



MARIJUANA'S IMPACT *on* CALIFORNIA

California High Intensity Drug Trafficking Areas Report

2018



ACKNOWLEDGEMENTS

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- California Fatality Analysis Reporting System
- California Office of Traffic Safety (OTS)
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- Rocky Mountain High Intensity Drug Trafficking Area (RMHIDTA)
- Western States Information Network (WSIN)
- El Paso Intelligence Center
- Los Angeles Regional Criminal Information Clearinghouse (LA CLEAR)
- Los Angeles High Intensity Drug Trafficking Area (LA HIDTA)
- Central Valley, California High Intensity Drug Trafficking Area (CV HIDTA)
- Northern California High Intensity Drug Trafficking Area/ Northern California Regional Intelligence Center
- San Diego/ Imperial County High Intensity Drug Trafficking Area (SDI HIDTA)
- San Diego Law Enforcement Coordination Center (SD LECC)
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EXECUTIVE SUMMARY

Section One: THC Potency

- The average potency of Tetrahydrocannabinol (THC), the primary substance found in cannabis, has risen from about 1% in the early 60s rising to approximately 12% in 2012 with a general leveling off in 2013 and 2014.
- Marijuana extracts can contain over 90% THC.
- THC extraction can present its own risk to public health including the possibility of addiction along with negative reactions to the drug.

Section Two: California Youth Marijuana Use

- Since 2008, the prevalence of past month marijuana use for ages 12 or older has been higher in California than the national average.
- From 2003 to 2015, 7th, 9th, and 11th graders in California used more marijuana than cigarettes.

Section Three: California Marijuana Use Ages 18-25

- In 2016, daily marijuana use was at the highest level since the early 1980s for ages 19-22 (7.8%), reaching the highest level seen for non-college youth (12.8%) and among the highest for full-time college students (4.9%).

Section Four: California Marijuana Use Ages 26 and Older

- In 2015-2016, California's marijuana use for individuals 26+ years old surpassed the national average by 26.45%.

Section Five: California Impaired Driving

- The total number of drivers involved in a fatal crash in California decreased by 22% from 2005 to 2015, however drivers testing positive for marijuana involved in a fatal crash increased by 52.8% during the same period of time.

Section Six: Public Health

- From 2005-2016 there was a 481% increase in California emergency department visits and hospitalizations for any marijuana related use (primary or secondary diagnosis) with a 256% increase from 2009-2016.
- From 2005-2016 there was a 703% increase in California emergency department visits with marijuana as the primary reason for being seen.

Section Seven: Treatment

- Youth 12-17 years of age continue to make up the largest percentage of individuals seeking treatment for marijuana, both nationally and in the state of California.

Section Eight: Diversion and Eradication

- In 2016, California was the origin of 1,180 of the five Western States' 1,940 marijuana seizures.

Section Nine: THC Extraction Labs

- In 2016, 79% of THC extraction lab seizures reported nationally were found in California.

INTRODUCTION

In 1996, California preceded the rest of the United States in allowing marijuana use for medicinal purposes. Now, in 2018, recreational marijuana use is fully legal for individuals 21 years and over. This paper will outline the current and potential impacts of these policies.

Purpose

The purpose of this report is to describe the impacts that the legalization of marijuana for medical use has had in California, as well as the impacts of legalizing marijuana for recreational use. By gathering and examining data, citizens and policymakers can better understand the implications and effects of marijuana's increased presence in California.

Background

Due to concerns about public health risks and other possible impacts of marijuana, there is an on-going debate in the United States regarding the effects of the increasing prevalence of marijuana in our society.

Some arguments for reducing restrictions on marijuana use include:

- Eliminating arrests for possession and sale, resulting in fewer citizens with criminal records and a reduction in the incarcerated population;
- Freeing up law enforcement resources to target more serious and violent crimes, while reducing the disproportionate incarceration of minorities for possession of small quantities of marijuana;
- Reducing traffic fatalities since users may switch from alcohol to marijuana;
- Generating tax revenue from marijuana sales;
- Reducing profits for drug cartels trafficking marijuana.

Arguments for continuing restrictions include:

- Marijuana use among youth and young adults may increase due to availability and the normalization of use;
- Road fatalities may continue to increase due to marijuana impairment;
- Emergency room visits will continue to increase;
- Marijuana use will increase the costs of physical and mental health services;
- Marijuana will continue to be diverted from legal markets to illegal markets;
- Social and economic costs (e.g., a higher chance of dropping out of school) will far exceed the benefit to society of any potential revenue generated;¹
- Marijuana cultivation causes environmental degradation to air, water, land, and wildlife.

History of Marijuana in California

California's relationship with marijuana has evolved over time, and a brief look at how it has changed since marijuana first gained any legal status is necessary to understand where the state stands now and to create a starting point for this report.

Proposition 215

California was the first state to decriminalize possession of lesser quantities of marijuana, when voters approved the Compassionate Use Act on November 5, 1996; also known as Proposition 215. Proposition 215 was intended to ensure that seriously ill Californians could obtain and use marijuana for the treatment of serious medical diseases such as cancer, AIDS, and severe spasms.² Currently, Proposition 215 makes California one of 25 states that allows marijuana for medical uses.

Proposition 215 allows the use of marijuana upon recommendation of a physician and ensures that patients and primary caregivers are not prosecuted or sanctioned. It also encourages the federal and state governments to implement plans to provide for the safe and affordable distribution of marijuana to all patients medically in need.

To facilitate the tracking of medical marijuana distribution, the California Department of Public Health Medical Marijuana Program (MMP) was specifically established to create a state-authorized medical marijuana identification card (MMIC) program and a registry database for verification of qualified patients and their primary caregivers. However, this program is voluntary.

California State Assembly Bill 420 (SB420)

The Medical Marijuana Protection Act, which became effective on January 1, 2004, created a voluntary identification card system for purchasing medical marijuana. This bill was signed by Governor Gray Davis in 2003 and was intended to clarify the scope of Proposition 215 to ensure its equitable application across the state. SB 420 allows the California Attorney General to clarify policies for the possession and cultivation of marijuana, and to create new regulations as needed.

Commercialization of Medical Marijuana

Beginning in 2010, marijuana in California grew into a commercialized industry, with the number of dispensaries and other marijuana-related businesses increasing quickly. In 2007, Los Angeles reported 186 dispensaries compared to 2010 when they reported a staggering 545 dispensaries, an increase of 193%.³

California State Assembly Bill 1449 (AB 1449)

In September 2010, Governor Arnold Schwarzenegger signed California State Assembly Bill 1449 (AB 1449) into law, which reduced the sanction for possessing less than one ounce of marijuana from a misdemeanor to an infraction, legally the equivalent of a parking ticket. This essentially decriminalized the personal possession of up to one ounce of marijuana.⁴

Proposition D (Los Angeles County), Medical Marijuana Regulation and Taxation Ordinance

Proposition D, the Medical Marijuana Regulation and Taxation Ordinance, was approved in 2013, and limited the number of dispensaries in Los Angeles County to no more than 135 open before September 2007. Under Proposition D, medical marijuana dispensaries and landlords who lease space to these dispensaries can be prosecuted if the shops do not meet several requirements, including, registration under past Los Angeles ordinances, and being located a required distance from public parks, schools, and other facilities. This measure also raised taxes on these businesses to \$60.00 for every \$1,000.00 of gross receipts.⁵

California State Assembly Bills 21, 2516 and 2679; and Senate Bill 837

The Medical Cannabis Regulation and Safety Act (MCRSA) includes four bills, and directed the California Department of Food and Agriculture to create the Medical Cannabis Cultivation Program (MCCP). The MCCP was charged to create a licensing program for medical cannabis cultivation, implement a “track and trace” program and evaluate potential environmental impacts in compliance with the California Environmental Quality Act.⁶ These bills were enacted September 2015.

California State Assembly Bills 266 and 243, and Senate Bill 643

The Medical Marijuana Regulation and Safety Act 2016 (MMRSA) includes three bills: Assembly Bill 266, Assembly Bill 243, and Senate Bill 643. Assembly Bill 266 (Bonta, Cooley, Jones-Sawyer, Lackey, and Wood) establishes a dual licensing structure requiring state and local license permits. Assembly Bill 243 (Wood) aims to establish a regulatory and licensing structure for cultivation sites under the Department of Food and Agriculture. Senate Bill 643 (McGuire) sets the criteria for the licensing of medical marijuana businesses, regulates physicians, and recognizes local authority to levy taxes and fees.⁷ These bills took effect January 2016.

Full Legalization of Marijuana

California Proposition 64

On November 8, 2016, California voters approved Proposition 64 or, the Adult Use of

Marijuana Act (AUMA) which legalized the recreational use of cannabis. The law permits adults 21 and up to possess 1 ounce of cannabis per day. However, commercial sales of marijuana for recreational use were postponed until January 1, 2018.⁸ Therefore, it is unclear at the time of the publishing of this report the effect that the AUMA has had on the public health, education and criminal justice systems in California.

California State Assembly Bill 133 and Senate Bill 94

The Medicinal and Adult-Use Cannabis Regulation and Safety Act (MAUCRSA) combined elements of the Medical Cannabis Regulation and Safety Act (MCRSA) and the Adult Use of Marijuana Act (AUMA). This act creates one regulatory system for both medicinal and recreational (adult-use) cannabis under the California Department of Food and Agriculture (CDFA).⁹

Federal Position on the Legalization of Marijuana

The Ogden Memo

Marijuana use, whether intended for medical purposes or not, is illegal at the federal level under the Controlled Substances Act of 1970. On October 19, 2009, Deputy Attorney General David Ogden issued a memo to provide clarification and guidance with regard to federal investigations and prosecution, to federal prosecutors in states with medical marijuana laws. This memo emphasized that federal prosecution resources should be used rationally and efficiently and should only target those “individuals whose actions are in clear and unambiguous compliance with existing state laws providing for the medical use of marijuana.”¹⁰

The federal government should continue to prosecute:

- Unlawful possession or unlawful use of firearms;
- Violence;
- Sales to minors;
- Financial and marketing activities inconsistent with the terms, conditions, or purposes of state law, including evidence of money laundering activity and/or financial gains or excessive amounts of cash inconsistent with purported compliance with state or local law;
- Amounts of marijuana inconsistent with purported compliance with state or local law;
- Illegal possession or sale of other controlled substances; or
- Ties to other criminal enterprises.¹¹

The Cole Memo

As with medical marijuana, recreational marijuana use is also illegal at the federal level. However, on August 29, 2013, a memo was released by the Department of Justice's Office of the Deputy United States Attorney James Cole. This memo described a new set of priorities for federal prosecutors operating in states which had legalized the medical use of marijuana. The Cole memo provided direction to U.S. Attorneys "in light of state ballot initiatives that legalized under state law the possession of small amounts of marijuana and provide for the regulation of marijuana production, processing, and sale."¹²

The Cole Memo was directed to federal prosecutors and federal law enforcement agencies and, while refocusing federal resources, identified eight priority areas that states needed to ensure would not be violated.

- 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;
- Preventing marijuana possession or use on federal property¹³

Rescinding of the Cole Memo

On January 4, 2018 the memorandum was rescinded by a memo signed by Attorney General Jeff Sessions. In a release the United States Department of Justice stated;

"The Department of Justice today issued a memo on federal marijuana enforcement policy announcing a return to the rule of law and the rescission of previous guidance documents. Since the passage of the Controlled Substances Act (CSA) in 1970, Congress has generally prohibited the cultivation, distribution, and possession of marijuana.

In the Memorandum, Attorney General Jeff Sessions directs all U.S. Attorneys to enforce the laws enacted by Congress and to follow well-established principles when pursuing prosecutions related to marijuana activities. This return to the rule of law is also a return of trust and local control to

federal prosecutors who know where and how to deploy Justice Department resources most effectively to reduce violent crime, stem the tide of the drug crisis, and dismantle criminal gangs.”

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NOTE:

- **MULTI-YEAR COMPARISONS ARE GENERALLY BETTER INDICATORS OF TRENDS. ONE-YEAR FLUCTUATIONS DO NOT NECESSARILY REFLECT A NEW TREND.**
- **SOME PERCENT CHANGES ADDED TO GRAPHS WERE ADDED AND CALCULATED BY SDI HIDTA.**
- **THIS REPORT WILL CITE DATASETS WITH TERMS SUCH AS “MARIJUANA-RELATED” OR “TESTED POSITIVE FOR MARIJUANA.” THAT DOES NOT NECESSARILY PROVE THAT MARIJUANA WAS THE CAUSE OF THE INCIDENT.**

¹ Meier, Madeline H.; Avshalom, Caspi; Ambler, Anthony; Harrington, HonaLee; Houts, Renate; Keefe, Richard S.E.; McDonald, Kay; Ward, Aimee; Poulton, Richie and Moffitt, Terrie E. Edited by Michael I. Posner. “Persistent Cannabis Users show Neuropsychological Decline from Childhood to Midlife.” *Proc Natl Acad Sci USA*. 2012; 109:E2657-2664 www.pnas.org/cgi/doi/10.1073/pnas.1206820109

² Medical Marijuana Identification Card Program. California Department of Public Health CDPH. <https://www.cdph.ca.gov/programs/MMP/Pages/default.aspx>

³ Freisthler, Bridget; Kepple, Nancy J.; Simms, Revel; and Martin, Scott E. “Evaluating Medical Marijuana Dispensary Policies: Spatial Methods for the Study of Environmentally-Based Interventions.” *Am J Community Psychol*. DOI: 10.1007/s10464-012-9542-6 UCLA March 1, 2014 <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3683594/>

⁴ Public Policy Institute of California, Just the facts, “California’s Attitudes toward Marijuana Legalization.” www.ppic.org/main/publication.asp?i=1150

⁵ clerk.lacity.org

⁶ Medical Cannabis Cultivation Program, “Summary of the California Department of Food and Agriculture’s Role in Implementing the Medical Cannabis Regulation and Safety Act.” Cdfa.ca.gov/is/mccp. 2018

⁷ CA.GOV, California State Board of Equalization, Feb. 2016 https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB643 State of California Authenticated Electronic Legal Material.

⁸ Legislative Analyst’s Office (LOA) “Proposition 64. Marijuana Legalization. Initiative Statute.” <http://www.lao.ca.gov/ballotanalysis/proposition?number=64&year=2016>

⁹ California Department of Food and Agriculture, Emergency Regulations Summary for Cannabis Cultivators, cannabis.cdfa.ca.gov

¹⁰ U.S. Department of Justice, “Memorandum for Selected United State Attorneys on Investigations and Prosecutions in States Authorizing the Medical Use of Marijuana.”
<https://www.justice.gov/archives/opa/blog/memorandum-selected-united-state-attorneys-inv...>

¹¹ Ibid

¹² U.S. Department of Justice, Office of the Deputy Attorney General, “Memorandum for all United States Attorneys.” <http://dfi.wa.gov/documents/banks/cole-memo-08-29-13.pdf>

¹³ Ibid

¹⁴ <https://www.justice.gov/opa/pr/justice-department-issues-memo-marijuana-enforcement>

SECTION ONE: THC Potency

Some Findings

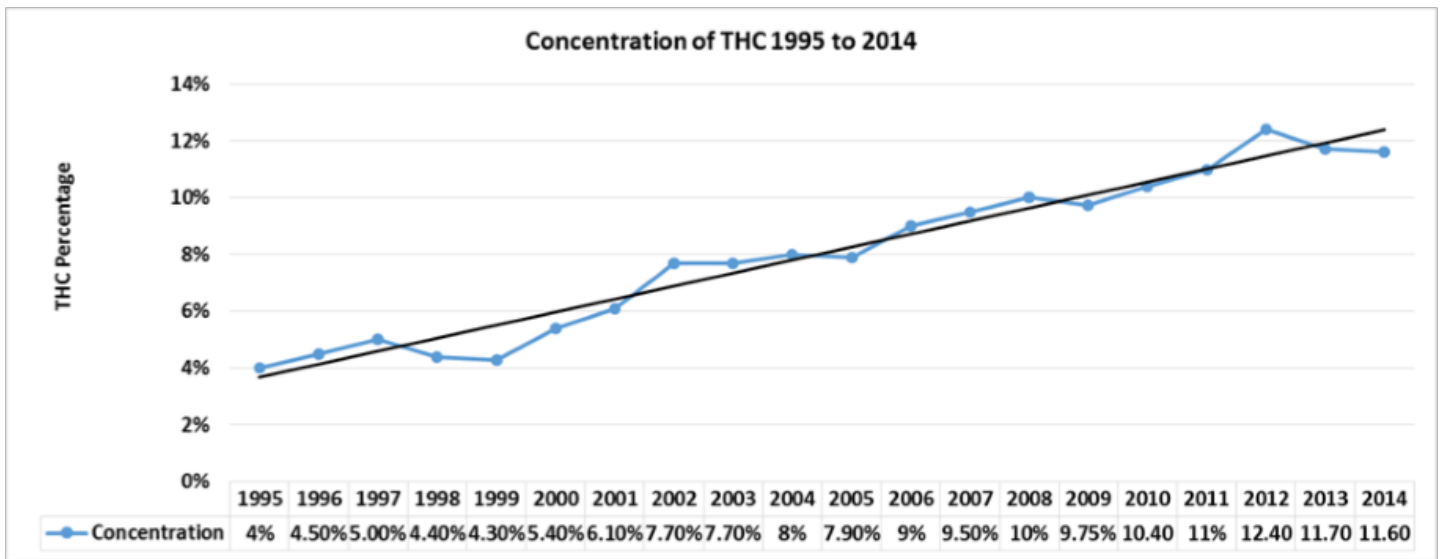
- In 2016, 28.6 million individuals ages 12 and older reported past month illicit drug use. Of those 28.6 million who reported past month illicit drug use, 24 million of them reported using marijuana. Of that 24 million, 42% (10 million) were 12-25 years of age.¹
- The average potency of Tetrahydrocannabinol (THC), the primary psychoactive found in cannabis, has risen from about 1% in the early 60s rising to approximately 12% in 2012 with a general leveling off in 2013 and 2014.²
- Marijuana extracts can contain over 90% THC.
- THC extraction can present its own risk to public safety including the possibility of addiction along with negative reactions to the drug.³

Definitions:

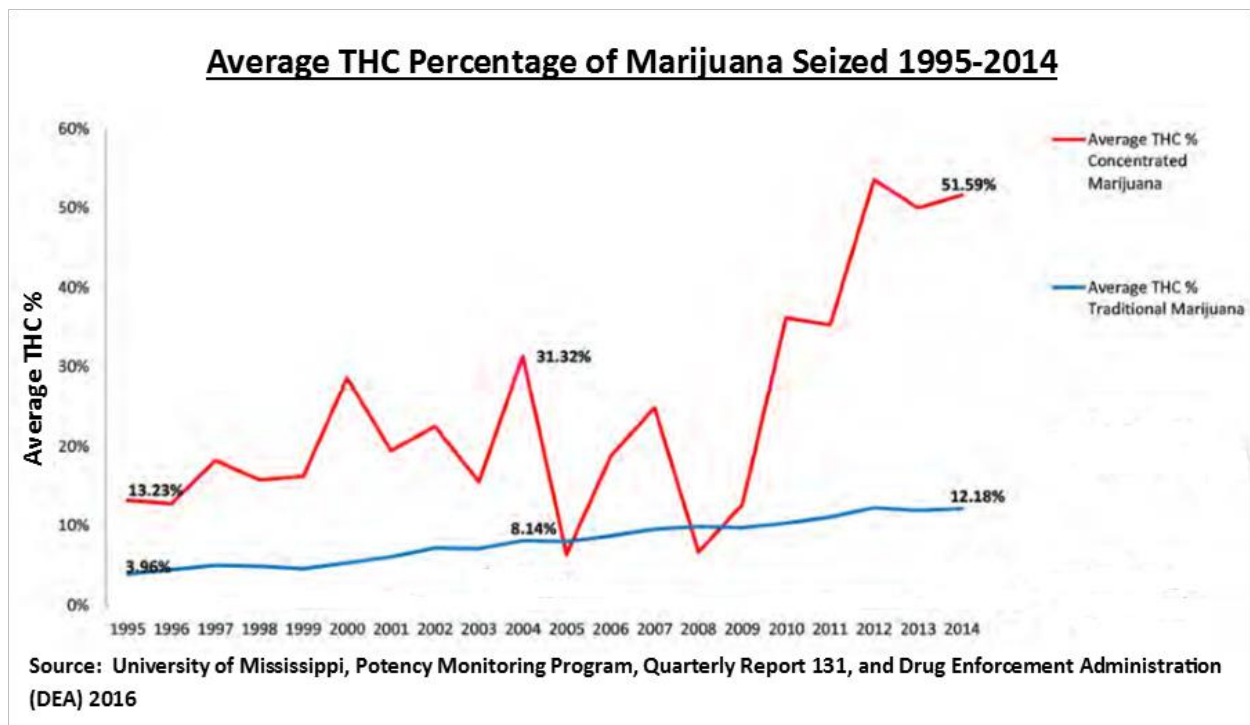
Illicit Drug: A highly addictive and illegal substance.

