Pineapple Express, or even positively, as in the love scene between the stars in Bull Durham. Indeed, in 2005, Reefer Madness was made into a musical spoof of the same name. Marijuana use has become acceptable in upper-middle and middle class America.

Not surprisingly, polls demonstrate that younger voters support legalization of marijuana in much greater numbers than older voters. It so happens that Colorado was the healthiest state in the nation prior to the legalization of medical marijuana in Colorado. After legalization, the state suddenly had large numbers of ailing young males.

Of course, public support for legalization is not a guarantee that legislators will listen. For years, large percentages of Americans have supported gun control. Despite those numbers, gun control measures

---

22 The Big Lebowski (Working Title Films 1998).
23 DUDE, WHERE’S MY CAR? (Twentieth Century Fox 2000).
24 PINEAPPLE EXPRESS (Columbia Pictures 2008).
26 Reefer Madness: The Movie Musical (Showtime Networks 2005).
28 See, e.g., George Gao, 63% of Republican Millennials Favor Marijuana Legalization, PEO RES. CTR. (Feb. 27, 2015) http://www.pewresearch.org/fact-tank/2015/02/27/63-of-republican-millennials-favor-marijuana-legalization/ (explaining that Millennials support legalization at much higher rates than elder generations).
30 Ferguson, supra note 29.
often fail because of the resources and intensity of those opposing it.\textsuperscript{31} However, factors other than demographics also support the conclusion that legalization is possible in the near term.

Money counts in politics. The repeal of the Eighteenth Amendment was made possible in part by the resources of beer barons and winery owners.\textsuperscript{32} Until recently, similar resources were not likely to be available for marijuana reform efforts.\textsuperscript{33} But by mid-2015, almost half of all states in the United States allowed the medical use of marijuana.\textsuperscript{34} The growing success of medical marijuana has piqued the interest of the business community.\textsuperscript{35} The popular press, including the \textit{Wall Street Journal}, has focused on business opportunities available in the marijuana industry.\textsuperscript{36} Investors have taken note of the profits generated by the medical marijuana trade,\textsuperscript{37} and some high-risk investors have already entered the marijuana trade.\textsuperscript{38} By some estimates, marijuana sales have risen nationwide to $104 billion a year.\textsuperscript{39} Such a large market must excite many potential investors.

\begin{itemize}
  \item \textsuperscript{31} See Brian Palmer, \textit{Why Is the NRA So Powerful?}, \textit{SLATE} (June 29, 2012, 5:00 PM), http://www.slate.com/articles/news_and_politics/explainer/2012/06/eric_holder_charged_with_contempt_how_did_the_nra_swing_the_votes_of_so_many_democrats_.html (analyzing the influence that the gun lobby has over Congress and the political process).
  \item \textsuperscript{32} See D\textsc{aniel} O\textsc{krent}, \textsc{Last Call: The Rise and Fall of Prohibition} 30-34 (2010).
  \item \textsuperscript{33} See, e.g., Eric Bailey, \textit{6 Wealthy Donors Aid Measure on Marijuana}, \textsc{L.A. Times} (Nov. 2, 1996), http://articles.latimes.com/1996-11-02/news/60512_1_medical-marijuana-measure (reporting some prominent donors like George Soros have supported efforts to legalize medical marijuana).
  \item \textsuperscript{34} Ina Yang, \textit{Medical Marijuana Is Often Less Potent than Advertised}, NPR (June 23, 2013, 12:05 PM), http://www.npr.org/sections/health-shots/2013/06/23/186716488/medical-marijuana-is-often-less-potent-than-advertised?utm_source=npr&utm_medium=html&utm_campaign=story (reporting that almost half the states have legalized medical marijuana).
  \item \textsuperscript{36} Id.
  \item \textsuperscript{37} See, e.g., Eleazar David Melendez, \textit{Marijuana Venture Capital Fund Launches as Ganjapreneurs Go Mainstream}, \textsc{Huffington Post} (June 6, 2013, 8:34 AM), http://www.huffingtonpost.com/2013/06/06/marijuana-venture-capital_n_3393061.html (discussing the rise of investment funds in marijuana related ventures).
  \item \textsuperscript{38} See, e.g., Jennifer Alsever, \textit{Investors Finally Seeing Marijuana’s High Market Potential}, \textsc{Fortune} (June 7, 2015, 4:00 PM), http://fortune.com/2015/06/07/legal-marijuana-business-investors/ (reporting that billionaire Peter Thiel’s investment firm, along with at least seven other smaller financial firms have invested in the cannabis industry).
  \item \textsuperscript{39} Joe Vazquez, \textit{Emerald Triangle’s ‘Murder Mountain’ in Marijuana Country Living Up to Its Name}, \textsc{CBS SF Bay Area} (Sept. 11, 2014, 10:29 PM), http://sanfrancisco.cbslocal.com/2014/09/11/humboldt-countys-murder-mountain-in-marijuana-country-
Despite federal banking laws that prevent marijuana businesses from opening bank accounts, lawyers are finding ways to work around those restrictive laws. Successful investors will no doubt use their resources to lobby for legalization to reduce the risk of governmental sanctions.

Opinion within the medical marijuana community differs on whether legalizing marijuana for recreational use is a good thing. While some medical marijuana supporters are deeply committed to reserving marijuana use for medical benefit only, others have supported the medical marijuana movement as a step towards legalization for recreational use. At a minimum, the wide scale availability of medical marijuana (and the ease of access for recreational users) has undercut some of the arguments against legalization.

A broad, nationwide consensus urging sentencing reform in general may also hasten the legalization of marijuana. Many traditional


41 Even in Washington and Colorado, investors cannot be sure that the next President and Attorney General will not reverse the current policy towards those states.


conservatives have begun to argue that the cost of mass incarceration in the United States is excessive and unnecessary.\(^45\) They join moderate and liberal voices who have long argued for sentencing reform.\(^46\) Many critics of the criminal justice system see the War on Drugs as part of the problem leading to mass incarceration,\(^47\) which has had a disparate impact on communities of color, and has led to unequal enforcement of drug laws against black and brown defendants.\(^48\) Further, they argue that treatment for drug addiction is more humane and less expensive than imprisonment.\(^49\) Decriminalization of marijuana use would support sentencing reform efforts and would likely help to promote drug treatment programs as an alternative to incarceration.

Some supporters of legalization argue that decriminalization would create significant savings in law enforcement costs, and some also see regulation of the marijuana trade as a significant source of tax revenue.\(^50\) Estimates of the value of the marijuana trade vary widely but it is a largely untaxed business that could potentially generate billions of dollars in tax revenue.\(^51\) Cash-strapped cities in California


\(^{47}\) See Michelle Alexander, The New Jim Crow: Mass Incarceration in the Age of Colorblindness 183 (2010) (explaining that the war on drugs has "given birth to a system of mass incarceration").


\(^{50}\) That was one of the selling points in both Colorado and Washington when voters approved sale of marijuana for recreational use. See, e.g., Adrienne Lu, States Weighing Legal Pot Look to Tax Revenues in Colorado, Washington, HUFFINGTON POST (Sept. 16, 2014, 12:05 PM ET), http://www.huffingtonpost.com/2014/09/16/marijuana-tax-revenue_n_5829922.html (reporting that advocates of legalization in Colorado noted that the State could use marijuana tax revenues to fund schools).

\(^{51}\) See, e.g., Caroline Fairchild, Legalizing Marijuana Would Generate Billions in Additional Tax Revenue Annually, HUFFINGTON POST (Apr. 20, 2013, 9:13 AM ET),
have already benefitted from tax revenue generated by medical marijuana. Across-the-board regulation presumably would raise even more tax revenue. As developed below, the amount of additional tax revenue depends on many variables, including those relating to the methods of implementation of marijuana laws. But proponents of legalization have certainly advanced increased tax revenue as a reason for legalization.

Some prominent libertarians and libertarian organizations have also urged legalization of marijuana. For them, the issue is one of personal freedom and responsibility. Indeed, some libertarians would not stop at legalizing marijuana use. They would legalize all drugs.

All of these forces point towards the coming legalization of marijuana. But the path to legalization runs through Washington, D.C. — and beginning in 1937, the federal government has been at war against marijuana.

http://www.huffingtonpost.com/2013/04/20/legalizing-marijuana-tax-revenue_n_3102003.html (reporting that the marijuana industry could generate $8.7 billion in state and federal tax revenues annually); see also Vazquez, supra note 39 (reporting that the marijuana industry has reached sales of $104 billion dollars annually).