Tetrahydrocannabinol (THC): The chemical responsible for most of marijuana's psychological effects. It acts much like the cannabinoid chemicals made naturally by the body.

Marijuana Concentrate: a highly potent tetrahydrocannabinol (THC) concentrated mass that is most similar in appearance to either honey or butter.



Source: The University of Mississippi Potency Monitoring Project



Source: University of Mississippi, Potency Monitoring Program, Quarterly Report 131, and Drug Enforcement Administration (DEA) 2016

- ❖ The average THC content of seized marijuana has increased steadily over the years. In 2014, the average THC potency of traditional leafy marijuana seizures was approximately 12 %. The highest level of THC tested for traditional marijuana by the University of Mississippi's Potency Monitoring Program was 37% (see graph above)⁴.
- ❖ In 2014, the average THC content of "concentrated marijuana" was 51.59%, which represents a significant increase from the 13% average THC content of products in 1995.⁵

SECTION TWO: California Youth Marijuana Use

Some Findings

- California youth (ages 12-17) have a lower perception of risk of smoking marijuana once a month compared to the national average.
- Since 2008, the prevalence of past month marijuana use for ages 12 or older has been higher in California than the national average.
- In California, students enrolled in non-traditional schools show a higher rate of prevalence of marijuana use in 30 days.
- According to the California Healthy Kids Survey (CHKS), past 30-day use for California students' grades 7, 9, and 11, has continued to increase since 2005.
- From 2003 to 2015 7th, 9th, and 11th graders in California used more marijuana than cigarettes.

From school year 2011/2012 until 2016/2017

- The total number of public school expulsions in the state of California has decreased at a rapid rate (41.1%).
- The percentage of illicit drug related expulsions in the state of California has remained relatively steady from 2011-2017 (35%-30%).
- Restorative Practices began in 2011, requiring school districts to come up with alternatives to expulsion.

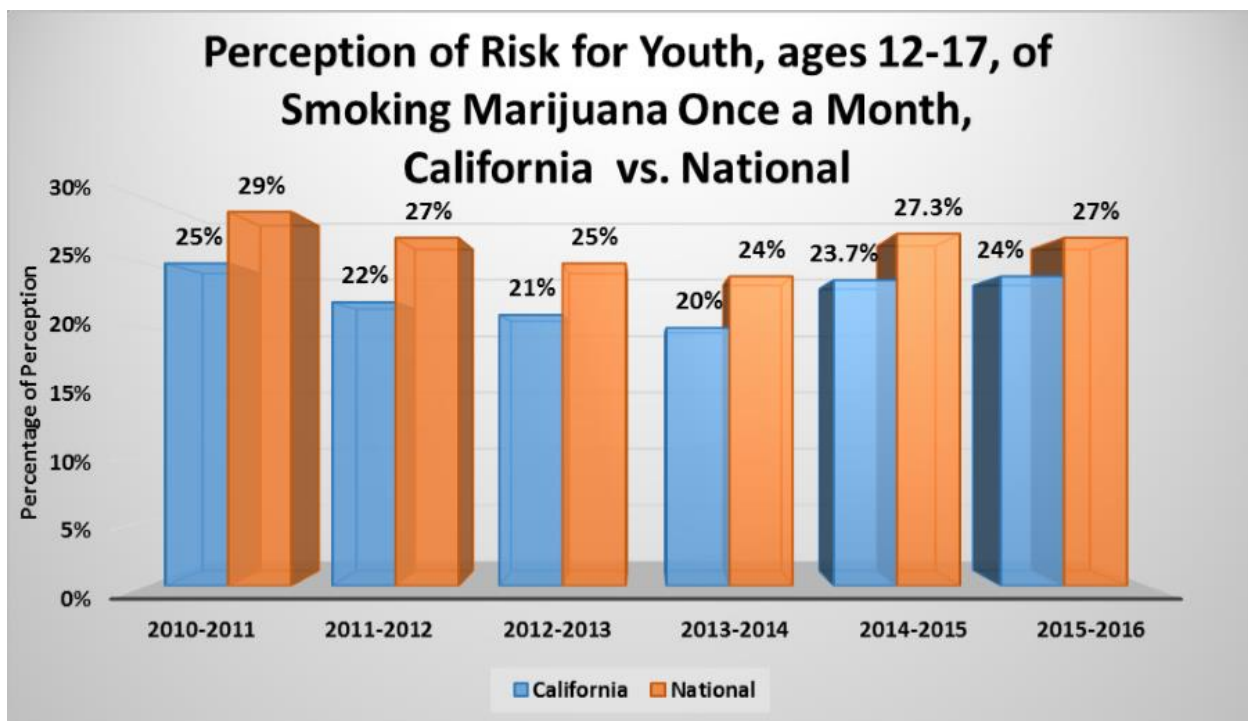
Definitions:

The California Healthy Kids Survey (CHKS): The largest statewide survey of resiliency, protective factors, risk behaviors, and school climate in the nation. This survey is administered in California every other year to 7th, 9th and 11th grade students in most public school districts.

Substance Abuse and Mental Health Services Administration (SAMHSA): A branch of the U.S. Department of Health and Human Services.

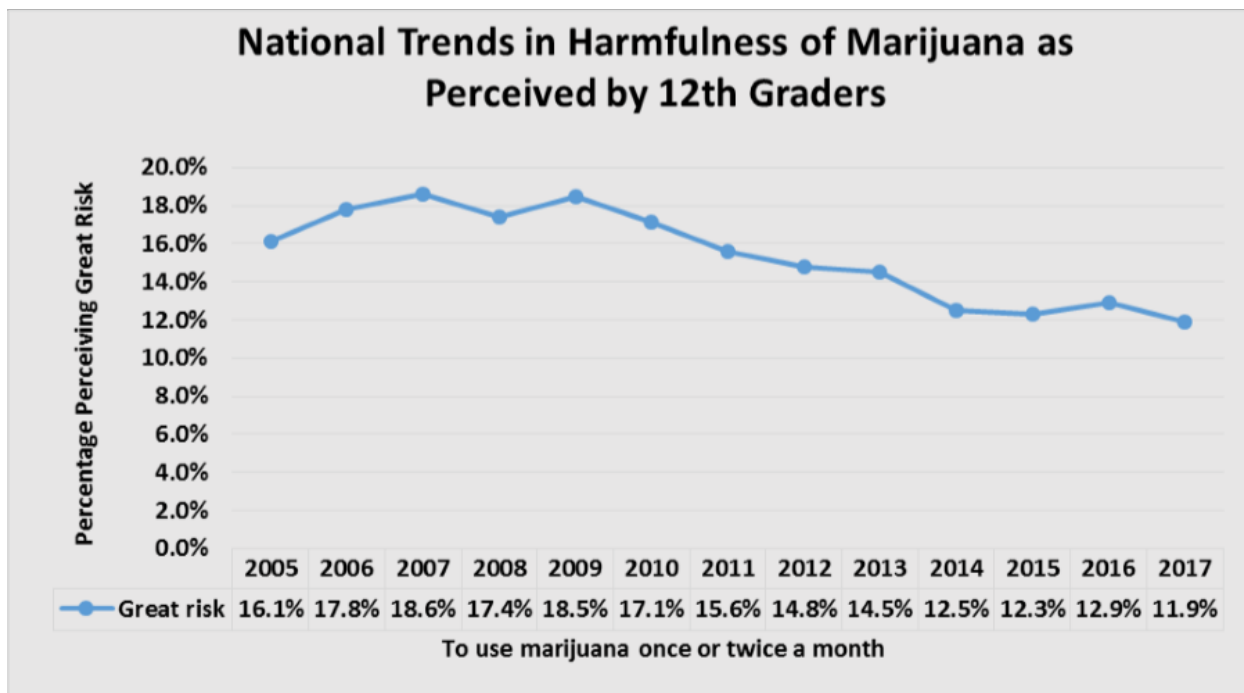
National Survey on Drug Use and Health (NSDUH): Provides up-to-date information on tobacco, alcohol, and drug use, mental health and other health-related issues in the United States.

Non-Traditional School: A school that exists for the distinct purpose to serve students who have unique instructional needs that are not adequately addressed in a traditional classroom setting.

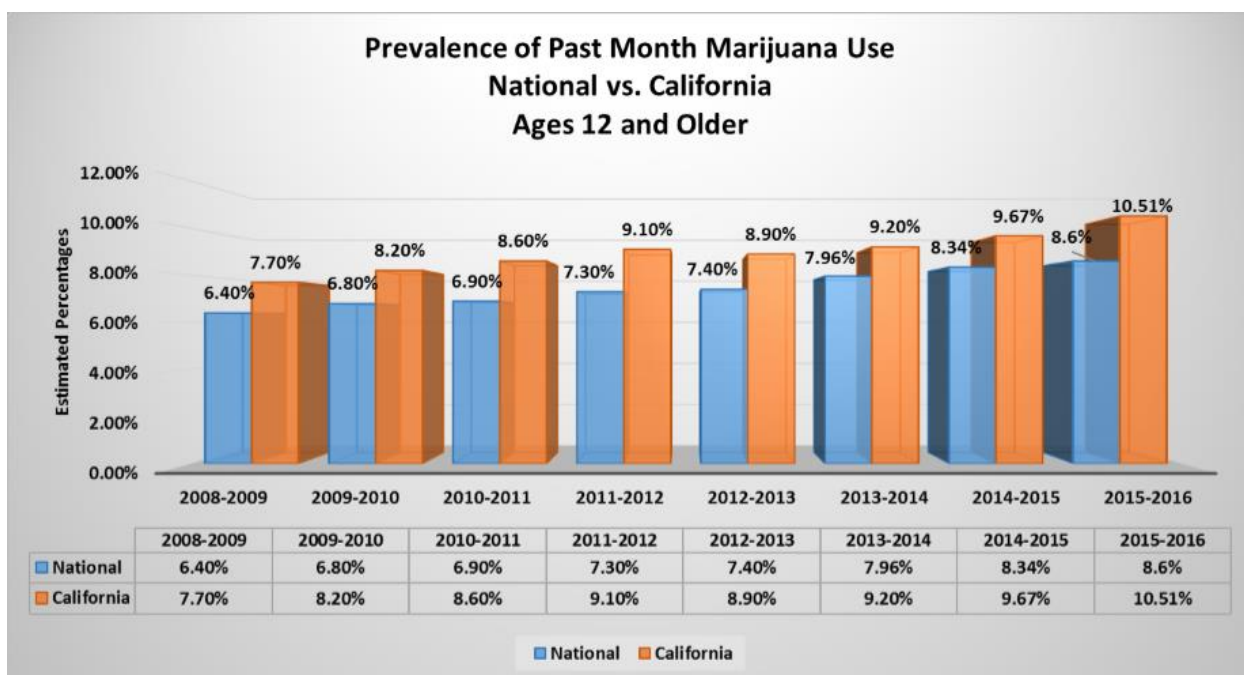


Source: Perception of Great Risk of Smoking Marijuana Once a Month, National Survey on Drug Use and Health (NSDUHs)

- ❖ California youth have consistently had a lower perception of risk, of smoking marijuana, once a month compared to the national average.

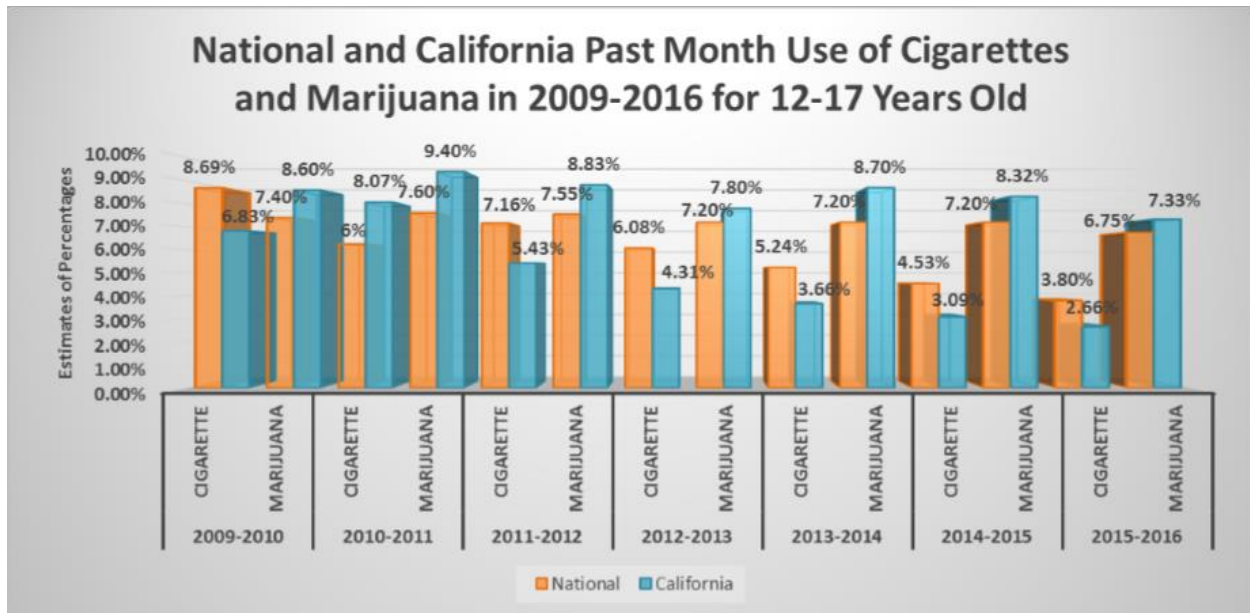


Source: Monitoring the Future Survey, the University of Michigan



Source: Substance Abuse and Mental Health Services Administration (SAMHSA) Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (NSDUHs), 2015 and 2016

- ❖ California continues to have a higher rate of past month use of marijuana in individuals ages 12 and older.

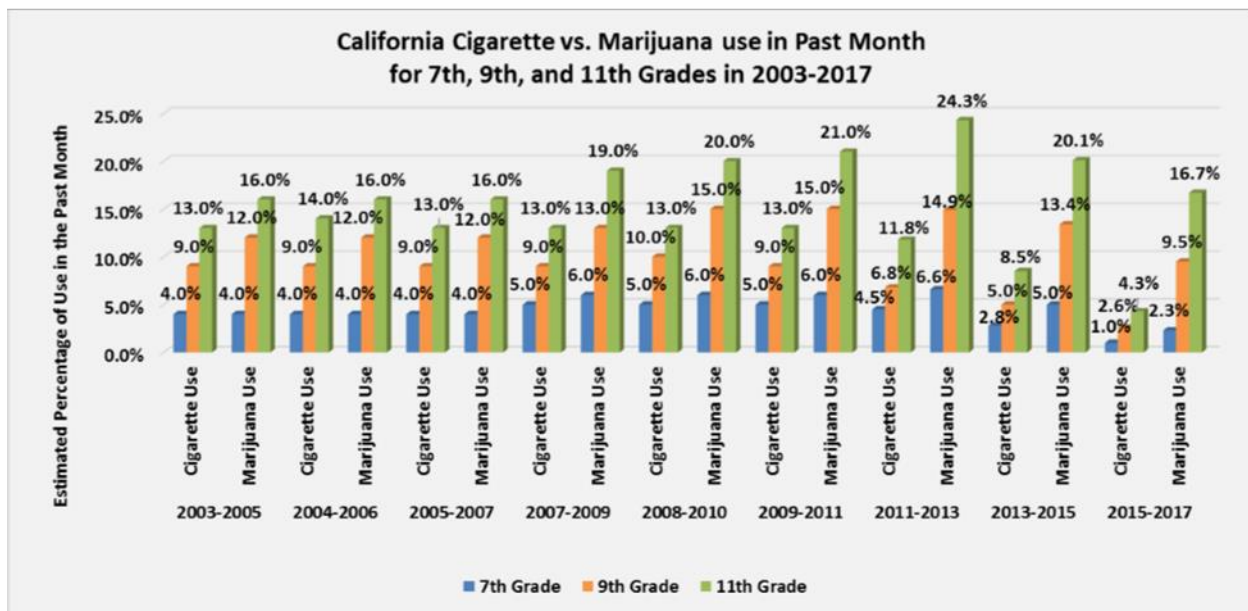


Source: Substance Abuse and Mental Health Services Administration (SAMHSA) Marijuana Use in the Past Month, 2009-2016

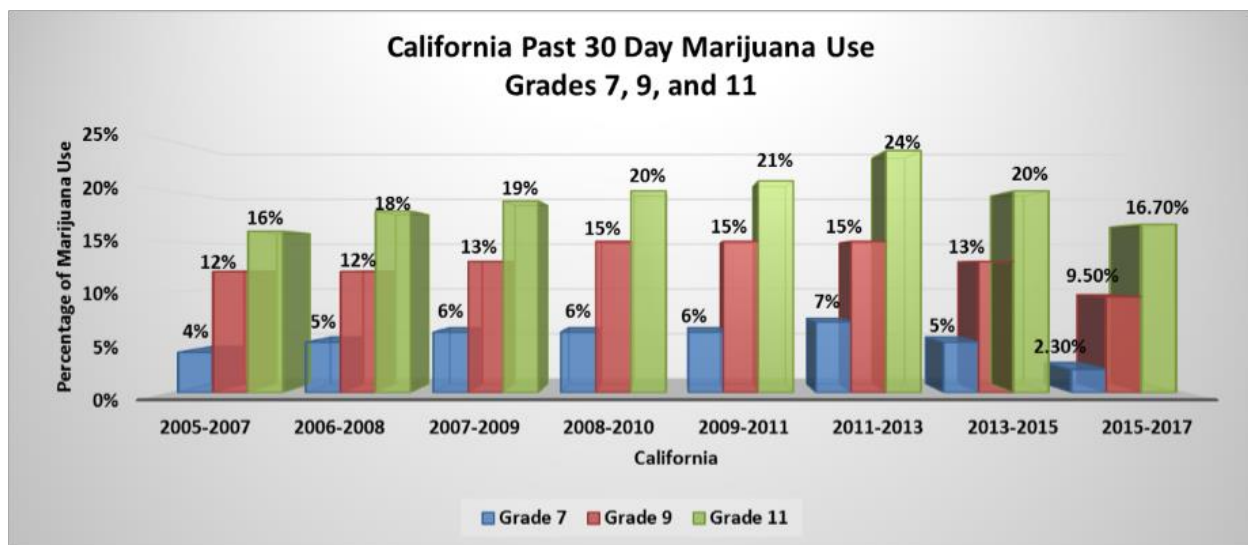
Marijuana use in the past month, by grade level: Year(s) 2013-2015						
California	Percent					
Grade Level	0 Days	1 Day	2 Days	3-9 Days	10-19 Days	20-30 Days
7th Grade	95.8%	1.5%	0.7%	0.7%	0.5%	0.8%
9th Grade	87.7%	3.4%	2.2%	2.8%	1.6%	2.3%
11th Grade	82.0%	4.6%	2.9%	4.2%	2.4%	3.9%
Non-Traditional	54.7%	5.2%	6.1%	8.7%	6.0%	19.5%

Source: California Healthy Kids Survey (CHKS). Kidsdata.org, WestEd, 2018

- ❖ Students enrolled in non-traditional schools show a higher rate of prevalence of marijuana use in the past 30 days.

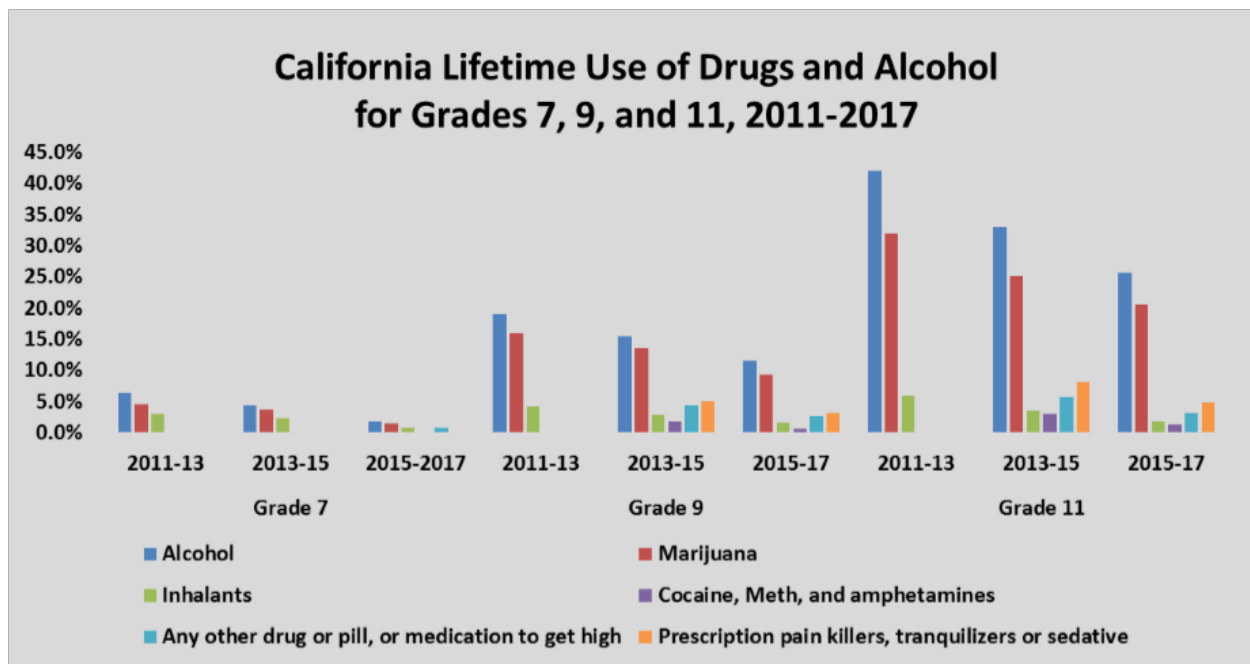


Source: California Healthy Kids Survey (CHKS). Kidsdata.org, California Student Survey (WestED)



Source: California Healthy Kids Survey (CHKS), Kidsdata.org. California Student Survey for 2005-2007 through 2013-2017

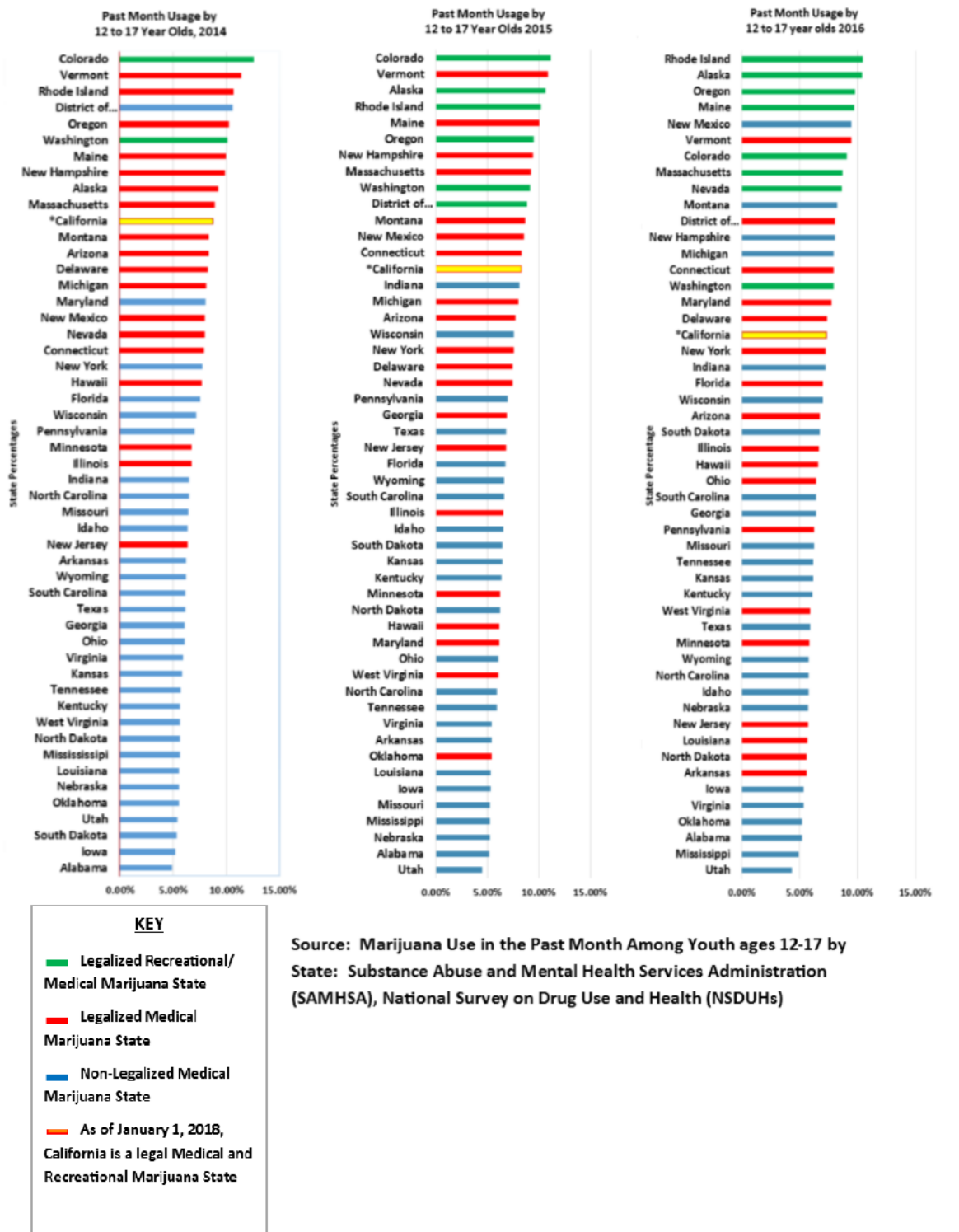
- ❖ California Past 30 Day Marijuana Use has been decreasing since the 2013-2015 survey period.



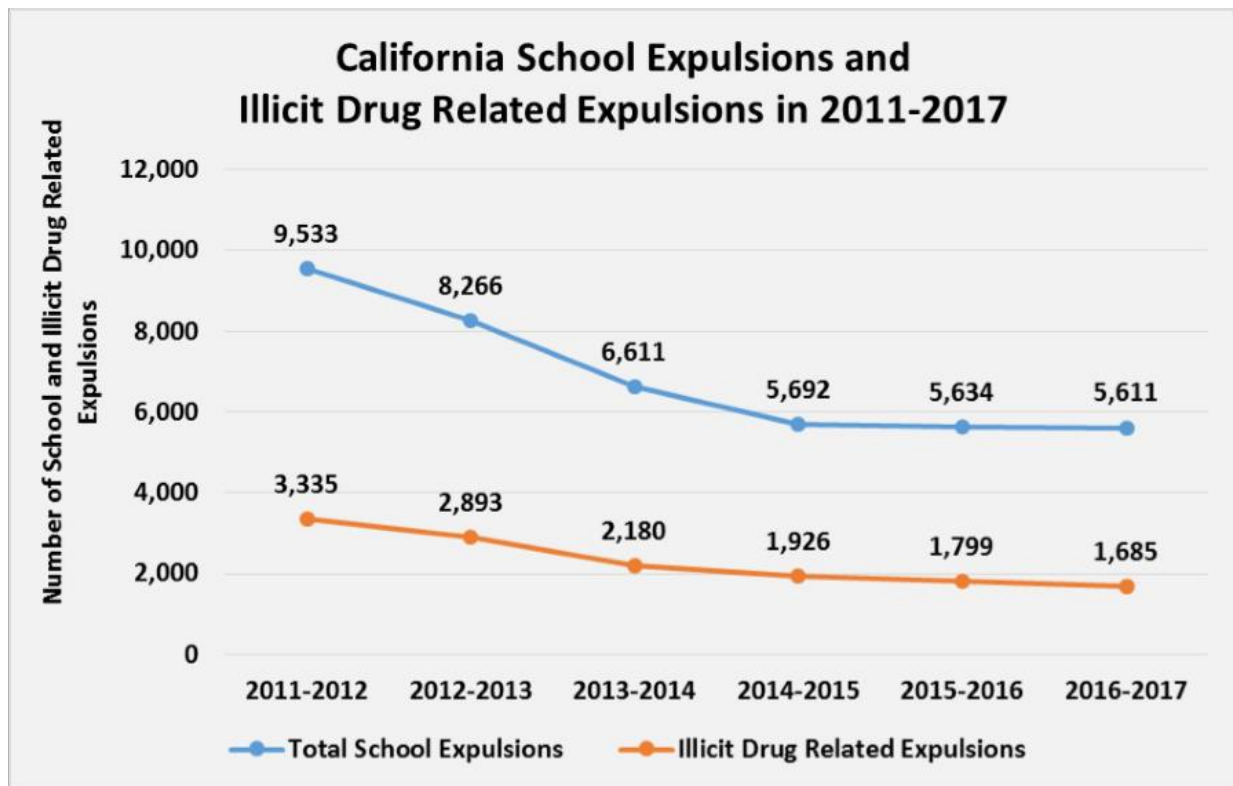
California Healthy Kids Survey (CHKS)

- ❖ California Lifetime Use of Drugs and Alcohol for grades 7,9 and 11 has been decreasing since the 2011-2013 survey period.

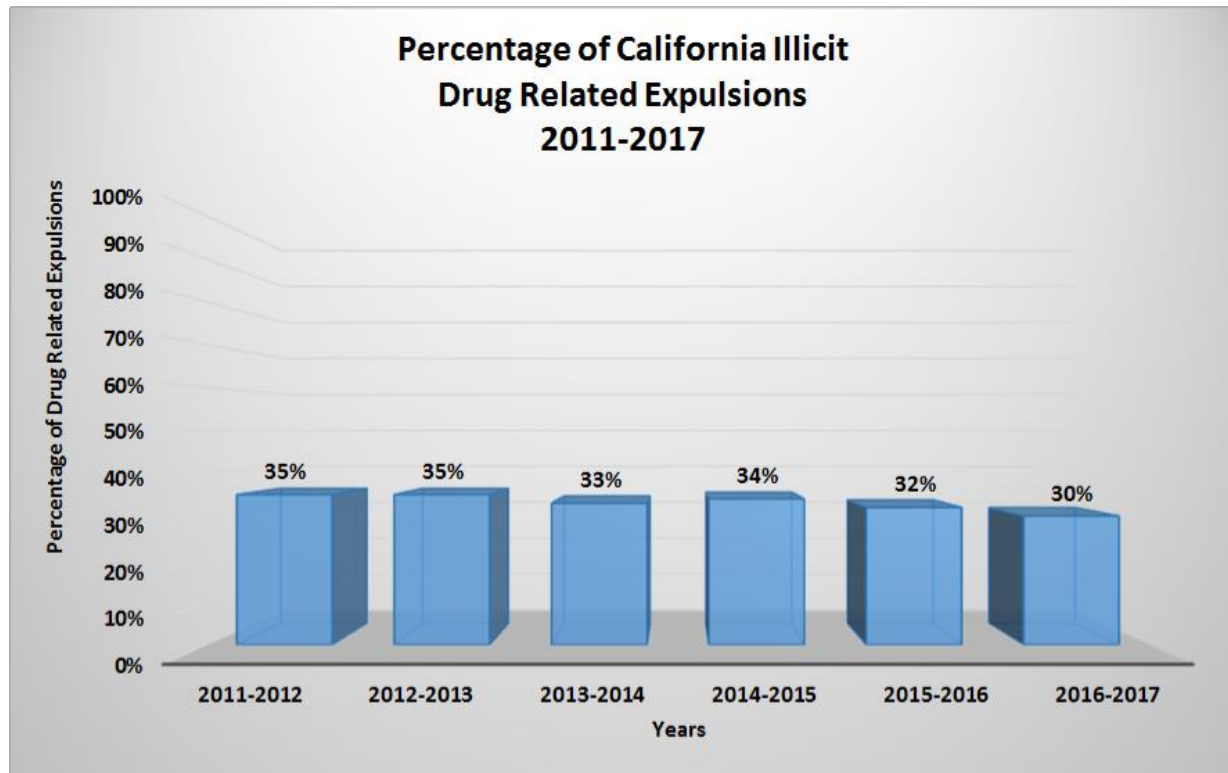
National Ranking by State of Past Month Use Ages 12-17, 2014-2016



- ❖ From 2014 to 2016, states with legalized recreational and/or medical marijuana laws ranked higher in past month usage of marijuana by 12-17 year olds than most non-legalized states.



Source: Expulsion Rate - Statewide , California Department of Education (CDE) 2018



Source: Expulsion Rate - Statewide , California Department of Education (CDE) 2018

- ❖ Illicit drug related expulsions account for roughly 1/3rd of all California school expulsions.

SECTION THREE: California Marijuana Use Ages 18-25

Some Findings

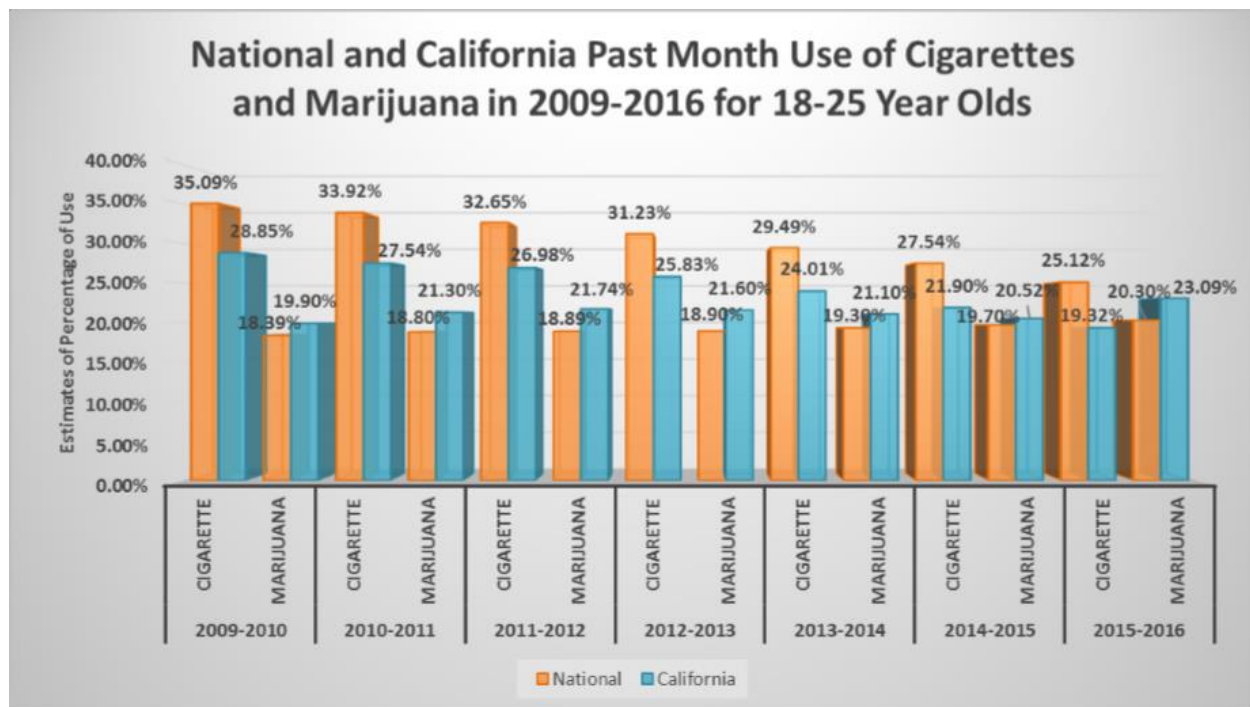
- In 2015-2016, California's marijuana use by 18-25 year olds surpassed their use of cigarettes by 13.7%.
- In 2016, daily marijuana use was at the highest level since the early 1980s for ages 19-22 (7.8%), reaching the highest level seen for non-college youth (12.8%) and among the highest for full-time college students (4.9%).