I say “presumably” because so many things about the marijuana industry are unknown. Estimating the size of the industry, of course, is at best rough guesswork. As the 2010 RAND study concluded, conclusions about the effect of legalization of marijuana in California are hard to draw because of too many variables. See Beau Kilmer et al., RAND Drug Policy Res. Ctr., Altered State? Assessing How Marijuana Legalization in California Could Influence Marijuana Consumption and Public Budgets, at iii (2010), http://www.rand.org/content/dam/rand/pubs/occasional_papers/2010/RAND_OP315.pdf (listing possible variables that will affect tax revenue such as consumption, future prices, and the “aggregation of many nonprice effects”).

See infra notes 179–92 and accompanying text.


Cf. James P. Gray, Why Our Drug Laws Have Failed and What We Can Do About It: A Judicial Indictment of the War on Drugs 123 (2d ed. 2012) (citing the libertarian philosophy that the government has no business monitoring what citizens put in their bodies).

Id. at 224 (explaining the libertarian notion that a free market for drugs is as necessary for a free society as a free market of ideas).

See Lester Grinspoon & James B. Bakalar, Marihuana as Medicine: A Plea for
With the end of prohibition, officials who had fought the illegal alcohol industry needed a new enemy. At least that was the case with Harry J. Anslinger, at one time an Assistant Commissioner of the Bureau of Prohibition, later the first head of the Federal Bureau of Narcotics in the Treasury Department. Prior to the enactment of the 1937 Marijuana Tax Act, physicians prescribed marijuana for various medical conditions. Anslinger openly appealed to racial stereotypes to drum up support for his war on marijuana. During hearings on the 1937 act, Anslinger stated that “Marihuana [was] an addictive drug which produce[d] in its users insanity, criminality, and death.” Despite its initial view that marijuana had medical advantages, the American Medical Association reversed its position under pressure from Anslinger.

With no recognized medical use, marijuana became an illegal drug and was driven underground. When marijuana use was largely restricted to minority communities, there was little pressure to legalize marijuana. That, of course, changed during the 1960s when

---

Reconsideration, 23 JAMA 1875 (1995) (detailing how the 1937 Marihuana Prevention Act did away with nonmedical uses, eventually resulting in marijuana being classified as a Schedule I drug).


60 See, e.g., Richard Lawrence Miller, The Case for Legalizing Drugs 94-96 (1991) (discussing how after the end of prohibition, many former members of the Prohibition Bureau were shifted to the Bureau of Narcotics to combat illicit drug use).

61 See Bilz, supra note 59, at 118.

62 See Miller, supra note 60, at 99.


marijuana use proliferated. Its wide use on college campuses, especially among elite white youth, led President Nixon to appoint a commission to study marijuana.\textsuperscript{67} Nixon eventually disavowed the recommendations of the First Report of the National Commission on Marijuana and Drug Abuse. For example, the First Report recommended that possession of marijuana for personal use be decriminalized.\textsuperscript{68} Despite earlier suggestions that Nixon would follow the commission’s recommendations, he repudiated those recommendations.\textsuperscript{69}

In 1970, Congress enacted the Comprehensive Drug Prevention and Control Act, which gave the federal government jurisdiction over all drug crimes in the United States.\textsuperscript{70} The act classified marijuana as a Schedule I drug, which, according to the act, lacks any accepted medical use and carries a high potential for abuse.\textsuperscript{71} Since 1972, advocates for marijuana have attempted through extensive litigation efforts to get the federal government to reclassify marijuana.\textsuperscript{72} Virtually without exception, the federal government has resisted any weakening of drug policy relating to marijuana. President Carter called for decriminalization of marijuana for personal use,\textsuperscript{73} and during his administration, the federal government put into place a compassionate use program for seriously ill patients.\textsuperscript{74} President Reagan, however, reversed field with a renewed War on Drugs.
Penalties for drug offenses were increased, often with mandatory minimum sentences, and those laws were vigorously enforced.\footnote{See Timeline: America’s War on Drugs, NPR (Apr. 2, 2007, 5:56 PM ET), http://www.npr.org/templates/story/story.php?storyId=9252490 (describing the Anti-Drug Abuse Act of 1986, signed into law by Reagan, which designated $1.7 billion to the war on drugs).} Little changed during George H.W. Bush’s or Bill Clinton’s presidencies.\footnote{Cf. Tim Dickinson, Obama’s War on Pot, ROLLING STONE (Feb. 16, 2012), http://www.rollingstone.com/politics/news/obamas-war-on-pot-20120216 (discussing the Bush administration’s high profile raids on state medical marijuana providers).} Despite strong state’s rights rhetoric, George W. Bush oversaw an executive branch that aggressively pursued criminal actions against medical marijuana providers in states where it was authorized.\footnote{See M. Alex Johnson, DEA to Halt Medical Marijuana Raids, NBC NEWS (Feb. 27, 2009, 5:42 PM ET), http://www.msnbc.msn.com/id/29433708/ns/health-health-care/ (“My attitude is if the science and the doctors suggest that the best palliative care and the way to relieve pain and suffering is medical marijuana, then that’s something I’m open to.” Obama said in November 2007 at a campaign stop in Audubon, Iowa. “There’s no difference between that and morphine when it comes to just giving people relief from pain.”).}

The situation during the Obama administration has been different, if subject to some noticeable swings in enforcement of federal marijuana laws. During the 2008 Presidential election, candidate Obama promised not to raid ‘legitimate’ medical marijuana dispensaries.\footnote{See Dickinson, supra note 77 (“The Ogden memo sent a clear message to the states: The feds will only intervene if you allow pot dispensaries to operate as a front for criminal activity.”).} Shortly after his taking office, Obama’s Attorney General’s Office issued a memorandum consistent with Obama’s ‘softer’ approach.\footnote{See id. (“In California, which had allowed ‘caregivers’ to operate dispensaries, medical pot blossomed into a $1.3 billion enterprise — shielded from federal blowback by the Ogden memo.”).}

However, the government’s initial tolerance of medical marijuana dispensaries changed dramatically, particularly in California. After the Attorney General’s memorandum, most notably in California, marijuana providers opened hundreds of marijuana dispensaries, often thinly disguised operations having little if anything to do with the medical part of distributing marijuana.\footnote{Lucia Graves, Obama Administration’s War on Pot: Oaksterdam Founder Richard Lee’s Exclusive Interview After Raid, HUFFINGTON POST (Apr. 18, 2012, 10:15 AM ET), http://www.huffingtonpost.com/2012/04/18/obama-war-on-weed-richard-lee-oaksterdam-raid_n_1427435.html.} The Obama administration responded forcefully and conducted more raids on dispensaries in California than did the Bush administration.\footnote{See id. (“In California, which had allowed ‘caregivers’ to operate dispensaries, medical pot blossomed into a $1.3 billion enterprise — shielded from federal blowback by the Ogden memo.”).} Other laws, including...
forfeiture laws, were invoked against landlords renting to dispensaries. The Internal Revenue Service has also relied on Reagan-era legislation designed to cripple illegal drug dealers by disallowing dispensaries from taking ordinary business expenses.

More recently, however, the Obama administration has taken an important step that may lead to legalization of marijuana nationwide. After Colorado and Washington passed initiatives allowing for the production and sale of small amounts of recreational marijuana, (and Alaska, Oregon, and Washington, D.C. have since followed suit), the Department of Justice faced an important policy decision: the federal government has clear authority to enforce federal drug laws even if the state where it is used does not make use illegal. But for many reasons the Obama administration did not want to ignore the will of the voters in Colorado and Washington. After some delay, then-Attorney General Holder told the governors of those states that the Department of Justice would allow the states to implement the ballot initiatives.


83 26 U.S.C. § 280E (1982); see Steve Hargreaves, Marijuana Dealers Get Slammed by Taxes, CNN MONEY (Feb. 25, 2013, 3:17 PM ET), http://money.cnn.com/2013/02/25/smallbusiness/marijuana-tax/index.html (“It may have been effective against cocaine dealers and smugglers of other hard drugs, but the law now means purveyors of medical marijuana in the 18 states that have legalized the drug can’t take typical things like rent or payroll as a business expense.”).

84 See Dickinson, supra note 77 (explaining the position taken by the Obama administration to respect the will of the voters in states that decide to pass marijuana legislation).