Definitions:

Substance Abuse and Mental Health Services Administration (SAMHSA): A branch of the U.S. Department of Health and Human Services.

National Survey on Drug Use and Health (NSDUH): Provides up-to-date information on tobacco, alcohol, and drug use, mental health and other health-related issues in the United States.

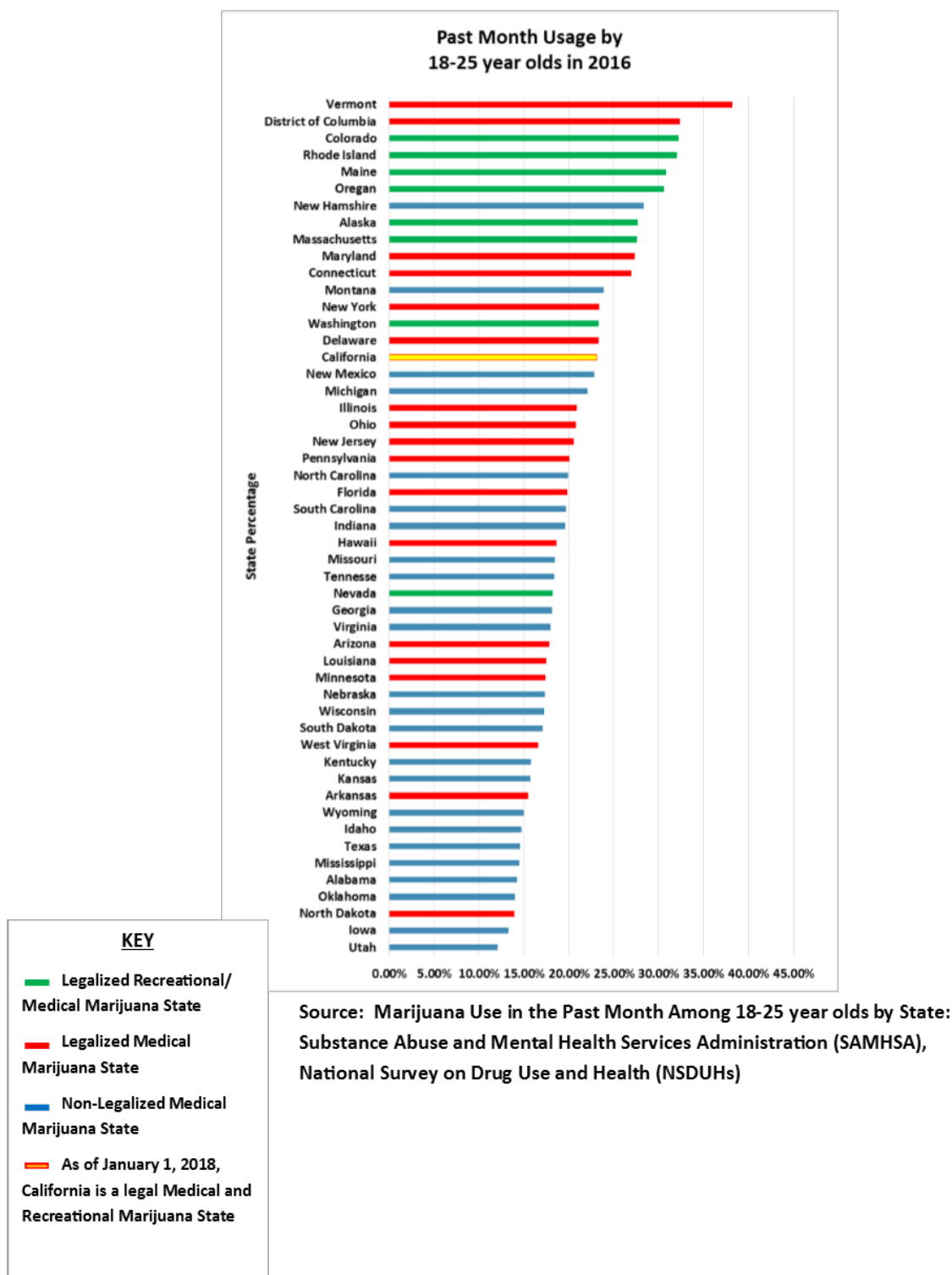
Monitoring the Future (MTF): This study/survey is funded by research grants from the National Institute on Drug Abuse, a part of the National Institutes of Health. MTF is an ongoing study of behaviors, attitudes and values of American secondary school students, college students and young adults.



Source: Substance Abuse and Mental Health Services Administration (SAMHSA) Marijuana Use in the Past Month, 2009-2016

- ❖ California marijuana use of 18-25 year olds has consistently been higher than the national use average.

National Ranking by State of Past Month Use Ages 18-25, 2016



- ❖ In 2016, states with legalized recreational and/or medical marijuana laws ranked higher in past month usage of marijuana by 18-25 year olds than most non-legalized states.

2016 Monitoring the Future College Students and Young Adults Survey Results



19- to 22-Year-Olds	4.0%	5.3%	7.8%
College	2.8%	4.3%	4.9%
Non-College	5.3%	6.7%	12.8%

Daily marijuana use is at the highest level since the early 1980s for this age group.

Source: DRUGABUSE.GOV

- ❖ These findings are from the 2016 (Monitoring the Future) MTF survey results on drug use among college students compared to their peers not attending college (ages 19-22).

SECTION FOUR: California Marijuana Use Ages 26 and Older

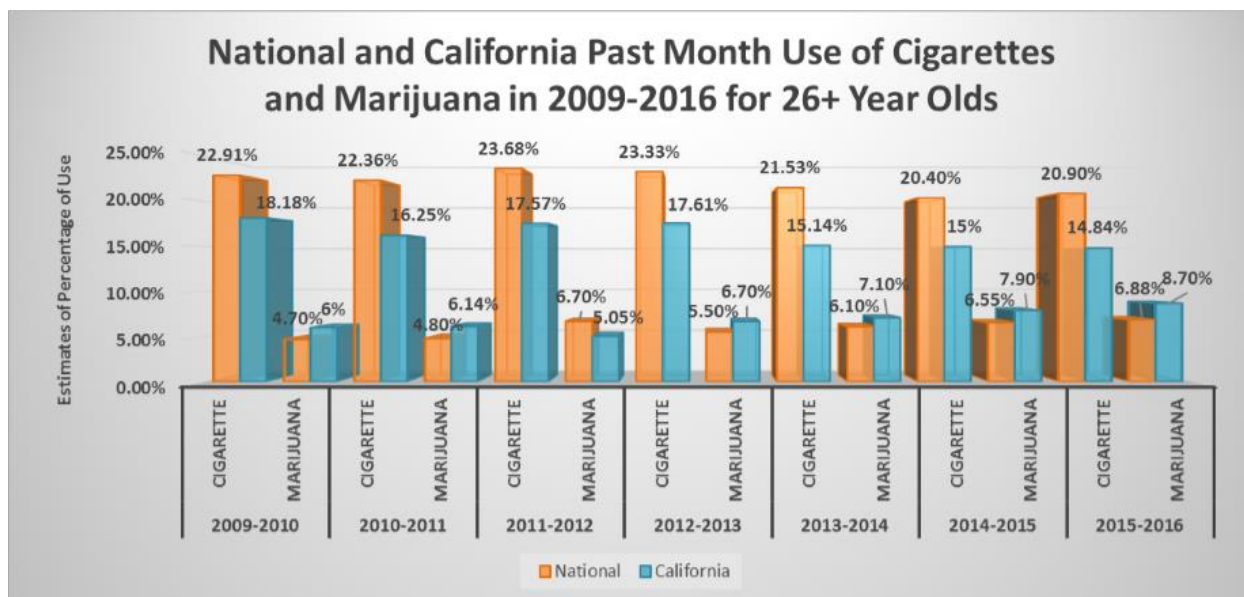
Some Findings

- In 2015-2016, California's marijuana use for individuals 26+ years old surpassed the national average by 26.45%.

Definitions:

Substance Abuse and Mental Health Services Administration (SAMHSA): A branch of the U.S. Department of Health and Human Services.

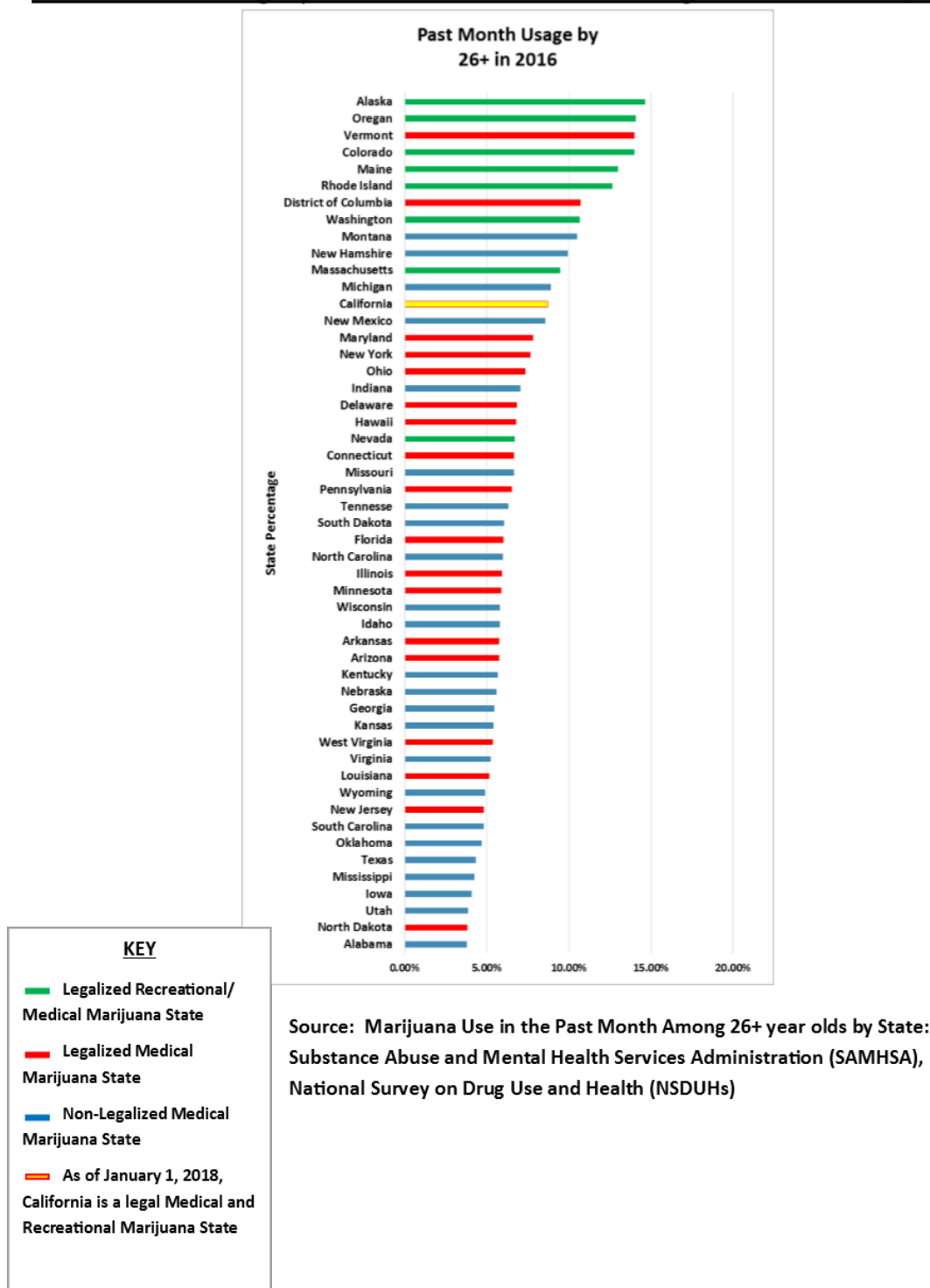
National Survey on Drug Use and Health (NSDUH): Provides up-to-date information on tobacco, alcohol, and drug use, mental health and other health-related issues in the United States.



Source: Substance Abuse and Mental Health Services Administration (SAMHSA) Marijuana Use in the Past Month, 2009-2016

- ❖ California marijuana use of individuals 26+ years old has consistently been higher than the national use average.

National Ranking by State of Past Month Use Ages 26 and Older, 2016



- ❖ In 2016, states with legalized recreational and/or medical marijuana laws ranked higher in past month usage of marijuana by ages 26 and older than most non-legalized states.

SECTION FIVE: California Impaired Driving

Some Findings

- The total number of drivers involved in a fatal crash in California decreased by 22% from 2005 to 2015, however drivers testing positive for marijuana involved in a fatal crash increased by 52.8% during the same period of time.

Definitions:

Fatality Analysis Reporting System (FARS): A Nationwide census providing the National Highway Traffic Safety Administration (NHTSA), Congress and the American public yearly data regarding fatal injuries suffered in motor vehicle traffic crashes.

California Fatalities Involving Drivers with a Positive Drug Test 2005-2016

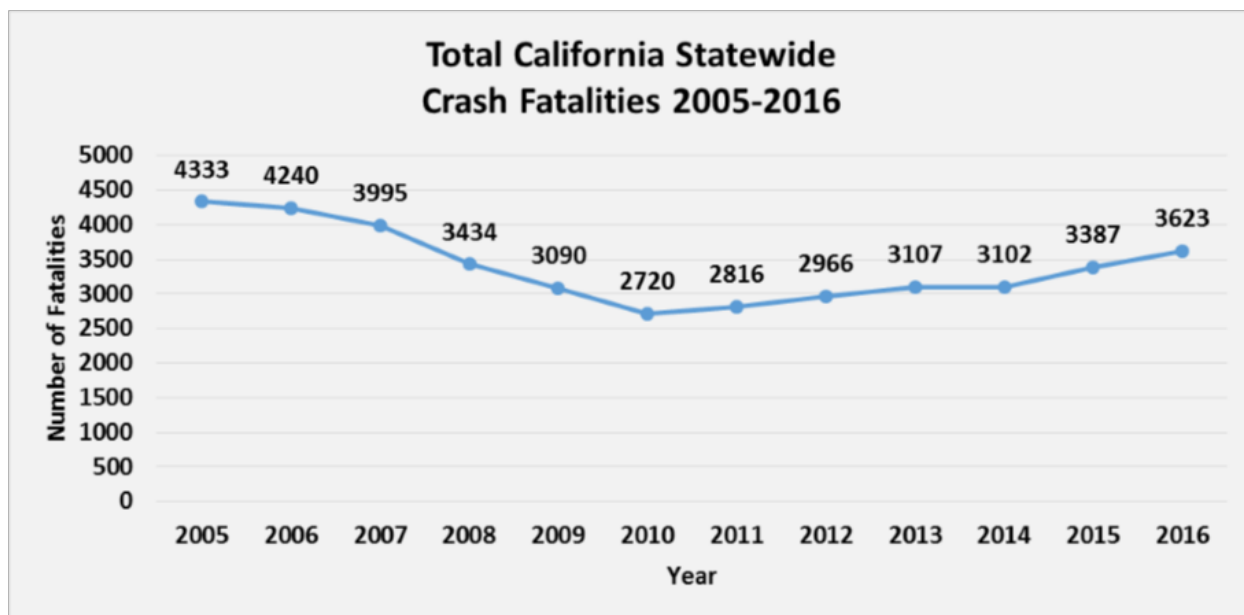
Crash Year	Total Statewide Crash Fatalities	Total Number of Drivers involved in a Fatal Crash	Drivers Testing Positive for ANY Drugs, Involved in a Fatal Crash* (Percentage)	Drivers Testing Positive for Marijuana, Involved in a Fatal Crash* (Percentage)	Fatalities Caused by a Driver Testing Positive for Marijuana
2005	4333	2310	527 (22.8%)	208 (9.0%)	273
2006	4240	2335	517 (22.1%)	244 (10.4%)	318
2007	3995	2243	510 (22.7%)	246 (11.0%)	303
2008	3434	2243	450 (20.1%)	234 (10.4%)	290
2009	3090	1682	409 (24.3%)	196 (11.7%)	222
2010	2720	1459	388 (26.6%)	192 (13.2%)	214
2011	2816	1401	368 (26.3%)	212 (15.1%)	242
2012	2966	2804	682 (24.3%)	266 (9.5%)	302
2013	3107	1606	519 (32.3%)	272 (16.9%)	341
2014	3102	1662	512 (30.1%)	252 (15.7%)	281
2015	3387	1799	647 (36.0%)	318 (17.7%)	366
2016	3623	2064	767 (37.2%)	**	**

***Does not include Blood Alcohol Content (BAC) tests.**

****FARS 2016 Provisional Data was not collected as of the creation of this report.**

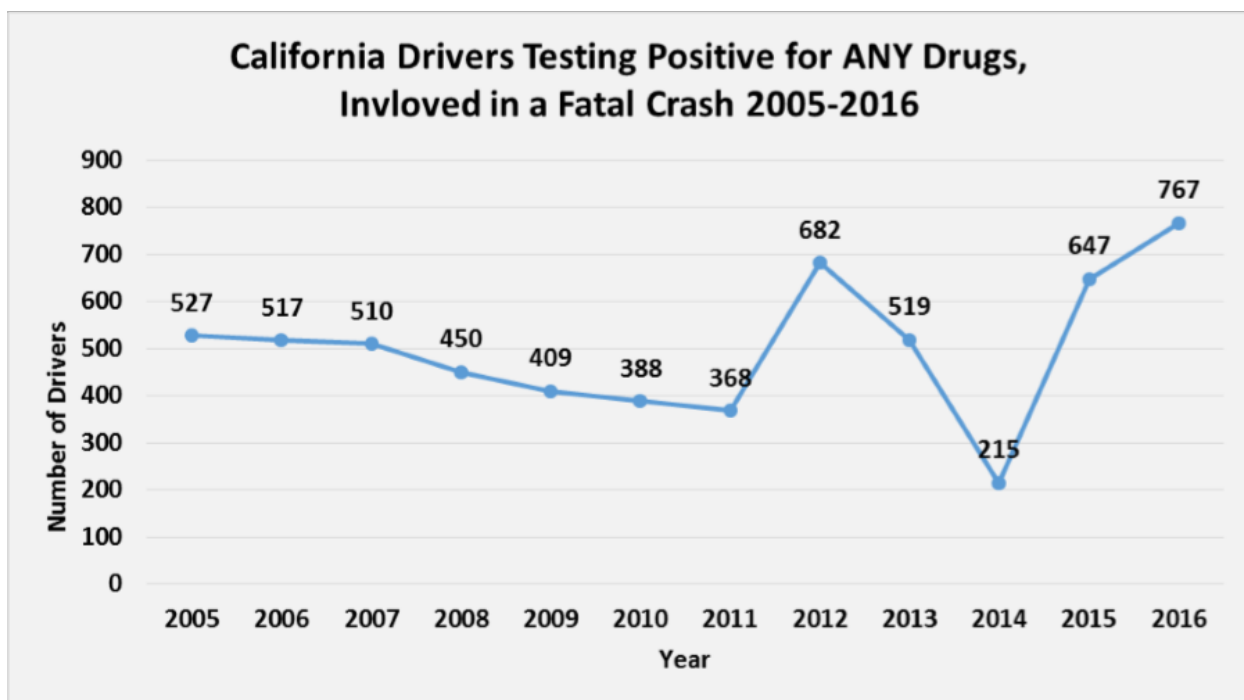
Source: Fatality Analysis Reporting System (FARS 2005-2016), California

- ❖ This report cites datasets with terms such as marijuana-related or tested positive for marijuana. This does not infer that marijuana impairment was the cause of the incident.
- ❖ California has made a number of concerted efforts to reduce the number of crash fatalities throughout the state, however the number of driver(s) involved in crash fatalities who tested positive for marijuana has continued to trend upward from 2005-2015.

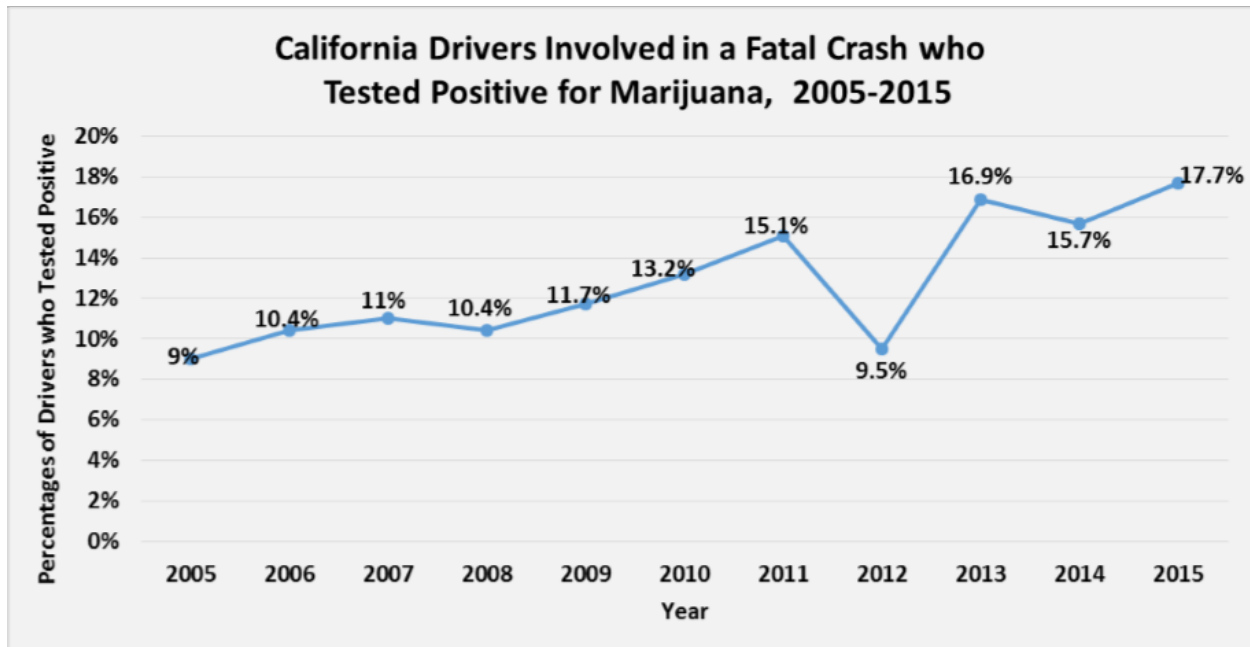


Source: Fatalities Analysis Reporting System (FARS) 2005-2016, National Highway Traffic Safety Administration (NHTSA) , 2018

- ❖ Crash fatalities decreased from 2005-2010 but rose again from 2011-2016.
- ❖ Crash data for 2017 was not available for this report.



Source: Fatalities Analysis Reporting System (FARS) 2005-2016, National Highway Traffic Safety Administration (NHTSA) , 2018



Source: Fatalities Analysis Reporting System (FARS) 2005-2016, National Highway Traffic Safety Administration (NHTSA) , 2018

Note: FARS 2016 Provisional Data was not collected as of the creation of this report .

- ❖ Data from FARS shows an upward trend in statewide auto fatalities starting in 2010 in California, as well as the number of marijuana-related auto fatalities.

SECTION SIX: Public Health

Some Findings

- From 2005-2016 there was a 380% increase in California emergency department visits and hospitalizations for any related marijuana abuse (primary or secondary diagnosis), with a 156% increase from 2009-2016.
- From 2005-2016 there was a 633% increase in California emergency department visits and hospitalizations for primary marijuana abuse, with a 410% increase from 2009-2016.
- From 2005-2016 there was a 603% increase in California emergency department visits with marijuana as the primary reason for being seen.
- Marijuana-related exposure calls in California from 2005-2017 increased by:
 1. Among children 0 to 5 years of age, 1613%
 2. Among youth 6 to 19 years of age, 273%
 3. Among adults 20 years of age and older, 482%

Definitions:

Hospital Stay/Hospitalization: Admission to a hospital for treatment.

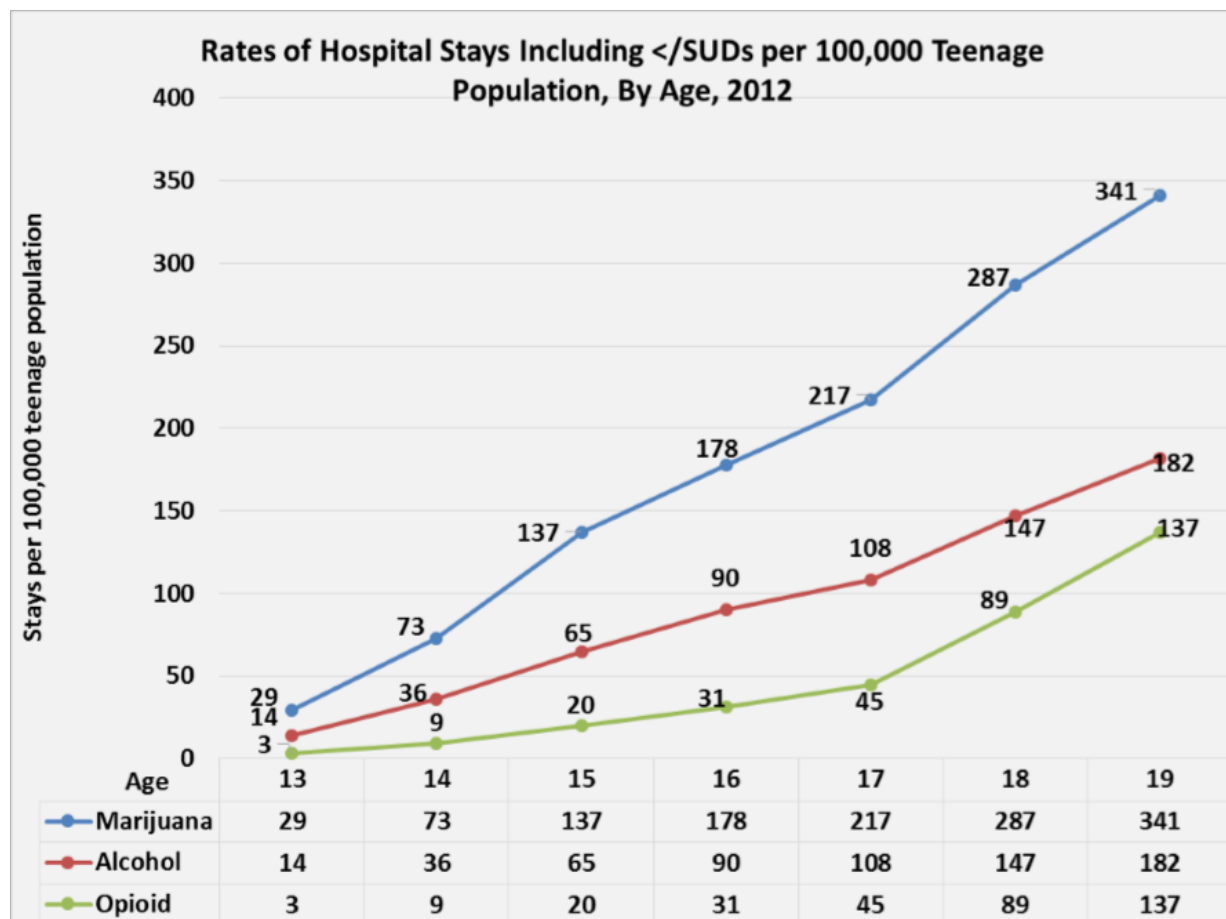
Emergency Department: The department of a hospital responsible for the provision of medical and surgical care to patients arriving at the hospital in need of immediate care.

The International Classification of Diseases (ICD): is a system used by physicians and other healthcare providers to classify and code all diagnoses, symptoms and procedures recorded in conjunction with hospital care in the United States.

Office of Statewide Health Planning and Development (OSHPD): California's Office of Statewide Health Planning and Development collects and disseminates information about California's healthcare infrastructure.

California Poison Control System: Provides immediate, free and expert treatment advice and referral over the telephone in case of exposure to poisonous or toxic substances.

Commercialization: The process of managing or running something principally for financial gain.

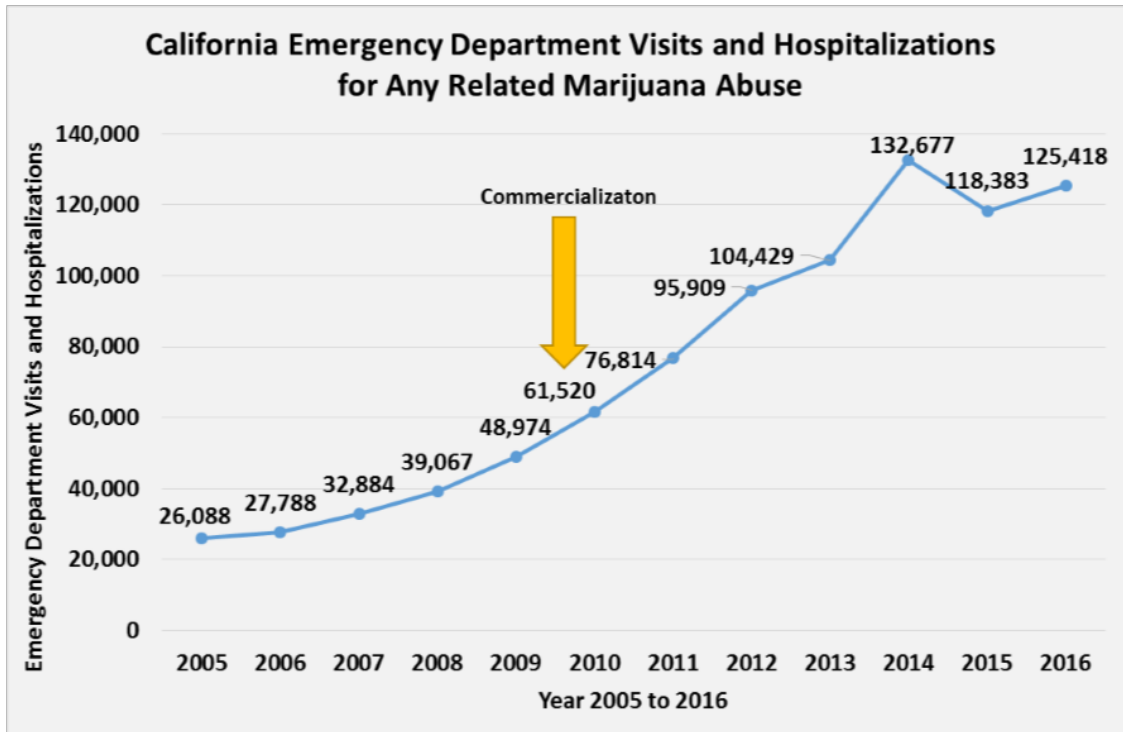


Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization and Markets, Healthcare Cost and Utilization Project (HCUP), Kids' Inpatient Database (KID), 2012

Note: MD and SUD diagnoses are based on any principal or secondary (all-listed) diagnosis or external cause of injury or poisoning. Teenagers are defined as ages 13 to 19 years (inclusive).

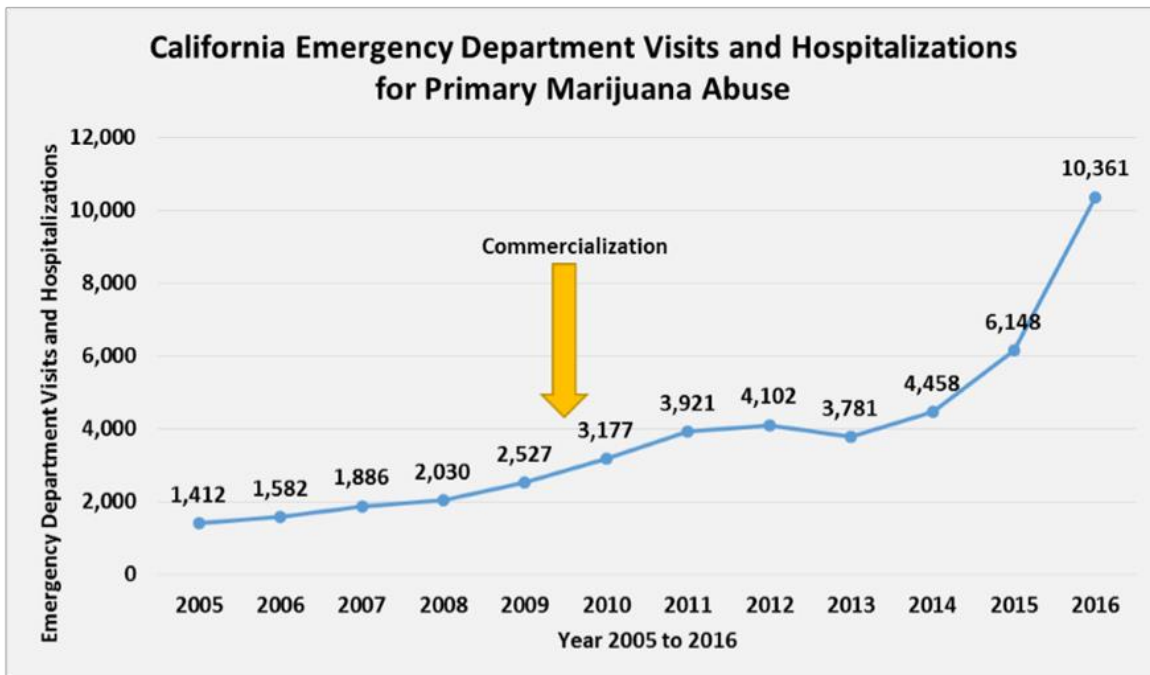
Abbreviations: MD, mental disorder; M/SUD, mental and substance use disorder; SUD, substance use disorder

- ❖ In 2012, cannabis use disorders made up the highest rate of hospital stays per 100,000 teenage population, across all age groups.



Source: Office of Statewide Health Planning and Development (OSHPD), Healthcare Information Division, Health Information Resource Center.

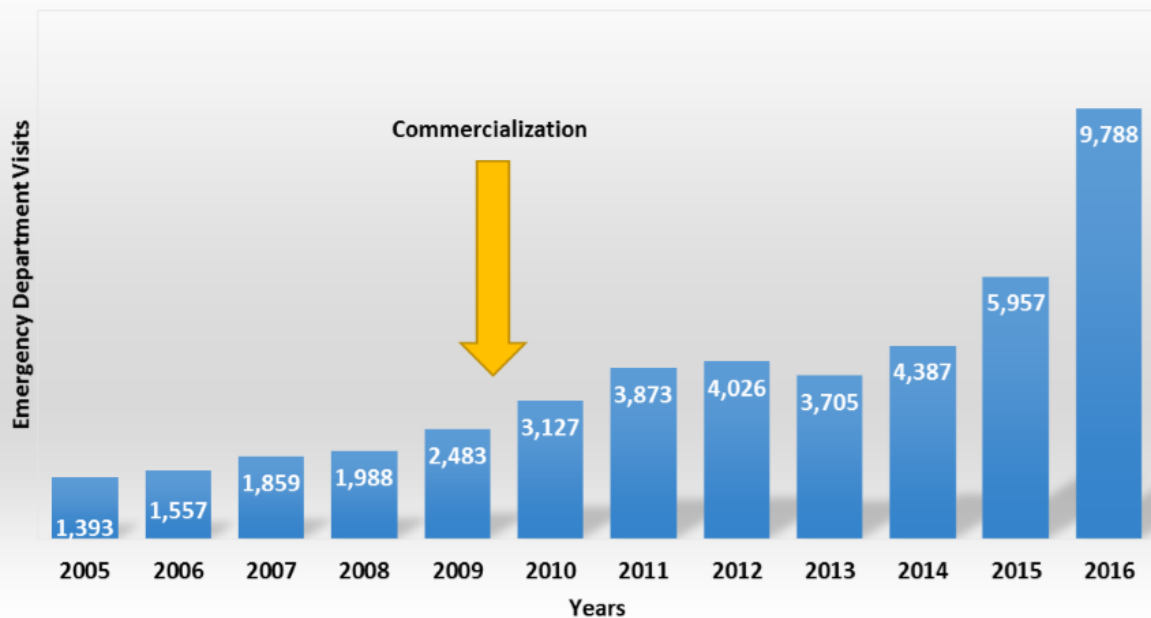
Note: Graph depicts cannabis abuse and dependence with any diagnosis of ICD-9 and ICD-10 codes 304.3, 305.2, F12 and T407.



Source: Office of Statewide Health Planning and Development (OSHPD), Healthcare Information Division, Health Information Resource Center.

Note: Graph depicts cannabis abuse and dependence with any diagnosis of ICD-9 and ICD-10 codes 304.3, 305.2, F12 and T407.

California Marijuana-Related Emergency Department Visits with Primary Diagnosis Only



Source: Office of Statewide Health Planning and Development (OSHPD), Healthcare Information Division, Health Information Resource Center.

Note: Graph depicts cannabis abuse and dependence with primary diagnosis of ICD-9 and ICD-10 codes 304.3, 305.2, F12 and T407.