86 See Gonzales v. Raich, 545 U.S. 1, 19 (2005) (“[R]egulation is squarely within Congress’ commerce power because production of the commodity meant for home consumption, be it wheat or marijuana, has a substantial effect on supply and demand in the national market for that commodity.”).

87 One can imagine any number of reasons why the Obama administration may have been hesitant to frustrate the voters in Washington and Colorado. Not the least of which, President Obama would not have wanted to alienate young voters in a deep blue state like Washington and a purple state like Colorado. See Brady Dennis, Obama Administration will not Block State Marijuana Laws if Distribution is Regulated, WASH. POST (Aug. 29, 2013), https://www.washingtonpost.com/national/health-science/obama-administration-will-not-preempt-state-marijuana-laws—for-now/2013/08/29/b725bfd8-10bd-11e3-8cdd-bcde09410972_story.html.

88 See Dickinson, supra note 77 (detailing the government’s position as stated in the “Ogden memo” regarding states that implement marijuana ballot initiatives).
Deputy Attorney General James Cole also published a memo explaining the department's position: the states must “implement strong and effective regulatory and enforcement systems that will address the threats those state laws could pose to public safety, public health and other law enforcement interests.” The system of “robust controls and procedures” must exist in practice, not only on paper. Further, the memo identified eight priorities for federal prosecutors, explaining when the department will prosecute offenders.

The Obama administration's decision to forego aggressive prosecution of marijuana laws in Colorado and Washington is pivotal. It means that those states could implement their laws with some degree of impunity. Over time those states will also serve as laboratories for Democracy, to borrow a phrase from Justice Louis Brandeis. For example, marijuana supporters who are interested in raising tax revenue can learn effective strategies by watching the results in those states.

Not everyone agrees with the Obama administration's decision to tolerate Colorado and Washington law. For example, one might argue that the overwhelming defeat of an initiative to legalize personal use of marijuana in Ohio is a repudiation of that policy. A number of factors relating specifically to that ballot initiative seem to explain the failure of that initiative. Notably, the Ohio Secretary of State stated

90 Id.
91 Id. (listing eight priorities for federal prosecutors: preventing the distribution of marijuana to minors; preventing revenue from the sale of marijuana from going to criminal enterprises, gangs, and cartels; preventing the diversion of marijuana from states where it is legal under state law in some form to other states; preventing state-authorized marijuana activity from being used as a cover or pretext for the trafficking of other illegal drugs or other illegal activity; preventing violence and the use of firearms in the cultivation and distribution of marijuana; preventing drugged driving and the exacerbation of other adverse public health consequences associated with marijuana use; preventing the growing of marijuana on public lands and the attendant public safety and environmental dangers posed by marijuana production on public lands; and preventing marijuana possession or use on federal property).
92 See Dickinson, supra note 77.
93 See New State Ice Co. v. Liebmann, 285 U.S. 262, 311 (1932) (“It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country.”).
that one of the ballot provisions would have given a monopoly to the owners of ten parcels of land, coincidentally, owned by the investors who bankrolled the initiative.95 Other parties clearly object to the Obama administration’s position. Notably, Colorado, Kansas and Nebraska prosecutors and sheriffs sued Colorado on various grounds.96 Oklahoma and Nebraska representatives have concerns that their citizens now have ready access to marijuana by crossing the border into Colorado and will bring back marijuana into their jurisdictions.97 Those states unsuccessfully challenged Colorado and Washington’s rights to follow their own laws and the Obama administration opposed their petition for review by the Supreme Court.98 As a result, those states will provide a model to determine the effects of legalization of marijuana.

Early results are mixed. In October, 2014, the Cato Institute published a working paper entitled Marijuana Policy in Colorado.99 The report recognized its conclusions must necessarily be tentative given the short period of time since implementation of the state’s law.100 It found no significant effect on crime rates.101 Apparently, liberalization of marijuana policy has reduced traffic fatalities.102 Liberalization does not seem to have led to an increase in marijuana use and other outcomes associated with its use.103 Interestingly, the report did conclude that the state has collected less tax revenue than originally projected, about $84 million as opposed to a projected $134 million.104

99 Miron, Policy in Colorado, supra note 44, at 2.
100 Id at 4.
101 Id. at 14.
103 Miron, Policy in Colorado, supra note 44, at 2.
104 Id. at 22.
But the 2015 tax revenue from all marijuana sales appears to have exceeded the tax revenue for 2014.105

In contrast to Colorado, Washington has already tweaked its marijuana markets to generate the tax revenue that it anticipated. When Washington first legalized recreational use of marijuana, it already had a legal medical marijuana market in place, with its own system of taxation and regulation. 106 The new legal market was much more regulated and more heavily taxed than the medical marijuana market107 and, of course, the illegal market.108 However, at least based on rough guesses, the new legal market for recreational users captured only a small portion of the total market in the state, about 3-5%.109

Washington addressed the disparity in tax revenue between medical and recreational marijuana in April 2015, by enacting a law that, in effect, gets rid of the medical marijuana industry.110 All marijuana markets in Washington are now taxed and regulated in the same way. As observed by Rick Garza, the head of Washington's Liquor Control Board, the medical marijuana market was always in a gray area because customers of medical dispensaries were often recreational users anyway.111 With some percentage of medical marijuana users having shifted their purchases to the new legal market, this legislation is one reason why Washington's tax revenue has exceeded earlier projections.112

On the other hand, according to an anonymous pot dealer, who sells mainly to college students, the illegal market still accounts for 75-80% of the total market in Washington.113 He contends that, “The street

---

107 See Callaghan, supra note 106.
108 See id. (“[D]ue to taxes on the industry, recreational stores can’t yet compete with drug dealers on price.”).
109 Id.
110 See id. (“Washington State Governor Jay Inslee signed a bill in April that will overhaul medical marijuana and reconcile the two legal markets into one.”).
111 Id.
113 Callaghan, supra note 106.
can always offer prices that are below that of the stores.” Whether Washington, Colorado, and other states considering legalization can develop effective ways to curb the illegal market remains to be seen. As developed below, whether states can shrink the illegal marijuana trade has important implications for efforts to abate environmental harm.\footnote{Id.}

I cite the Cato study and recent changes in the law in Washington to demonstrate that Colorado and Washington are indeed serving as laboratories for other states. That they are raising tax revenue increases the likelihood that other cash-strapped states will follow suit and legalize recreational marijuana use.\footnote{See infra Part III.B.} In addition, at least the data from Colorado do not support critics’ charges of increased crime and increased use among juveniles or the population generally.\footnote{Matt Ferner, \textit{One Year of Legal Marijuana Generated $70 Million in Tax Revenue for Washington State}, \textit{Huffington Post} (July 6, 2015, 6:50 PM), http://www.huffingtonpost.com/2015/07/06/washington-marijuana-taxes-70-million_n_7737722.html ("These impressive numbers are likely to catch the eyes of policymakers in other states that could use a little help closing their budget gaps," Tom Angell, chairman of the advocacy group Marijuana Majority, told The Huffington Post.).} That is, the experience in Colorado and Washington is likely to support reform efforts in other states, as states like California place similar initiatives on their ballots.

elsewhere as well. On August 8, 2015, the New York Times ran an editorial criticizing the Obama administration and Congress for being too timid on reforming marijuana laws.\footnote{Too Timid, supra note 119.} At some point, keeping the federal prohibition against marijuana in force will make little sense.

That may be good news for environmentalists who support legalization because of concerns about the harm caused by illegal marijuana production. Or so it would seem. But the primary focus outside of California has not been on the environment. Instead, as the Cato Institute report demonstrates, the public and policymakers have focused on tax revenues, crime, traffic fatalities, and teen drug use.\footnote{Miron, Policy in Colorado, supra note 44 (the Cato Institute report does not address environmental concerns); see also Colorado Marijuana Initiative 2012, YES on 64 TV Ad - “Vote for Colorado”, YOUTUBE (Oct. 6, 2012), https://www.youtube.com/watch?v=1KAOq7XX2OY (Colorado campaign YES on 64 did not address environmental concerns).} Environmental concerns are at best an afterthought or, as in the case of the Cato Institute Report, not a concern at all.\footnote{The report does not mention abatement of environmental harm as a reason to legalize marijuana.}

Before turning to whether legalization of marijuana will abate environmental harm, the next section turns to the California legislature’s 2015 hearings on marijuana and water usage. Specifically, it focuses on the environmental harms identified in those hearings and the legislation that resulted from those hearings.\footnote{See infra Part II.}

II. THE ENVIRONMENTAL COST

Supporters of legalization of marijuana have argued for some time that the illegal production of marijuana comes with a significant cost to the environment.\footnote{See Fish Flows, supra note 7 (statement of Hezekiah Allan, Executive Director, Emerald Growers Association on the growers association’s investment in conservation efforts).} They see the legalization of marijuana as a way to abate the environmental harm caused by marijuana producers.\footnote{Roddy Scheer & Doug Moss, Half-Baked Idea?: Legalizing Marijuana Will Help the Environment, Sci. Am. (May 20, 2011), http://www.scientificamerican.com/article/would-legalizing-pot-be-good-for-environment/} Typical is The Blue Ribbon Commission’s inclusion among its goals the protection of public lands, reduction of environmental harm, and
restoration of habitat and watersheds related to marijuana production. There are several harms to the environment, including illegal cultivation on public lands and the clear-cutting by some growers that results in run-off of pesticides and fertilizers. Of special concern is unregulated water usage during the prolonged drought: as observed by The Blue Ribbon Commission, “illegal grows siphon off millions of gallons of water each year.”

Concern about the drought led to the California legislature’s Joint Committee of Fisheries and Aquaculture to conduct hearings on the environmental harm caused by marijuana producers. The hearing provides a primer for environmental damage caused by marijuana production. One witness at the joint hearing estimated that there may be as many as 50,000 marijuana growing operations in the state. According to testimony before the committee, marijuana production requires water and a lot of it: one witness stated that a marijuana plant needs one gallon a day per pound for each growing day. A large plant, yielding as many as five pounds, would require 750 gallons of water.

The State Water Resources Control Board representative who testified before the joint hearing admitted that the agency has no functioning system in place to regulate water use by marijuana producers in the North Coast region. Further, the agency has limited enforcement resources: it has done only eighty-seven inspections despite the presence of thousands of growing operations in the region.


128 BRC REPORT, supra note 5, at 11; Smith, supra note 127.

129 BRC REPORT, supra note 5, at 11.

130 Fish Flows, supra note 7.

131 See id. (statement of Tom Allman, Sheriff of Mendocino County describing damage done to the environment as a result of illegal grows). Some of the participants in the hearings did not support legalization of marijuana for recreational use.

132 Id. (statement of Lieutenant DeWayne Little, Cal. Dept. of Fish and Wildlife).

133 See id. (statement of Hezekiah Allan, Executive Director, Emerald Growers Association explaining that large plants can yield 5 pounds per plant, which is 5 gallons a day for 150 days).

134 See id. (statement of Thomas Howard, Executive Director, State Water Resources Control Board).

135 Id.
While no witness offered an estimate of the total amount of water used by growing operations, the total must be significant. For example, a sheriff in the region described an operation that used a four-inch diversion pipe placed in the Eel River, which runs through Humboldt County, a pipe that can extract 400 gallons of water per minute. In a six-county raid in 2011, agents removed 650,000 marijuana plants from about 950,000 acres of national parks and public lands. The sheer amount of water being diverted for marijuana production on such a large scale is likely to be substantial.

Water diversion for marijuana production has compounded environmental damage to waterways already compromised by the drought. In August, 2014, another Humboldt County waterway, Sprowl Creek, went dry. Another witness at the joint hearing described similar water loss in other area creeks and rivers. He argued that growing operations are part of the problem, pointing to the continued water flow in Grizzly Creek that, as far as officials are aware, has no diversion from growing operations and has experienced limited impact from the drought.

Witnesses indicated that environmental damage does not stop with the loss of water. Growers use pesticides that flow into waterways, reducing water quality for humans and fish. Growers often use black “poly pipe,” which heats the water, contributing to rising water temperatures and harming fish that need cold water to thrive. According to Senator Mike McGuire, marijuana-growing operations are the largest source of sediment in Northern California rivers, causing ecosystem imbalance and threatening the state’s fishing industry. Marijuana growers have also cleared public lands illegally, contributing to problems due to run-off.

A combination of factors, including marijuana growers’ activities, has caused a disturbing reduction of biodiversity in California. The Director of California’s Department of Fish and Wildlife pointed to a

---

136 Id. (statement of Tom Allman, Sheriff, Mendocino County).
137 Id.
138 Id. (statement of John Laird, Secretary, Natural Resources Agency).
139 Id. (statement of Lieutenant DeWayne Little, California Department of Fish and Wildlife).
140 Id. (statement of John Laird, Secretary, Natural Resources Agency).
141 Id. (statement of Lieutenant DeWayne Little, California Department of Fish and Wildlife).
142 Id. (statement of John Laird, Secretary, Natural Resources Agency).
143 Id.
144 Id.
90% loss of Coho salmon in the four major tributaries in the Russian River in a single year as such an example.145

The Joint Committee’s findings are similar to those made by other groups concerned with the environment.146 The committee did not urge legalization as part of the solution to mitigate environmental harm.147 But some proponents of legalization argue that legalization is the best way to reduce the ongoing damage to the environment that is caused by illegal production.148

The Joint Committee hearings led to passage of three bills dealing with marijuana production titled the California Medical Marijuana Regulation and Safety Act (MMRSA).149 Among numerous provisions intended to bring order to the chaos that has been the California medical marijuana industry150 are several relevant to this paper. The MMRSA creates seventeen different kinds of licenses regulating participants in the medical marijuana business.151 It limits the amount

145 Id. (statement of Charlton Bonham, Director of California Department of Fish and Wildlife).
147 See generally Senator McGuire’s Medical Marijuana Bill Passes Senate with Strong, Bi-Partisan Support, CAL. SENATOR MIKE MCGUIRE (June 4, 2015), http://sd02.senate.ca.gov/news/2015-06-04-senator-mcguire%E2%80%99s-medical-marijuana-bill-passes-senate-strong-bi-partisan-support (explaining that CA SB 643 deals only with medical marijuana regulation and does nothing to further the legalization of marijuana for recreational use).
148 See, e.g., Aaron Juchau, Marijuana Could Lead to a Paradigm Shift in Environmental Stewardship, DRUG POLICY ALLIANCE (June 20, 2014), http://www.drugpolicy.org/blog/marijuana-could-lead-paradigm-shift-environmental-stewardship (arguing that legalization would substantially reduce the environmental problems associated with growing by allowing for increased regulation); About Marijuana, NORML, http://norml.org/marijuana (last visited Oct. 29, 2016) (advocating for the eventual development of a legally controlled market for marijuana, where consumers could buy marijuana for personal use from a safe legal source).
of land a grower may have in cultivation to four acres.\textsuperscript{152} It allows local governments to impose additional regulations (including a total ban) on the industry.\textsuperscript{153} The law also gives those governments the power to tax and assess fees on industry.\textsuperscript{154}

Assembly Bill 243 focused on environmental concerns. The law provides that the California Department of Food and Agriculture may create rules necessary to regulate marijuana cultivators.\textsuperscript{155} The act gives the California Department of Pesticide Regulation, in consultation with the California Department of Food and Agriculture, authority to develop rules concerning pesticide use for marijuana cultivation.\textsuperscript{156}

The law also directs the California Department of Food and Agriculture to work with the Department of Fish and Wildlife and the Water Resources Control Board to ensure that “individual and cumulative effects of water diversion and discharge associated with cultivation do not affect the instream flows needed for fish spawning, migration, and rearing, and the flows needed to maintain natural flow variability.”\textsuperscript{157} The law does exempt qualifying patients who cultivate for personal use from its provisions.\textsuperscript{158}

Senate Bill 643, also part of the MMRSA, limits licenses. Importantly, individuals with criminal convictions for offenses “substantially related to the qualifications, functions, or duties of the business or profession for which the application is made” may be denied a license.\textsuperscript{159} Specific convictions that may be considered by the state licensing agency include felony convictions for the illegal possession for sale, sale, manufacture, transportation, or cultivation of a controlled substance.\textsuperscript{160}

The overall impact of the MMRSA will not be clear for several years. That is so because the law gives the various agencies involved in its implementation significant lead time in which to promulgate