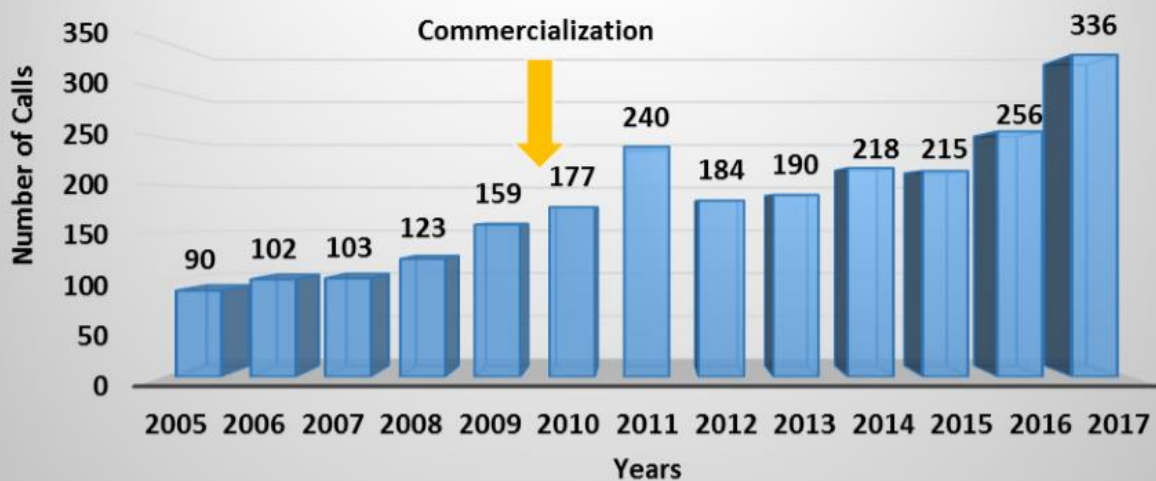
- ❖ Marijuana-related exposure calls refers to calls made to the California Poison Control System for unintentional exposure/over exposure to marijuana or THC concentrate.

California Marijuana-Related Exposure Calls Children Ages 0 to 5



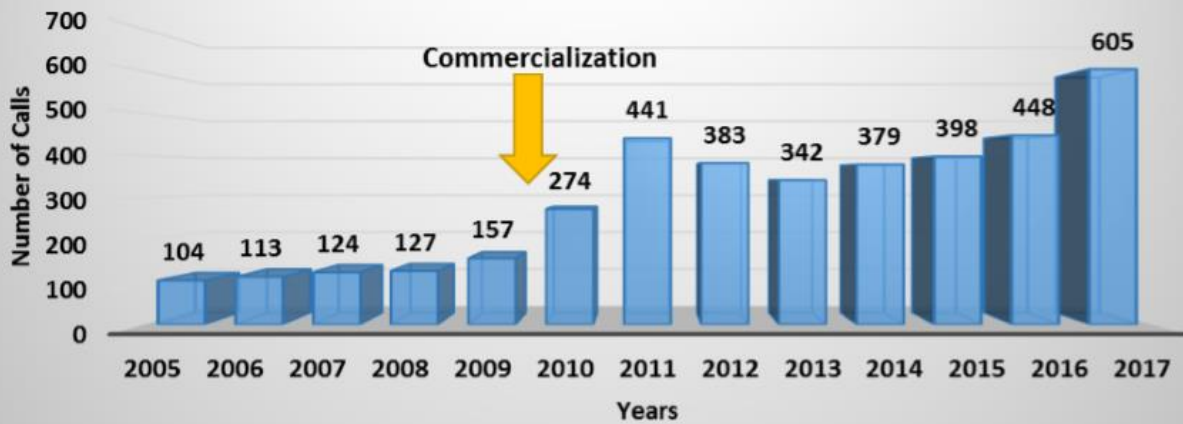
Source: California Poison Control System, San Diego Division

California Marijuana-Related Exposure Calls Children Ages 6 to 19



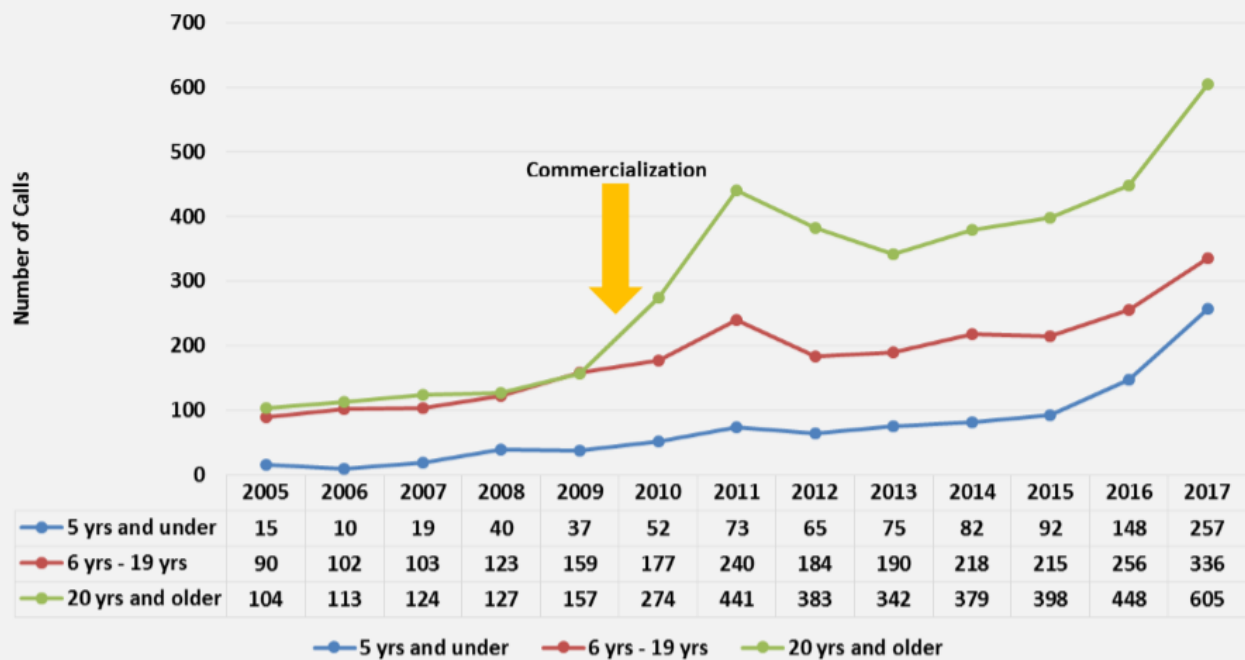
Source: California Poison Control System, San Diego Division

California Marijuana Related Exposure Calls Ages 20 and Older



Source: California Poison Control System, San Diego Division

California Marijuana Related Exposure Calls All Ages, 2005-2017



Source: California Poison Control System, San Diego Division

SECTION SEVEN: Treatment

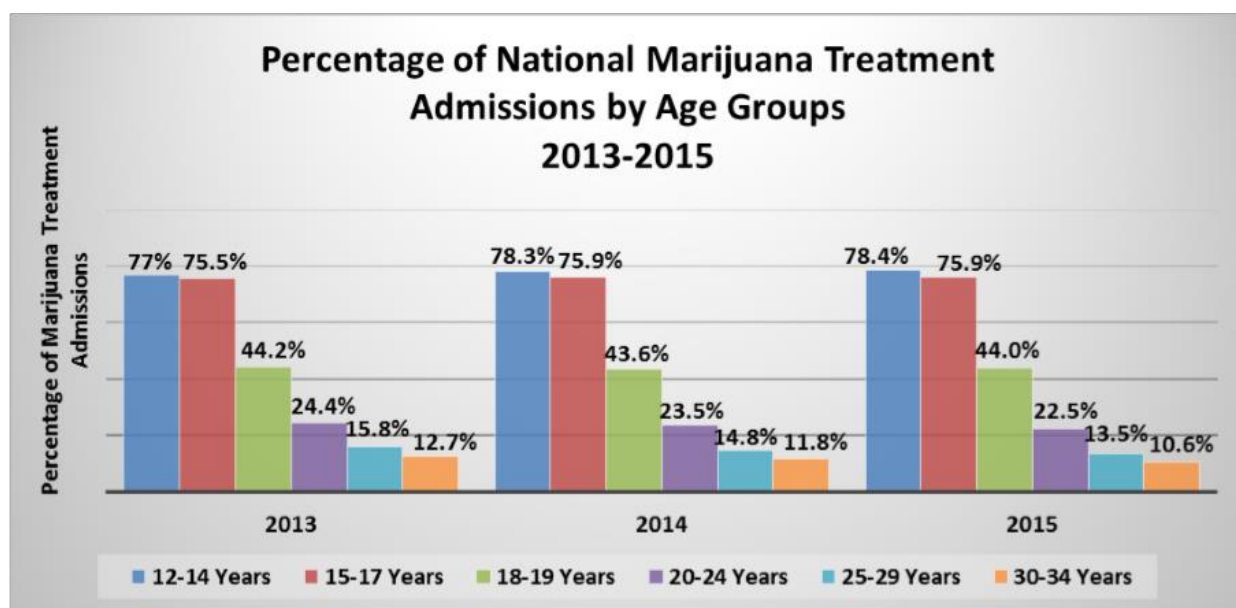
Some Findings

- Youth aged 12-17 years of age continue to make up the largest percentage of individuals seeking treatment for marijuana, both nationally and in the state of California.

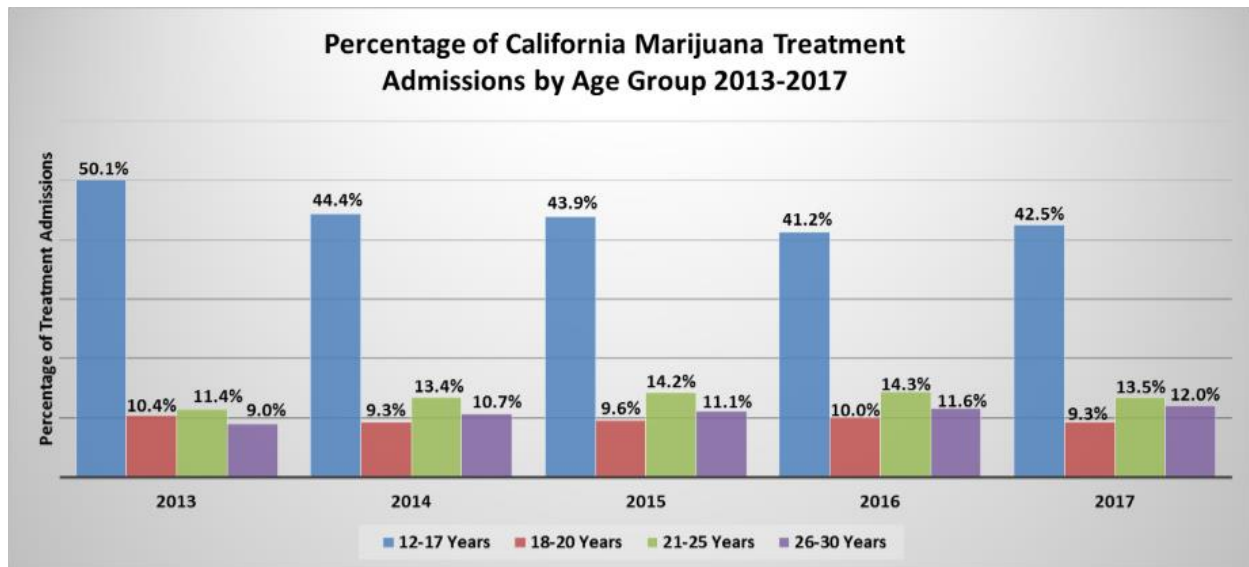
Definitions:

Substance Abuse and Mental Health Services Administration (SAMHSA): A branch of the U.S. Department of Health and Human Services.

Treatment Episode Data Set (TEDS): Compiles client-level data for substance abuse treatment admissions from State Agency data systems. State data systems collect data from facilities about their admissions to treatment and discharges from treatment. TEDS is an admission-based system, but it does not include all admissions.

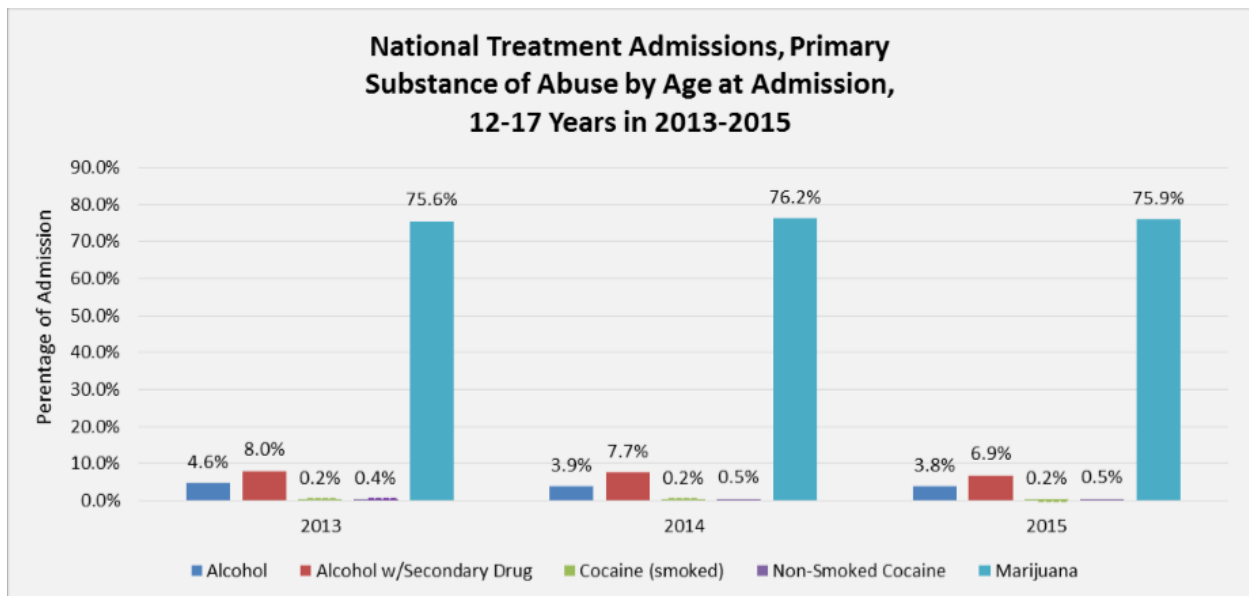


Source: Substance Abuse Treatment Admissions by Primary Substance of Abuse, according to Age Group among admissions aged 12 and older, years 2013, 2014 and 2015.



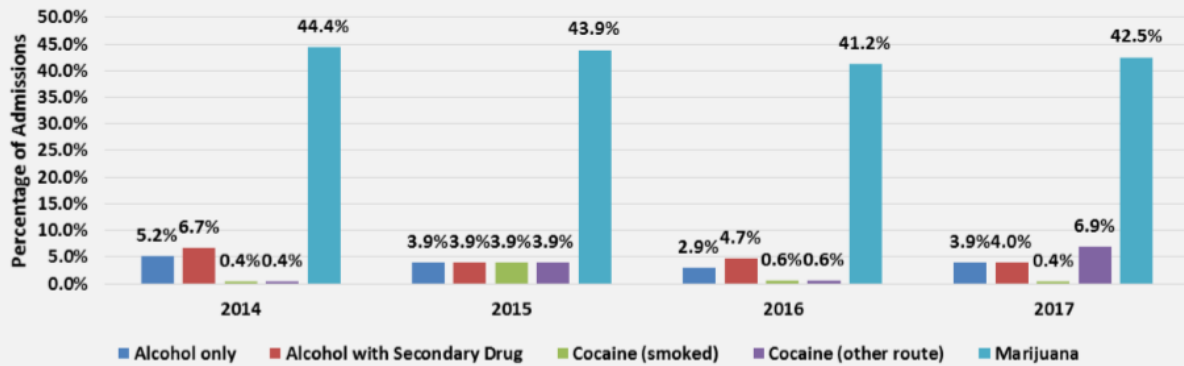
Source: Substance Abuse Treatment Admissions by Primary Substance of Abuse, according to Age Group among admissions aged 12 and older, years 2013, 2014, 2015, 2016 and 2017.

- ❖ The percentage of youth in treatment for a marijuana use disorder is the largest of the age groups seen above. Data recording for marijuana treatment admissions changed in 2013, and age groups were defined differently, but both graphs above show that for the years of 2013 to 2017, the majority of those entering treatment for marijuana abuse were 12 to 20 years of age.



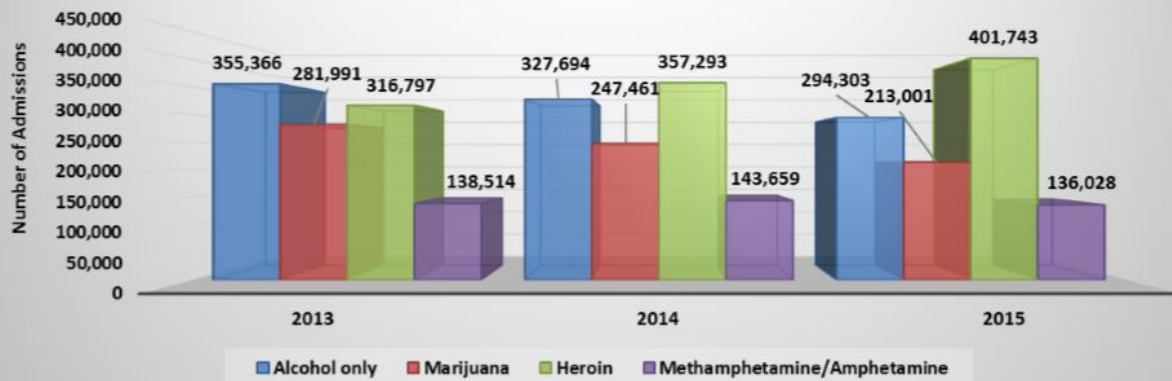
Source: Substance Abuse Treatment Admissions by Primary Substance of Abuse, according to Age Group among admissions ages 12-17 years 2013, 2014 and 2015.