\textsuperscript{152} \textit{CAL. BUS. \\& PROF. CODE} § 19328(a)(9) (2016).
\textsuperscript{153} \textit{Id}. § 19316 (2016).
\textsuperscript{154} \textit{Id}. § 19320(d) (2016).
\textsuperscript{155} \textit{Id}. § 19332(a) (2016).
\textsuperscript{156} \textit{Id}. § 19332(b).
\textsuperscript{157} \textit{CAL. HEALTH \\& SAFETY CODE} § 11362.777(c)(1)(A) (2016).
\textsuperscript{158} \textit{Id}. § 11362.777(g) (allowing personal cultivation as long as the area of cultivation does not exceed 100 square feet).
\textsuperscript{159} \textit{CAL. BUS. \\& PROF. CODE} § 19323(b)(5) (2016).
\textsuperscript{160} \textit{Id}. 
regulations authorized by the act.\textsuperscript{161} As developed below, the law may already be helping abatement of some of the identified environmental harm.\textsuperscript{162}

When the legislature passed the MMRSA, some commentators wondered why the legislature would bother regulating the medical marijuana trade in light of the upcoming election.\textsuperscript{163} Expectations run high that whatever initiative that would legalize personal use of marijuana qualifies for the ballot will pass.\textsuperscript{164} As indicated above, the agreement among various groups to back the Newsom initiative helps to clarify what legalization may look like after the upcoming election.\textsuperscript{165} The next section turns to that proposed legislation.\textsuperscript{166}

### III. PROMISING A POT OF GOLD?

Proponents of legalizing marijuana often make extravagant claims about benefits that will result from its legalization. Typical are claims made several years ago when California Assemblyman Tommy Ammiano proposed legislation that would have legalized marijuana in California.\textsuperscript{167} Proponents made several claims about the benefits of the proposed legislation: it would raise about $1 billion in tax revenue;\textsuperscript{168} it would reduce prison costs by another billion according to proponents’ estimates;\textsuperscript{169} it would save money by shifting law enforcement efforts away from pursuing marijuana prosecutions;\textsuperscript{170} it

\begin{flushright}
\textsuperscript{161} See S.B. 643 \S 20, 2015–2016 Sess. (Cal. 2015) (“This act shall become operative only if Assembly Bill 266 and Assembly Bill 243 of the 2015–16 Session are enacted and take effect on or before January 1, 2016.”).

\textsuperscript{162} \textit{Infra} Part III.B.

\textsuperscript{163} \textit{Cf.} Victoria Colliver & Rachel Swan, \textit{Gov. Brown Signs Bills Regulating Medical Marijuana Industry}, SF GATE (Oct. 9, 2015), http://m.sfgate.com/news/article/Gov-Brown-signs-bills-regulating-medical-6562139.php. ("While some aspects of the legislation have been criticized, most involved in the industry say the benefits of having regulations more than outweigh any of the downsides.")


\textsuperscript{165} \textit{See California Proposition 64, Marijuana Legalization} (2016), supra note 11; Downs, supra note 11; Pascual, supra note 11.

\textsuperscript{166} \textit{Infra} Part III.


\textsuperscript{169} \textit{See} id.

\textsuperscript{170} \textit{See} id.
2016 | Legalizing Marijuana and Abating Environmental Harm | 797

would “end the environmental damage to our public lands from illicit crops”\(^\text{171}\) and it would help combat trafficking and gang violence of Mexican drug cartels because gangs would no longer profit from illegal marijuana sales.\(^\text{172}\) Others like NORML’s writers contend that legalization would lead to “spinoff industries such as coffee houses, paraphernalia, and industrial hemp.”\(^\text{173}\) On the assumption that the industry was a third the size of the wine industry, NORML estimated that legalization would generate 50,000 jobs and $1.4 billion in wages.\(^\text{174}\) It also projected that the hemp industry could become a business comparable to California’s multi-billion dollar cotton industry.\(^\text{175}\) How could anyone oppose such a bonanza for the state?

Trite but all too true is the cliché that the devil is in the details. History is replete with examples of legislation that has resulted from unusual coalitions and has disappointed some of the groups who helped make reform possible.\(^\text{176}\) Those who hope that marijuana legalization will abate the environmental harm caused by marijuana production should be agnostic whether those benefits will result from legalization efforts.

The RAND Corporation attempted to study the effects of legalizing marijuana in California several years ago.\(^\text{177}\) It came to several conclusions, but most importantly for this paper, it found that “[t]here is considerable uncertainty about the impact of legalizing marijuana in California on public budgets and consumption, with even minor changes in assumptions leading to major differences in outcomes.”\(^\text{178}\) As I pointed out in Legalizing Marijuana: California’s Pot of Gold, proponents rely on many unproven assumptions and ignore the


\(^{172}\) How to Stop the Drug Wars, ECONOMIST, Mar. 7, 2009, at 15 (arguing that “prohibition has failed” and legalization is the “least bad solution”).


\(^{174}\) Id.

\(^{175}\) Id.

\(^{176}\) See, e.g., OKRENT, supra note 32, at 96-114 (describing the disparate organizations that led to passage of the Eighteenth Amendment); Michael Vitiello, Reconsidering Rehabilitation, 65 TUL. L. REV. 1011, 1024-26 (1991) (discussing coalition that led to abandonment of rehabilitative model in favor of retributive model).

\(^{177}\) KILMER ET AL., supra note 53.

\(^{178}\) Id. at 3.
tension between some of their claims.\textsuperscript{179} Below, I consider a few of those policies that are in conflict.

When I lecture on legalization of marijuana, I usually start with a confession: my interest in legalization has nothing to do with access to marijuana.\textsuperscript{180} I am a tax-and-spend liberal: give me a new industry to tax! But I am also interested in meaningful sentencing reform and reducing prison costs.\textsuperscript{181} However, I am quick to caution that my goals, if I were to vote for legalization of marijuana,\textsuperscript{182} may be at odds with one another. Return to the news story cited above concerning the change in Washington state law, conflating the medical and recreational marijuana regulations.\textsuperscript{183} As reported there, a marijuana dealer estimates that between 75-80\% of Washington’s marijuana trade is still handled by the illegal market.\textsuperscript{184} That may be a temporary phenomenon. For example, buyers may be comfortable with their illegal supplier but may eventually transition to a legal shop to assure a steady and law-abiding supply.

However, at least in the short term, according to the cited story, the illegal market still undercut the lawful market by a significant amount.\textsuperscript{185} Some opponents to the legalization of marijuana claim that the price on the illegal market will always be less than the legal market.\textsuperscript{186} That is so because the legal market will always include taxes and licensing fees needed to raise the promised revenue.\textsuperscript{187} In

\begin{itemize}
\item \textsuperscript{179} See generally Vitiello, \textit{Pot of Gold}, supra note 5 (another issue that I addressed there was that proponents often ignore costs that result from expanded use of drugs, and no one should deny that drugs do have negative effects for some users and their families).
\item \textsuperscript{180} See, e.g., id. at 1389.
\item \textsuperscript{182} Vitiello, \textit{Lessons from Proposition 215}, supra note 5, at 63 (when Proposition 19 was on the ballot in 2010, I abstained, unable to vote for a badly drafted initiative that might not result in tax revenues promised by its drafters).
\item \textsuperscript{183} Callaghan, supra note 106.
\item \textsuperscript{184} Id.
\item \textsuperscript{185} Id.
\item \textsuperscript{186} Forum with Michael Krasny: Legalizing Marijuana?, KQED Nat’l Pub. Radio (Mar. 2, 2009), http://www.kqed.org/epArchive/R903020900 (comment by Lovell that the street price for illegal marijuana will always be less than the price for legally purchased marijuana).
\item \textsuperscript{187} See Jeffery A. Miron, \textit{The Budgetary Implications of Marijuana Prohibition}, \textit{ProhibitionCosts.org} (June 2005), http://www.prohibitioncosts.org/mironreport/ [hereinafter \textit{Budgetary Implications}] (examining the budgetary implications of legalizing marijuana).
\end{itemize}
addition, the lawful shop owner has costs like rent, security and other overhead that must be factored into the cost of the product.\footnote{188} But the price differential between legal and illegal marijuana can be altered by the government’s response to the illegal market.\footnote{189} Quite simply, vigorous law enforcement efforts aimed at black market sellers and buyers can increase producers’ transaction costs through court costs, lawyers’ fees and other disruption of illegal businesses like forfeiture.\footnote{190} Those law enforcement efforts might drive buyers out of the black market into the legal market to avoid the embarrassment and hassle caused by an arrest, even if the buyer is merely fined.

Clearly though, to achieve significant tax revenues, law enforcement would have to continue to focus on illegal marijuana sales. But that effort would cut into savings projected from lower prison, or, more realistically, jail costs.\footnote{191} We can’t have it both ways. And admitting that vigorous law enforcement efforts must continue no doubt would lose support from libertarians and groups like NORML, who are primarily motivated by personal choice and access to marijuana.\footnote{192}

Supporters of legalization, who support reform with the hope of increased revenue, must also recognize a different set of complex policy questions. Who is going to produce legal marijuana?\footnote{193} Many

\begin{footnotesize}
\footnote{188} Cf. Matt Ferner, The Feds Won’t Legitimize Pot, but They’ll Still Tax the Hell out of It, HUFFINGTON POST (Feb. 6, 2014, 12:31 PM ET), http://www.huffingtonpost.com/2014/02/06/marijuana-business-tax_n_4717589.html (explaining that legal marijuana is still subject to “traditional business expenses like advertising costs, employee payroll, rent and health insurance.”).

\footnote{189} See Vitiello, Pot of Gold, supra note 5, at 1374 (“[T]he price of illegal marijuana reflects the cost of doing business and that cost includes the risk of being caught . . . .”).


\footnote{191} See Vitiello, Pot of Gold, supra note 5, at 1366 (stating that many marijuana offenders end up in county jails).


\footnote{193} See generally Max Daly, The Stoners’ Paradise of Humboldt County Is Dreading Weed Legalization, VICE (Feb. 25, 2014), http://www.vice.com/read/the-us-weed-growing-town-dreading-weed-legalisation (reporting that 30,000 people, or one fifth
marijuana users are concerned about the role that Big Tobacco may have in an era of lawful marijuana.\textsuperscript{194} Allowing Big Tobacco to produce marijuana has distinct advantages if the primary goal is collecting tax revenue: Big Tobacco has complied with federal tax laws for years.\textsuperscript{193} But will that leave in place the illegal producers who now function in rural areas of the state, growers who are unlikely to want to join Big Tobacco and the corporate world that it represents?\textsuperscript{2196}

Allowing Big Tobacco or other large corporate producers into the market poses other problems as well. Proponents and opponents often debate whether legalization will increase use.\textsuperscript{197} Some studies suggest that expanded access does not lead to increased use.\textsuperscript{198} Especially on the assumption that significantly expanded use of marijuana is not desirable, policy makers should hesitate to open the market to large corporations, which will push to allow advertising of their product to increase profits.\textsuperscript{199}

of the rural county's population is involved in growing marijuana); Trevor Hughes, \textit{Will Big Tobacco Become Big Marijuana?}, USA TODAY (Apr. 11, 2013, 10:09 PM ET), http://www.usatoday.com/story/money/business/2013/04/11/cigarettes-and-marijuana/70746772/ (discussing whether or not the tobacco industry will venture into legal marijuana).


\textsuperscript{196} See, e.g., Joe Garofoli, \textit{Marijuana Fact-Finding Tour the New Political Field Trip}, SF GATE (June 6, 2015, 7:31 PM), http://www.sfgate.com/bayarea/article/2015-s-new-political-field-trip-the-marijuana-6311673.php (discussing Lt. Governor Gavin Newsom’s address to rural marijuana growers in Garberville, CA ensuring to them that he won’t let corporate marijuana wipe them out come legalization).

\textsuperscript{197} Not all proponents agree on the effect of legalization, with some proponents downplaying the effect of legalization. See Craig Reinarman et al., \textit{The Limited Relevance of Drug Policy: Cannabis in Amsterdam and in San Francisco}, 94 AM. J. PUB. HEALTH 836, 836 (2004) (noting the view of some proponents that marijuana is already so available that legalization won’t increase use). But proponents who favor legalization, like NORML, point to the enormous benefits of legalization, including creation of related industries. See Gieringer, \textit{supra} note 173. Those proponents seem to premise benefits on expanded use.

\textsuperscript{198} See Miron, \textit{Budgetary Implications}, \textit{supra} note 187; see also Kevin Hill, \textit{Medical Marijuana Does Not Increase Adolescent Marijuana Use}, 2 LANCET PSYCHIATRY 572, 572 (2015).

For too long, the debate has been about whether to legalize marijuana. Fortunately, the debate has begun to shift from whether to legalize to how to legalize. Further, as reflected in Lieutenant-Governor Gavin Newsom’s Blue Ribbon Commission’s report, many of these kinds of hard policy choices are being debated. The commission produced a thoughtful report raising many of these concerns. The report is hardly a breathless endorsement of legalization; instead, its drafters recognized the complex and interrelated policy questions involved with legalization. For example, it set out nine goals that need to be balanced. Among those goals was the protection of the environment. It also raised several public health and safety goals that need to be advanced if California legalizes marijuana. Other goals include regulating and limiting access to marijuana, especially among youngsters; testing and labeling marijuana to protect consumers; providing workplace protections for marijuana workers; and ensuring a licensed market for small and mid-size entities.

The commission did not sweep under the rug some of the conflicting policies at play in the debate about legalization. Most notably, it urged that tax revenues not be the justification for legalization. That is so because of potential unintended consequences that may flow from reliance on tax revenues; for example, that reliance may come at the cost of regular and heavy users of marijuana. Overreliance on tax revenues might lead to encouraging usage, thereby increasing other costs associated with use. Similarly, many commission members expressed grave reservations about allowing the large for-profit industry to produce and sell marijuana; they suspect that the industry lobbyists would

implications of big business marijuana, such as downplaying health risks and encouraging increased use).

200 See generally BRC REPORT, supra note 5, at i-iii.
201 See generally id.
202 See generally id.
203 Id. at ii-iii.
204 Id. at ii.
205 Id.
206 Id.
207 Id. at iii.
208 Id.
209 Id.
210 Id. at 9.
211 Id. at 54.
212 Id. at 48.
have the same influence as the lobbyists for the tobacco and liquor industries. 213 The report also analyzed the uncertainties about how to license producers and recognized the risk that imposing fees that are too high would give too much incentive to illegal producers. 214

As indicated above, recently, a number of groups jockeying to put their initiatives on the 2016 ballot have agreed to back a single proposal. 215 Lieutenant Governor Newsom has agreed to back the Marijuana Policy Project of California’s (MPP) Adult Use of Marijuana Act (AUMA). 216 MPP is the organization that was involved in the Washington and Colorado initiatives. 217 AUMA’s drafters structured the initiative around the Blue Ribbon Commission’s findings. 218

Notable among AUMA’s provisions are the following: the initiative would prevent monopolies and Big Tobacco by disallowing large scale cultivation licenses for five years and requiring public universities to conduct studies on preventing monopolies in the industry; 219 it would provide revenue for “environmental cleanup and restoration of public lands damaged by illegal marijuana cultivation;” 220 it would have authority to revoke a business’s license if that business failed to comply with water usage and other environmental laws; 221 and it would have the Department of Food and Agriculture oversee the industry with an emphasis on environmental and water usage compliance. 222 It would also allow local governmental entities to tax

---

213 Id. at 28.
214 Id. at 30. Similarly, the report discussed different options for taxation, including whether to tax at the point of cultivation or sale. Each option presents some undesirable results; thus, taxing at the point of sale means that the rural areas where marijuana is produced may not benefit even though those communities have born some of the costs. Id. at 48-55.
215 California Proposition 64, Marijuana Legalization (2016), supra note 11.
216 Id.
218 Compare AUMA, supra note 12, at 3-4, with BRC REPORT, supra note 5, at ii-iii (AUMA mirrors the priorities listed in the Blue Ribbon Commission Pathways Report).
219 AUMA, supra note 12, at 25, 46-47.
220 Id. at 1.
221 Id. at 2.
222 Id. at 14, 26.
2016] Legalizing Marijuana and Abating Environmental Harm 803

the industry.\textsuperscript{223} AUMA would also remove existing criminal penalties for possession, transportation, and cultivation of marijuana.\textsuperscript{224}

I have focused on AUMA because of the groups that have lined up behind it.\textsuperscript{225} Of eighteen other proposals, two additional proposals appear to have some significant support.\textsuperscript{226} A few provisions that differ from AUMA suggest some areas that will need to be addressed if AUMA is adopted. The Control, Regulate and Tax Cannabis Act of 2016 would increase law enforcement resources and seek to prevent gangs and cartels from involvement in the marijuana industry.\textsuperscript{227} The initiative would focus on treatment, education and counseling, especially in disadvantaged communities.\textsuperscript{228}

The proposals leave unresolved many of the details.\textsuperscript{229} No doubt, including specific regulations would make the resulting ballot initiative unwieldy. At the same time, predicting whether any initiative can deliver on its promises is difficult at best. But what follows are a few concerns about whether AUMA will abate the environmental harm resulting from marijuana production.