California Treatment Admissions, Primary Substance of Abuse by Age at Admission, 12-17 Years, 2014-2017

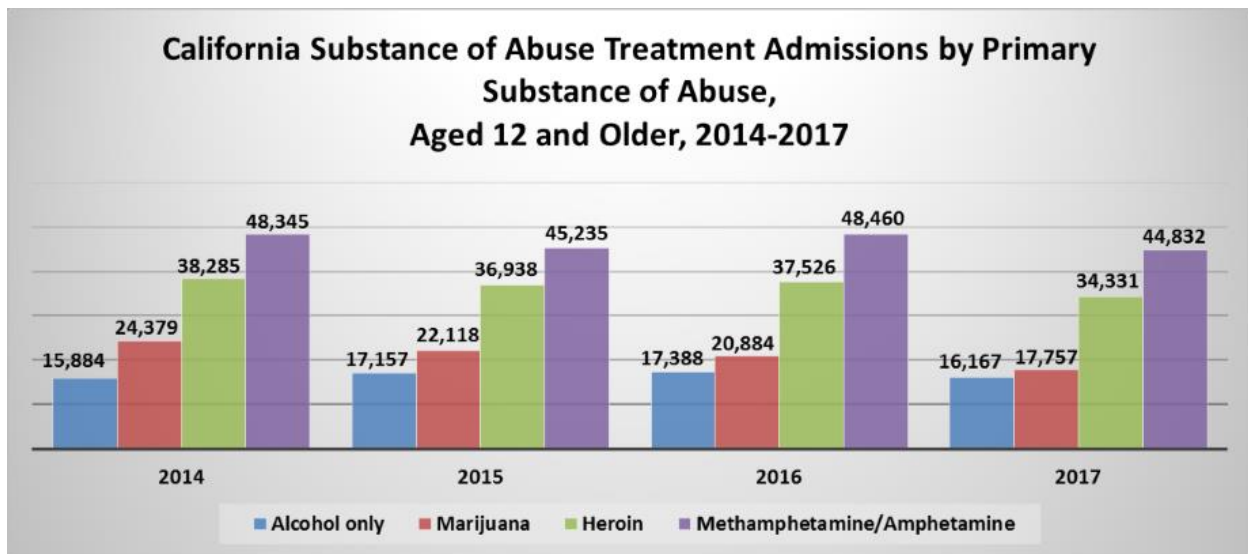


Source: Substance Abuse Treatment Admissions by Primary Substance of Abuse, according to Age Group among admissions by Substance of Abuse, ages 12–17, 2014, 2015, 2016 and 2017

National Substance of Abuse Treatment Admissions by Primary Substance of Abuse, Aged 12 and Older, 2013-2015



Source: Substance Abuse Treatment Admissions by Primary Substance of Abuse, according to Age Group among admissions aged 12 and older, years 2013, 2014 and 2015.



Source: Substance Abuse Treatment Admissions by Primary Substance of Abuse, according to Age Group among admissions aged 12 and older, years 2014, 2015, 2016 and 2017.

- ❖ From 2014-2017, marijuana was the third most common primary substance of abuse for substance abuse treatment for ages 12 and older in California. Methamphetamine/amphetamine was the most common primary substance of abuse and heroin was the second.
- ❖ Looking at the primary substances of abuse at treatment admissions for ages 12 and older in both California and Nationally; nationally, alcohol (only) treatment admissions aged 12 and older have been higher than marijuana, however in California marijuana continues to be higher than alcohol (only).
- ❖ Data in this section was collected from the Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Substance abuse Treatment Admissions by Primary Substance of Abuse, According to Sex, Age Group, Race, and Ethnicity among aged 12 and older. <https://www.dasis.samhsa.gov/webt/quicklink/CA14.htm> (CA15.htm, CA16.htm, CA17.htm)

SECTION EIGHT: Diversion and Eradication

Some Findings

- In 2016, California was the origin of 1,180 of the five Western States' 1,940 marijuana seizures.
- In 2017, 68% of illegal marijuana plant seizures occurred on land owned by the United States Forest Service (USFS).

Definitions:

Western States Information Network (WSIN): The information network for Alaska, Washington, Oregon, California and Hawaii that contributes information to the Regional Information Sharing Systems Program (RISS).

Regional Information Sharing Systems Program (RISS): Assists local, state, federal and tribal criminal justice partners by facilitating information sharing, support criminal investigations and promote officer safety. RISS is comprised of six regional centers.

El Paso Intelligence Center (EPIC): A center offering tactical, operational and strategic intelligence support to federal, state, local, tribal and international law enforcement agencies and provides de-confliction services, leveraging databases from both internal and external stakeholders.

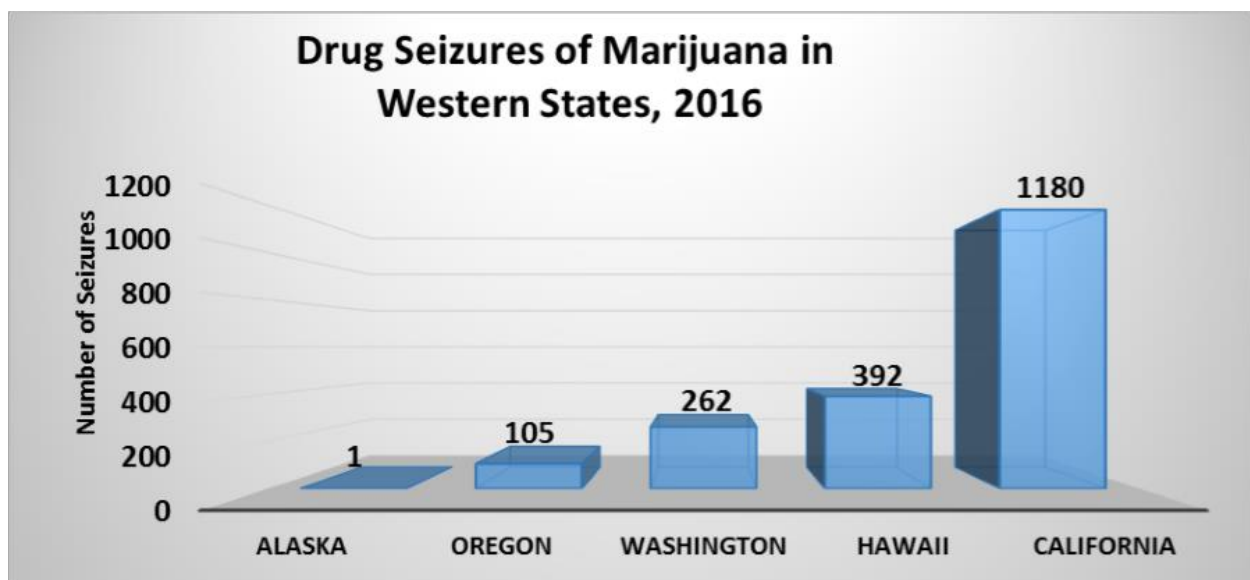
United States Postal Inspection Service (USPIS): Supports and protects the U.S. Postal Service and its employees, infrastructure, and customers, enforce the laws that defend the nation's mail system from illegal or dangerous use.

United States Forest Service (USFS): A multi-faceted agency that manages and protects 154 national forests and 20 grasslands in 43 states and Puerto Rico.

Campaign Against Marijuana Planting (CAMP): Run by the State of California Department of Justice, CAMP is a High Intensity Drug Trafficking Area (HIDTA) supported task force consisting of local, state and federal partners that work to eradicate large scale illegal marijuana cultivations from public and private lands.

High Intensity Drug Trafficking Area (HIDTA): The High Intensity Drug Trafficking Areas (HIDTA) program, created by Congress with the Anti-Drug Abuse Act of 1988, provides assistance to Federal, state, local, and tribal law enforcement agencies operating in areas determined to be critical drug-trafficking regions of the United States.

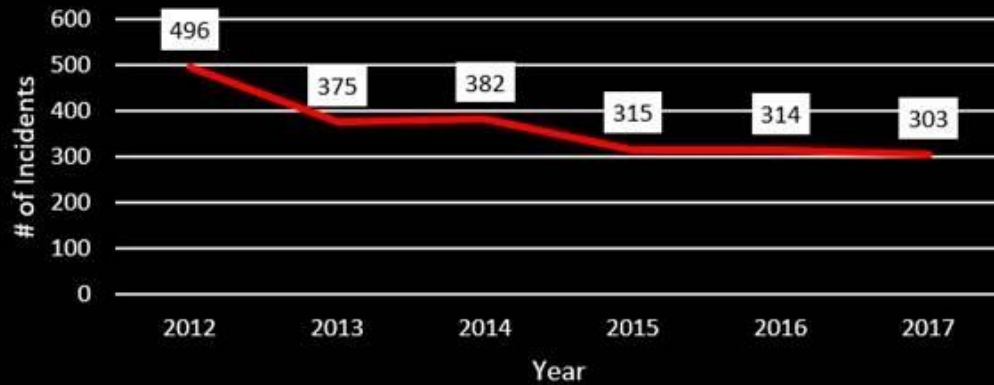
National Seizure System (NSS): A voluntary repository for information on drug, clandestine laboratory, and other contraband seizures such as chemical precursors, currency and weapons.



Source: Western States Information Network (WSIN), El Paso Intelligence Center (EPIC)

- ❖ As of 2018, each state, allows medical and recreational marijuana use, with the exception of Hawaii which only allows medical marijuana use.

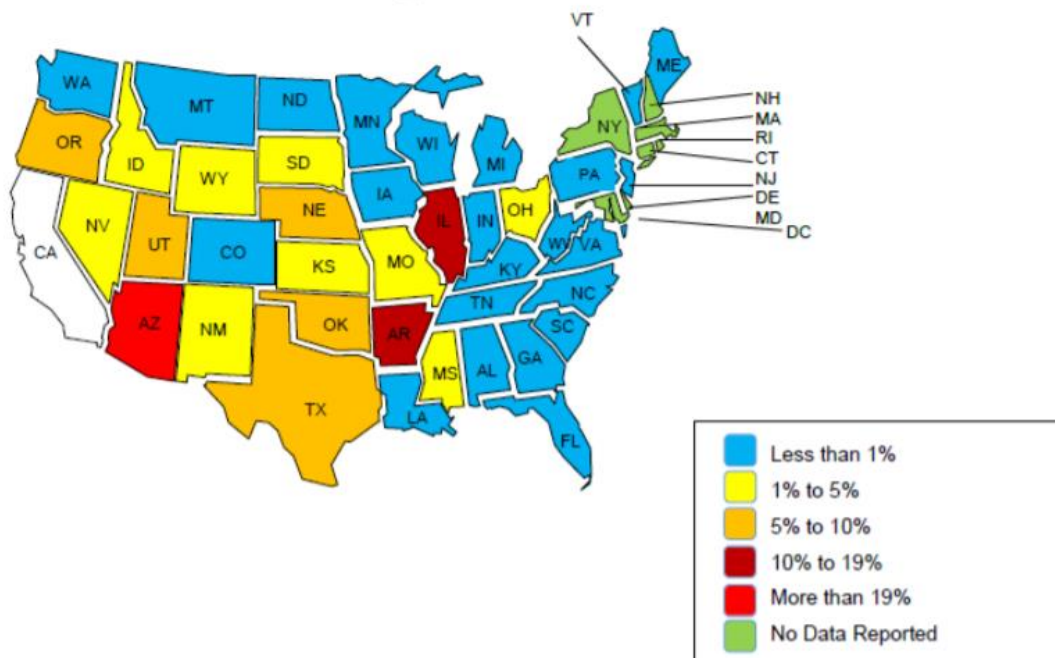
Marijuana Seized During Traffic Stops Outside California, Kilogram or Greater, Origination California



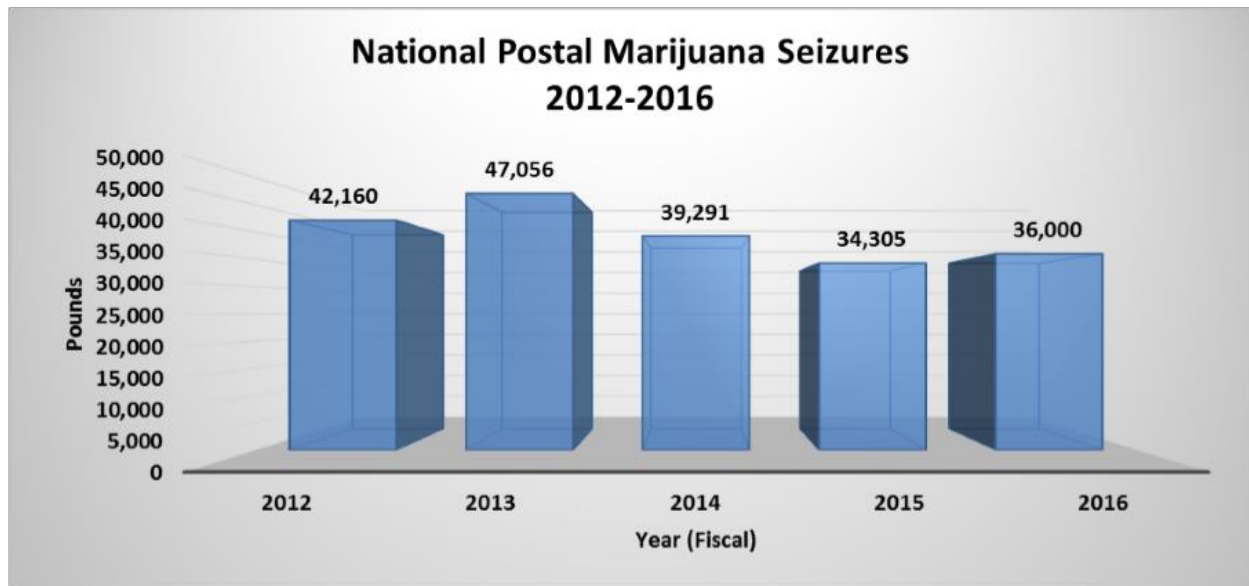
Source: El Paso Intelligence Center (EPIC)

NSS - Marijuana Seizures Originally from California 2012 to 2018

Percentage of Seizures



Source: National Seizure System (NSS) 2018

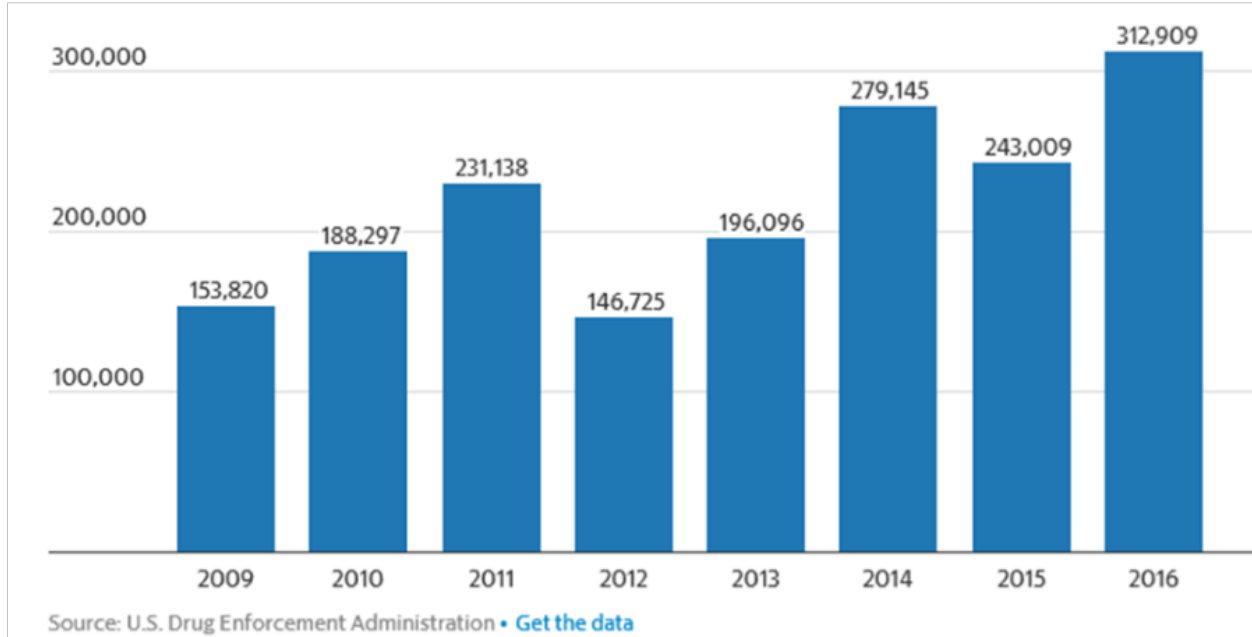


Source: U.S. Postal Inspection Service (USPIS)

Source: The San Diego Union-Tribune, January 8, 2017, by Kristine Davis, Mailing Marijuana is a Popular Way to Distribute the dDrug – but Illegal.

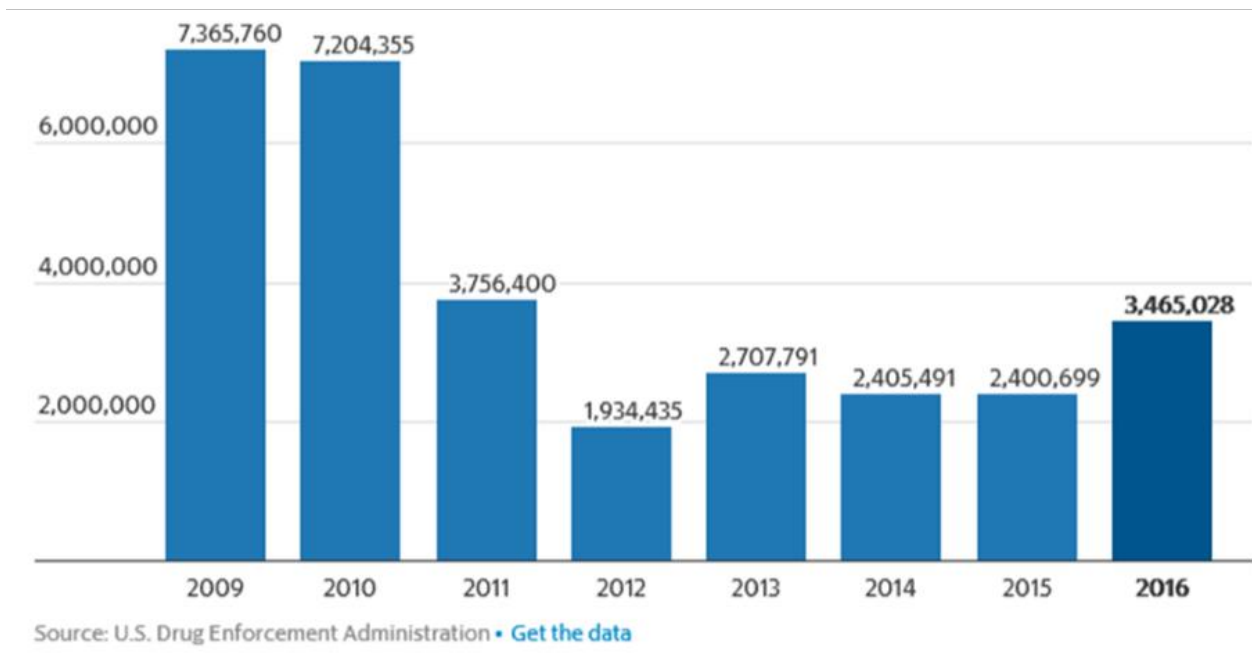
<http://www.sandiegouniontribune.com/news/courts/sd-me-mailing-pot-20170106-story.html>

California Indoor Marijuana Plant Seizures



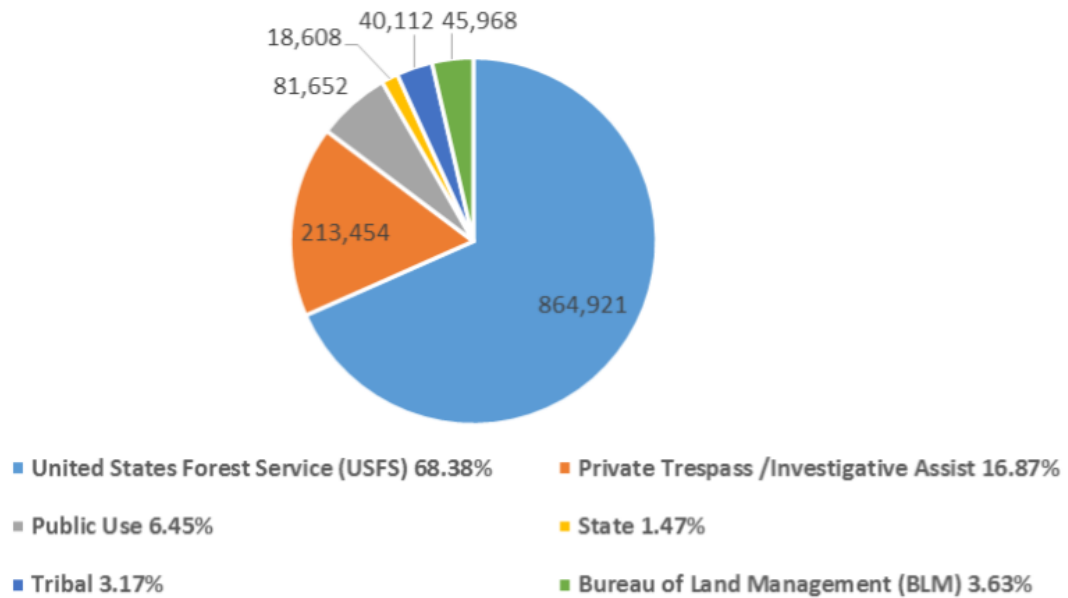
❖ These numbers reflect CAMP seizures.