\subsection*{A. Reducing the Illegal Trade}

The first concern is whether AUMA will cut into large-scale illegal production of marijuana. Large-scale production on public lands, for example, results in significant damage from clear-cutting of timber, resulting in run-off of soil, pesticides and fertilizers into waterways.\textsuperscript{230} Absent significant curtailment of the illegal trade, legalization of marijuana will not result in abatement of environmental harm.

Some commentators assume that legalization of marijuana will shrink the illegal trade and cite what happened after the Twenty-first

\begin{footnotesize}
\begin{enumerate}
\item[223] Id. at 42, 52.
\item[224] Id. at 24.
\item[225] See California Proposition 64, Marijuana Legalization (2016), supra note 11 (listing the numerous supporters of AUMA).
\item[228] See California Proposition 64, Marijuana Legalization (2016), supra note 11.
\item[229] See generally AUMA, supra note 12.
\end{enumerate}
\end{footnotesize}
Amendment overruled the Eighteenth Amendment, ending Prohibition. That argument ignores a meaningful difference between ending Prohibition and ending marijuana prohibition: sitting on the sidelines during Prohibition or finding ways to maintain production during Prohibition were beer barons, winery owners, and distillery owners. They were able to resume production fairly quickly, thereby dominating the alcohol market. In addition, a good bit of bootlegged liquor was of poor quality, inferior to the legal product. Marijuana production has no similar history — no one produced marijuana legally in the past and is waiting on the sidelines until marijuana prohibition ends. Further, illegal producers have shown themselves quite capable in improving their product and even spend time marketing it by brand name with an emphasis on its unique characteristics.

The failure of the War on Drugs should make policymakers cautious about predicting the eradication of illegal drug production. Estimates on the value of marijuana production in California are difficult at best. At least according to one estimate, marijuana sales in the United States exceed $100 billion, with 60% of production in California. War-on-Drug strategies, like helicopter overflights and police raids — even if they could put a dent in the illegal trade — have

---

232 See generally Beaulieu Vineyard, Napa Valley Renaissance, http://www.bvwines.com/bv-legacy/napa-valley-renaissance (last visited Sept. 2, 2016) (some wineries, notably BV Winery in the Napa Valley, continued to produce wine during Prohibition. Its owners were able to convince Catholic Church officials to buy their wine for sacramental purposes).
233 See OKRENT, supra note 32, at 30-34.
236 Cf. Grinspoon & Bakalar, supra note 58.
239 Jennifer K. Carah et. al., High Time for Conservation: Adding the Environment to the Debate on Marijuana Liberalization, BBO CiM 83 (2015), at 1 (estimating that 60-70% of marijuana consumed in the US is grown in California); Vazquez, supra note 39.
not been enough to win the war on drugs and certainly have not won the hearts and minds of marijuana growers.\textsuperscript{240}

Despite the failure of the War on Drugs, law enforcement has a role in a post-legalization world and perhaps a significant role. Without disincentives, illegal producers will be able to undercut the price of legally produced marijuana.\textsuperscript{241} Arrest, trial, and forfeiture of property can increase production costs for illegal producers.

As importantly, as the Rand study pointed out, choosing the right level of taxation is a key variable.\textsuperscript{242} Imposing taxes that are too high gives producers a disincentive to comply with the law.\textsuperscript{243} No doubt, overly burdensome regulations, which add cost for compliance, may have the same effect.\textsuperscript{244} AUMA’s provision allowing local governmental entities to tax the marijuana industry may be the wrong approach. Cash-strapped cities may impose tax rates that are too high, inviting continued participation by illegal producers and sellers.\textsuperscript{245}

AUMA does address the status of individuals with criminal records for drug related offenses.\textsuperscript{246} Many members of the marijuana community have drug convictions.\textsuperscript{247} The law ought to give them incentives to abandon the illegal trade; failing to do so leaves in place a workforce with the skills and knowhow to produce and sell marijuana illegally.\textsuperscript{248} I have not found estimates of how many marijuana producers have convictions that would be forgiven under the AUMA provision and how many would not. If amnesty for offenders does not extend to large numbers of those involved in the trade, the law will

\begin{footnotes}{\footnotesize


\textsuperscript{242} See Kilmer et al., supra note 53, at 2.

\textsuperscript{243} See id. at 21.

\textsuperscript{244} See id. at 38-49.

\textsuperscript{245} Cf. id. 48-49 (discussing how tax rates could influence tax evasion and competition among different local jurisdictions).

\textsuperscript{246} See AUMA, supra note 12, at 52-58.


\textsuperscript{248} See Daly, supra note 193 (arguing by some estimates, one quarter of all residents in Humboldt County have income tied to the marijuana trade, which suggests a large number of individuals currently involved in the illegal production of marijuana).\end{footnotes}
leave in place a potentially large number of illegal producers and sellers who can undercut the lawful market.

Developing a successful strategy to assure compliance with environmental and other regulations is essential if legalization’s goals are to be met. That strategy must provide enough incentives for illegal producers to participate in the legal trade.

B. Regulated Agriculture

The hearings that led to the passage of MMRSA focused on the volume of water used by marijuana production. The hearings created the general impression that marijuana is a particularly heavy user of water. That is not entirely true — for example, lettuce uses about the same amount of water per day as does a marijuana plant. But such comparisons overstate the amount of water that marijuana uses because a marijuana plant provides many more “servings” than does a head of lettuce. Almond growers have gotten unwanted publicity for the amount of water used to produce their crop. But almost all agricultural products consume significant quantities of water.

Similarly, the hearings created the impression that the marijuana industry uses pesticides more heavily than other agricultural producers. That too is not necessarily true. Crops like strawberries require large amounts of pesticides. The largest users of pesticides include basic staples in the American diet, including corn, and potatoes. Other widely grown crops like soybeans and cotton also

249 See generally Fish Flows, supra note 7.
251 See id.
254 See Fish Flows, supra note 7.
255 See Bernice Yeung et al., California’s Strawberry Industry Is Hooked on Dangerous Pesticides, GUARDIAN (Nov. 10, 2014), http://www.theguardian.com/us-news/2014/nov/10/sp-california-strawberry-industry-pesticides.
256 See Danielle Delorto, Dirty Dozen’ Produce Carries More Pesticide Residue, Group Says, CNN (June 1, 2010), http://www.cnn.com/2010/HEALTH/06/01/dirty.dozen.produce.pesticide/; Tom Philpott, 90 Percent of Corn Seeds Are Coated with Bayer’s Bee-
account for significant pesticide use in the United States. While proponents of organic and sustainable farming oppose widespread pesticide use, eliminating their use in American agriculture is politically infeasible.

Often missed in discussions about environmental harm caused by marijuana production are two facts: one of the primary concerns about production is that it takes place in pristine areas susceptible to environmental harm; another concern is that a regulated industry will still use pesticides and water. The tricky question is then what effect will legalization of marijuana have on those issues?

Eliminating marijuana production from public lands, like state and national parks, depends on issues raised in the previous section. Will the law create disincentives for illegal producers despite the fact that the current law enforcement efforts have done little to deter such production? But it may also depend on demand for marijuana, as developed more fully below.

Here, I want to focus on whether legalizing marijuana is likely to reduce the use of pesticides and fertilizers. Even on the assumption that marijuana production does not increase after the passage of AUMA, marijuana producers will be subject to state and federal environmental regulations. Data on quantities of pesticides and fertilizers used by illegal growers are unavailable. As a result, one can only speculate whether legalization will reduce their use. Certain, however, is that, like agriculture generally, marijuana producers will be able to use some fertilizers and pesticides on their crops.

Decimating Pesticide, MOTHER JONES (May 16, 2012, 8:00 AM), http://www.motherjones.com/tom-philpott/2012/05/catching-my-reading-ahead-pesticide-industry-confab.


261 See supra Part III.A.

262 See infra Part III.C.

263 See generally AUMA, supra note 12.

264 Cf. Why We Use Pesticides, U.S. ENVTL. PROT. AGENCY (last updated Aug. 12,
The best case scenario after legalization is that illegal production in pristine areas — at least on public lands — will decrease, reducing fertilizer and pesticide use in those areas. But depending on further regulations limiting the use of fertilizers and pesticides, legal marijuana production will continue to produce run-off containing those products.

The same can be said for water usage. Reduction in illegal production, again, especially in pristine areas, should protect streams and waterways in those areas. Further, the State Water Board will gain jurisdiction over legal producers. Producers will be under some pressure to comply with water restrictions. But, marijuana will continue to be a significant water consumer in the state.

Here, again, on the assumption that illegal production drops significantly, water usage should diminish on public lands. With regards to legal production, the open question will be whether the State Water Board has enough resources and credibility among legal producers to assure compliance with limitations on water usage.

C. Expanded Demand

A question that remains hard, if not impossible, to answer is whether legalization of marijuana will increase demand for the product. Many variables are at play in making that assessment: for

---

265 See generally AUMA, supra note 12.
266 See generally id.

267 One point that I have not raised is attempting to force marijuana production indoors. Apparently, indoor production uses less water than does outdoor production. See Nebula Haze, Growing Marijuana Indoors vs. Outdoors, GROW WEED EASY http://www.growweedeasy.com/indoors-vs-outdoors (last visited Sept. 29, 2016); Chris Roberts, Better Off Dry: The Drought Improved California’s Outdoor Marijuana Harvest, SF WEEKLY (Jan. 28, 2013), http://archives.sfweekly.com/sanfrancisco/chem-tales-drought-marijuana-harvest/Content?oid=3350029. It also could abate some other unpleasant side effects of marijuana production, including unpleasant odors that neighbors often resent. See Taylor Wofford, Neighbors of Colorado Marijuana Farm Say Its Dank Odor is Unbearable, NEWSWEEK (June 11, 2015, 12:10 PM), http://www.newsweek.com/dank-odor-nearby-marijuana-farm-makes-life-unlivable-coloradans-say-342164. A policymaker would be slow to advocate for indoor production exclusively. Outdoor producers would almost certainly resist the capital improvements needed for interior production and would have a significant incentive to remain in the illegal market.


269 See Miron, Policy in Colorado, supra note 44 (concluding that marijuana use has
example, how expensive is the product, which is dependent on the level of taxation? Will legalization make the product more or less attractive to potential users? At least for some users, part of the allure of marijuana is its illegality. How aggressively will those involved in the trade be able to advertise their products? Government can regulate commercial speech of sellers of some products, notably tobacco; but there are outer limits. And will the state choose to limit advertising by the newly legalized industry? At least at this stage, advocates like the authors of the Blue Commission Report urge limits on advertising. That may change: as discussed above, many investors see marijuana as a good investment. If capital flows to marijuana production, resources for lobbying to allow advertising may become available in large quantities.

Consider some of the rosy predictions about the effects of legalization, discussed above. NORML, for example, has projected that legalization would result in 50,000 jobs, $1.4 billion in wages, and a hemp industry to rival the state’s cotton production. If a legalized industry does produce such a bonanza, politicians will be hard-pressed to oppose industry efforts to expand demand. Sensibly, the Blue Ribbon Commission recommended that large producers not be allowed into the market, at least in the beginning. The commission did so out of concern that large corporations would be able to assert undue influence not significantly changed).

270 See Kilmer et al., supra note 53, at 15-20.
272 See BRC REPORT, supra note 5, at 46-47.
274 See, e.g., BRC REPORT, supra note 5, at 25 (summarizing policy recommendations on regulating marijuana marketing, sales and consumption).
275 See id.
276 See supra Part I.
277 See BRC REPORT, supra note 5, at 28. Despite California’s overall liberal environmental record, efforts to charge the oil industry a severance tax have gone nowhere. See Michael Hiltzik, A New Effort to End California’s Rip-off by Oil Producers, L.A. TIMES (Dec. 17, 2013, 10:53 AM), http://www.latimes.com/business/hiltzik/la-fi-ml-hil-oil-producers-20131217-story.html. That is almost certainly attributed to generous campaign contributions from industry organizations. See supra Part I.
278 Gieringer, supra note 173.
279 See BRC REPORT, supra note 5, at 3.
on the legislature. High returns might get the attention of big corporations and result in their eventual entry into the market.

A successful marijuana industry will create pressure for expansion. Even policymakers with serious concerns about the environment will be in a bind as pressure increases to expand marijuana production in California. The state’s agricultural dominance in most products is beyond dispute. That is also the case in marijuana production. Faced with increased demand, legislators could capitulate or, if they limit production of marijuana, they risk inviting back to California illegal producers. In either instance, increased production will further strain environmental resources.

D. Some Good News?

Above, I have suggested reasons why one should be agnostic whether legalization of marijuana will abate environmental harm. In many instances, my concern is about the human factor: counties like those in the Emerald Triangle have significant populations of illegal marijuana producers. Without incentives to bring those individuals out of the black market, many who favor legalization, for example, to abate environmental harm, will be disappointed. So, many variables are at play.

In recent years, significant changes may be afoot in the marijuana trade. Or at least I hope so. California’s marijuana producers included many who dropped out of the mainstream and wanted to live off the grid. Some were political radicals, others 60s hippies with an antigovernment philosophy. In the not-so-distant past, Emerald Triangle growers have resisted legalization efforts. But their children

\[\text{See id. at 3, 28.}\]
\[\text{See id. at 23.}\]
\[\text{See Carah et al., supra note 239, at 1 (estimating that 60%-70% of marijuana grown in USA is grown in California).}\]
\[\text{See supra Part II.}\]
\[\text{See Cherney, Growers Changing Their Minds, supra note 284.}\]
\[\text{See Cherney, Growers Changing Their Minds, supra note 286.}\]
and other younger growers have a different view.289 No doubt, they hated the overflights and raids of local farms.290 In part, because of the gray-legal medical marijuana market, some of them have become politically active.291 Luke Bruner, co-founder of California Cannabis Voice Humboldt, has stated, “We have come off the mountain, we have come out of the closet . . . now we want a voice at the table.”292 The new generation wants to legitimize marijuana production — or at least, that is the best hope for achieving the many goals of marijuana reform.

Not only are there many growers in place ready to comply with regulations. But also, again, at least anecdotally, a young generation of venture capitalists want to join the market.293 They may be a mixed blessing: unlike the early marijuana producers, they recognize the need to comply with legal requirements.294 But they also will have an incentive to push for greater production.295

CONCLUDING THOUGHTS

As is evident in this symposium,296 legalization of marijuana is a legitimate topic of inquiry. Even further, as I have asserted, legalization seems like a reality within a short period of time.297 But will legalization achieve the many promises of legalization advocates? I don’t know.

I have described myself as a “tepid legalizer.”298 Without apology, I admit to wanting to see a huge industry fairly taxed for many reasons.299 The marijuana industry has many external costs for which

289 See id.
290 See Cherney, Paramilitaries, supra note 240.
291 See Cherney, Growers Changing Their Minds, supra note 284.
292 Id.
293 See, e.g., Melendez, supra note 37 (discussing the rise of investment funds in marijuana related ventures).
294 But see Scott-Goforth, supra note 287 (exemplifying communities that did not adhere to these regulations).
297 See supra Part I.
298 Vitiello, Pot of Gold, supra note 5, at 1388.
299 Id. at 1373.
it does not pay its fair share. This paper has focused on whether legalization will lead to regulations that have the effect of making the marijuana trade pay for its environmental costs. On that score, I remain agnostic.

The California legislature and public have focused on the environmental costs of marijuana production. But many proponents of legalization have other goals in mind, including access to marijuana, maximization of profits, and increased revenue for local governmental entities. The real trick will be for environmentalists to have a big enough stake in the process of developing regulations if AUMA passes. Rightly, the drafters of AUMA have left implementation to other political entities; but that also leaves uncertain too many questions between legalization and effective enforcement.

One may take hope that the new generation of marijuana producers, like many new farmers, will also be environmentalists, interested in sustainable farming practices. In moments of optimism, I can imagine producers proud of organically or sustainably produced marijuana. Will that happen? As with so many other questions posed above, one ought to remain agnostic.

---

300 Cf. BRC REPORT, supra note 5, at 27 (recommending allocating revenue towards treatment programs).
301 See, e.g., Fish Flows, supra note 7 (showing the concerns over the environmental impact of legalized marijuana production); AUMA supra, note 12 (stating environmental concerns and provisions throughout proposal).
302 See, e.g., BRC REPORT, supra note 5 at 8-13.
303 See AUMA, supra note 12.
304 See generally AUMA, supra note 12 (including general provisions providing other agencies with implementation authority).