California Outdoor Marijuana Plant Seizures



❖ These numbers reflect CAMP seizures.

2017 CAMP Plant Seizures By Land Owner

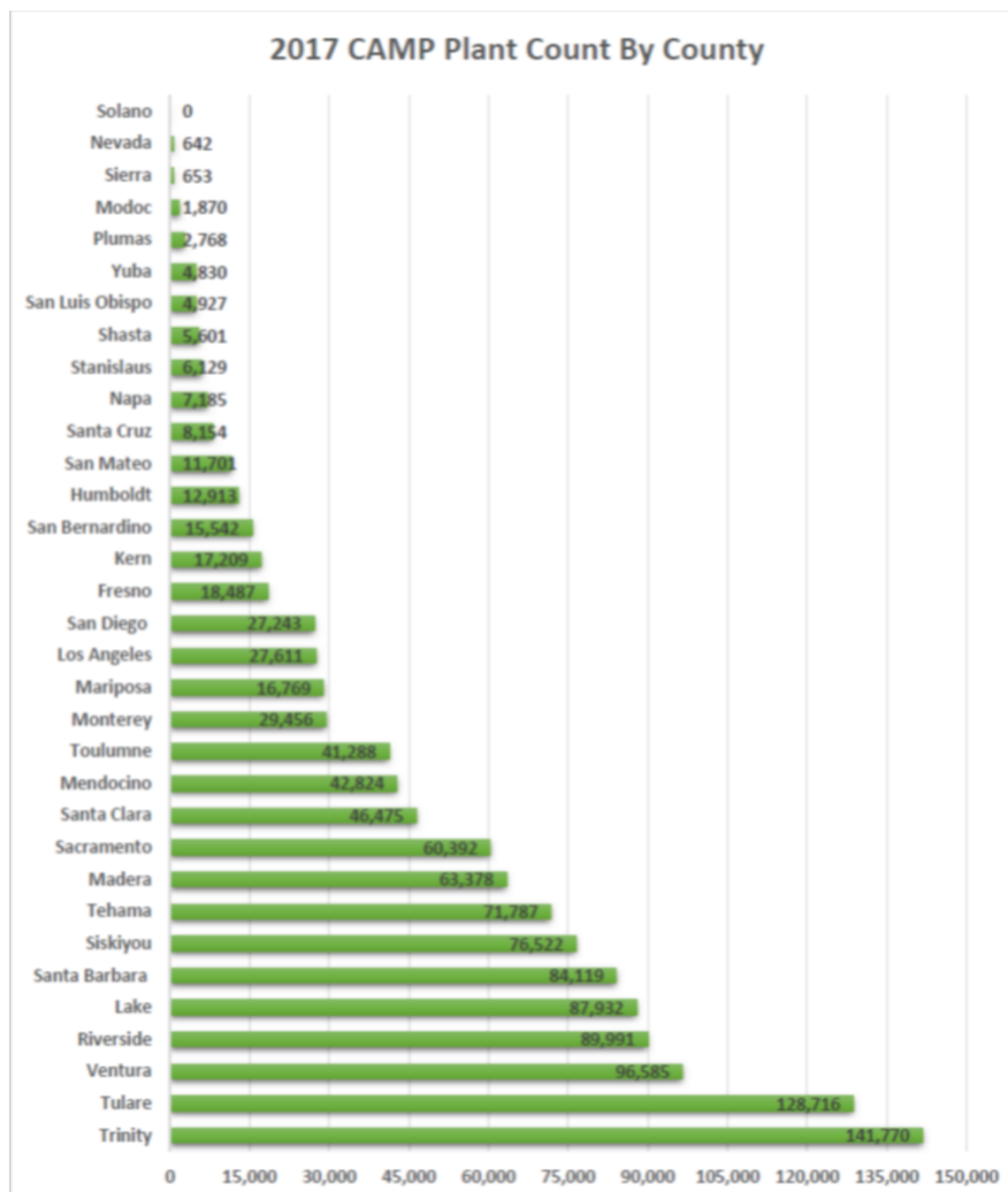


Source: California Department of Justice Bureau of Investigation, Campaign Against Marijuana Planting (CAMP), 2017 Annual Report

PROCESSED MARIJUANA SEIZED

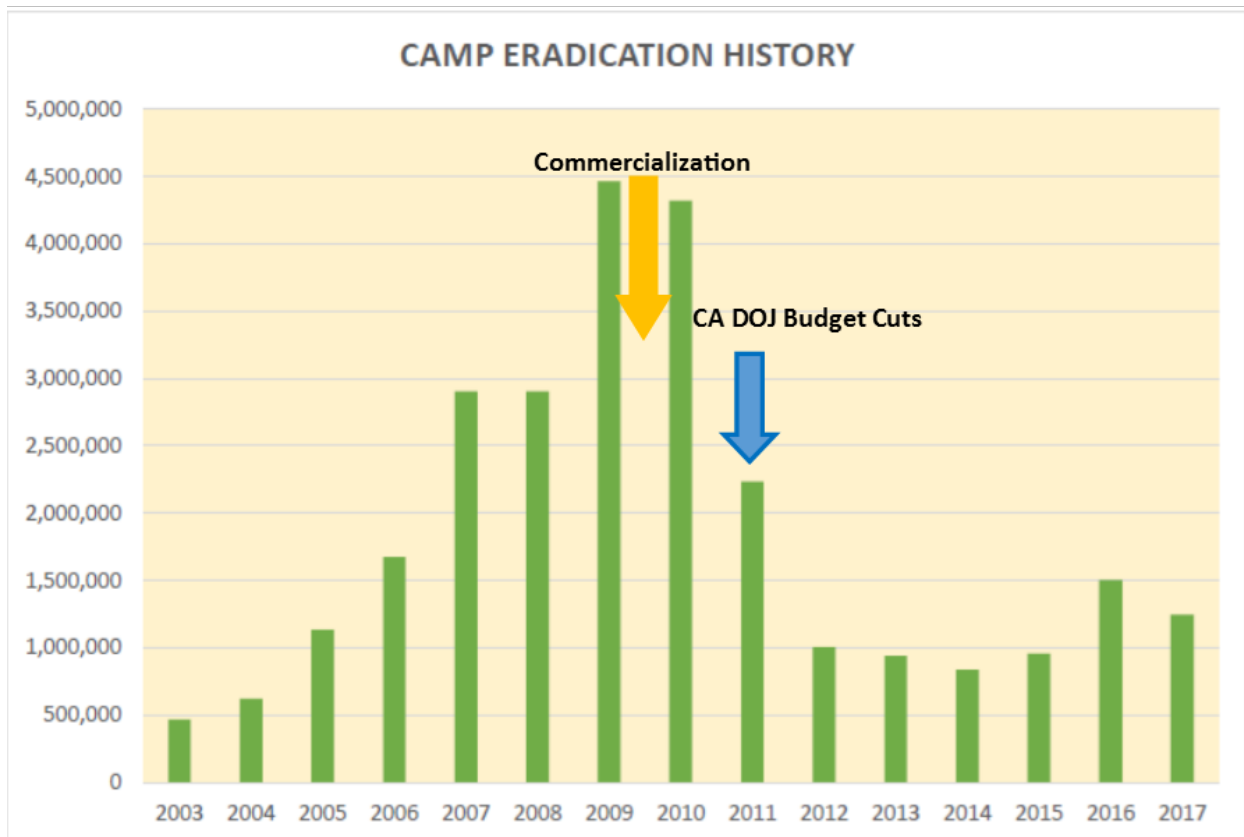
2017	8,696 LBS
2016	6,811 LBS
2015	10,688 LBS
2014	9,704 LBS
2013	6,500 LBS
2012	3,798 LBS
2011	5,042 LBS

Source: California Department of Justice Bureau of Investigation, Campaign Against Marijuana Planting (CAMP), 2017 Annual Report



Source: California Department of Justice Bureau of Investigation, Campaign Against Marijuana Planting (CAMP), 2017 Annual Report

- ❖ Trinity County had the highest number of illegal marijuana plant seizures with 141,770.



2003	466,054	2011	2,234,152
2004	621,315	2012	1,004,461
2005	1,134,692	2013	939,722
2006	1,675,681	2014	836,596
2007	2,905,021	2015	956,898
2008	2,905,232	2016	1,505,371
2009	4,463,917	2017	1,264,715
2010	4,320,314		

Source: California Department of Justice Bureau of Investigation, Campaign Against Marijuana Planting (CAMP), 2017 Annual Report

- ❖ There was a spike in seizures during the 2009 and 2010 CAMP seasons which coincided in the commercialization of marijuana.
- ❖ In 2011, the California Department of Justice endured budget cuts resulting in the elimination of the Bureau of Narcotic Enforcement (BNE), directly impacting the CAMP operations.

SECTION NINE: THC Extraction Labs

Some Findings

- In 2015 and 2016 there were more Honey Oil/THC extraction labs found in California than Meth/Ice (Methamphetamine) conversion labs.
- In 2016, 79% of THC extraction lab seizures nationally reported were found in California.
- In 2016, THC extraction labs made up 78.4% of all labs seized in California.

Definitions:

Clandestine “Clan” Lab: A place where preparation of illegal substances takes place. These ‘labs’ are used to manufacture drugs, explosives and even biological or chemical weapons.

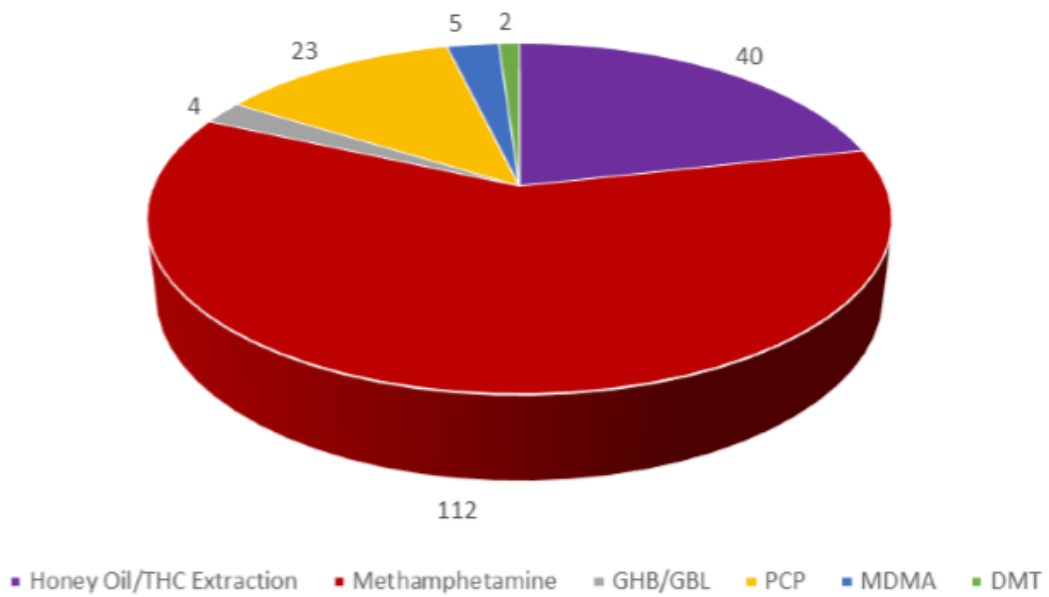
Western States Information Network (WSIN): The information network for Alaska, Washington, Oregon, California and Hawaii that contributes information to the Regional Information Sharing Systems Program (RISS).

Regional Information Sharing Systems Program (RISS): Assists local, state, federal and tribal criminal justice partners by facilitating information sharing, support criminal investigations and promote officer safety. RISS is comprised of six regional centers.

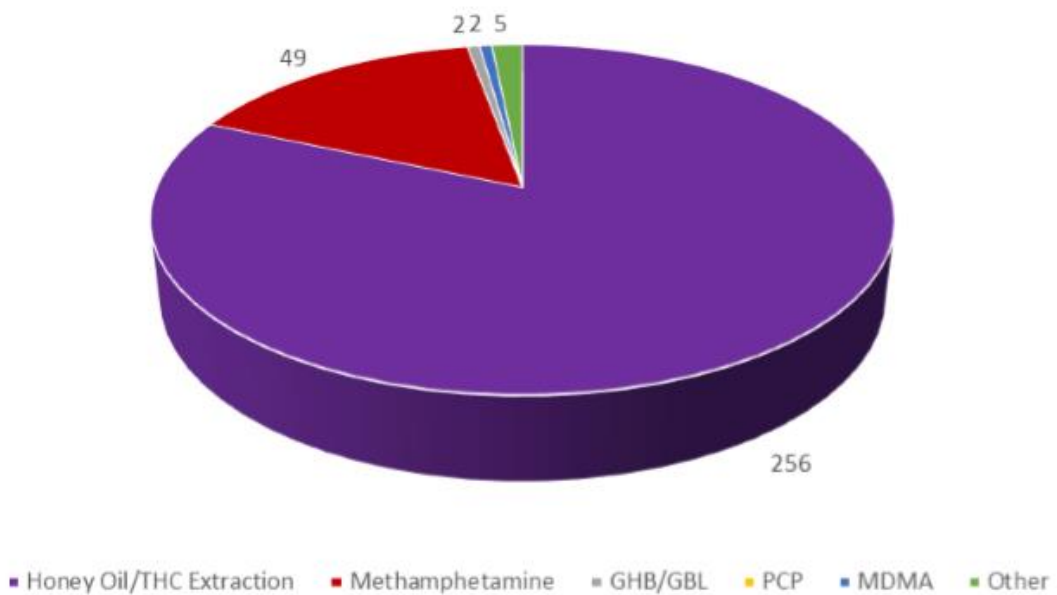
El Paso Intelligence Center (EPIC): A center offering tactical, operational and strategic intelligence support to federal, state, local, tribal and international law enforcement agencies and provides de-confliction services, leveraging databases from both internal and external stakeholders.

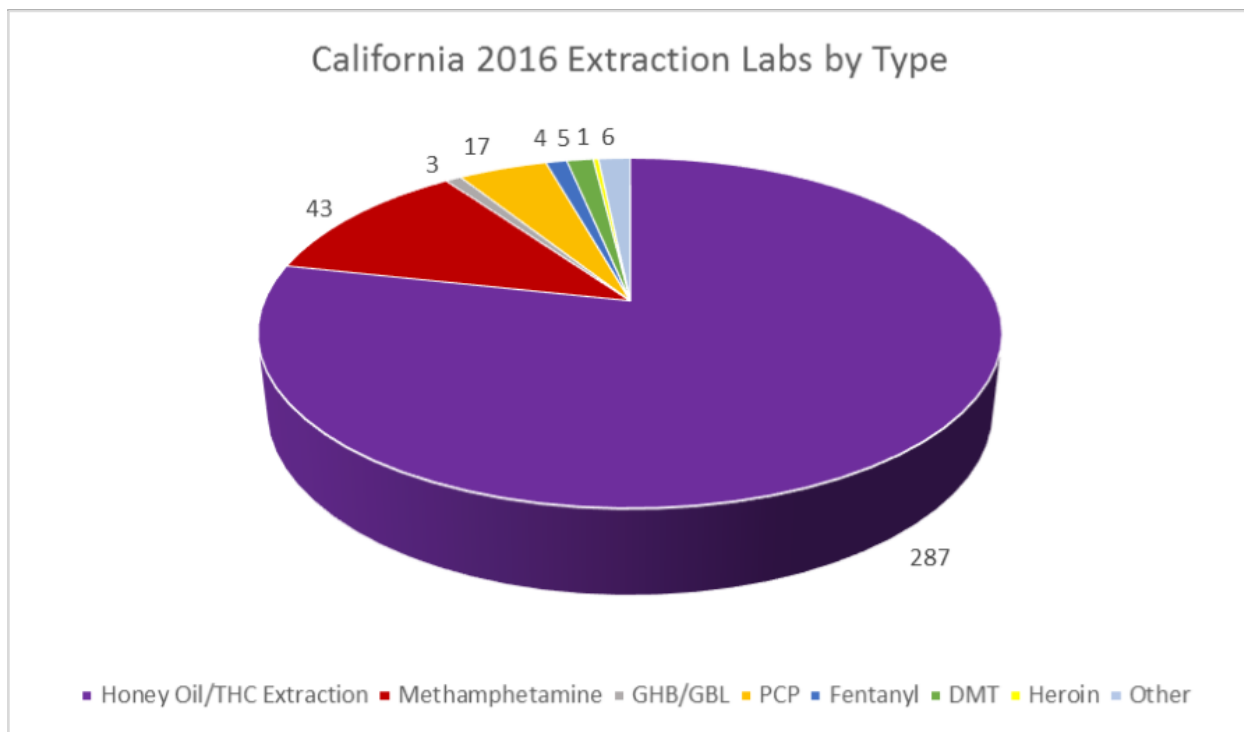
Los Angeles Regional Criminal Information Clearinghouse (LA CLEAR): Provides strategic investigative research and post seizure analysis; tactical case support analysis; electronic surveillance and operational support; as well as training and conference opportunities to more than 230 agencies in the Los Angeles High Intensity Drug Trafficking Area (LA HIDTA).

California 2014 Extraction Labs by Type



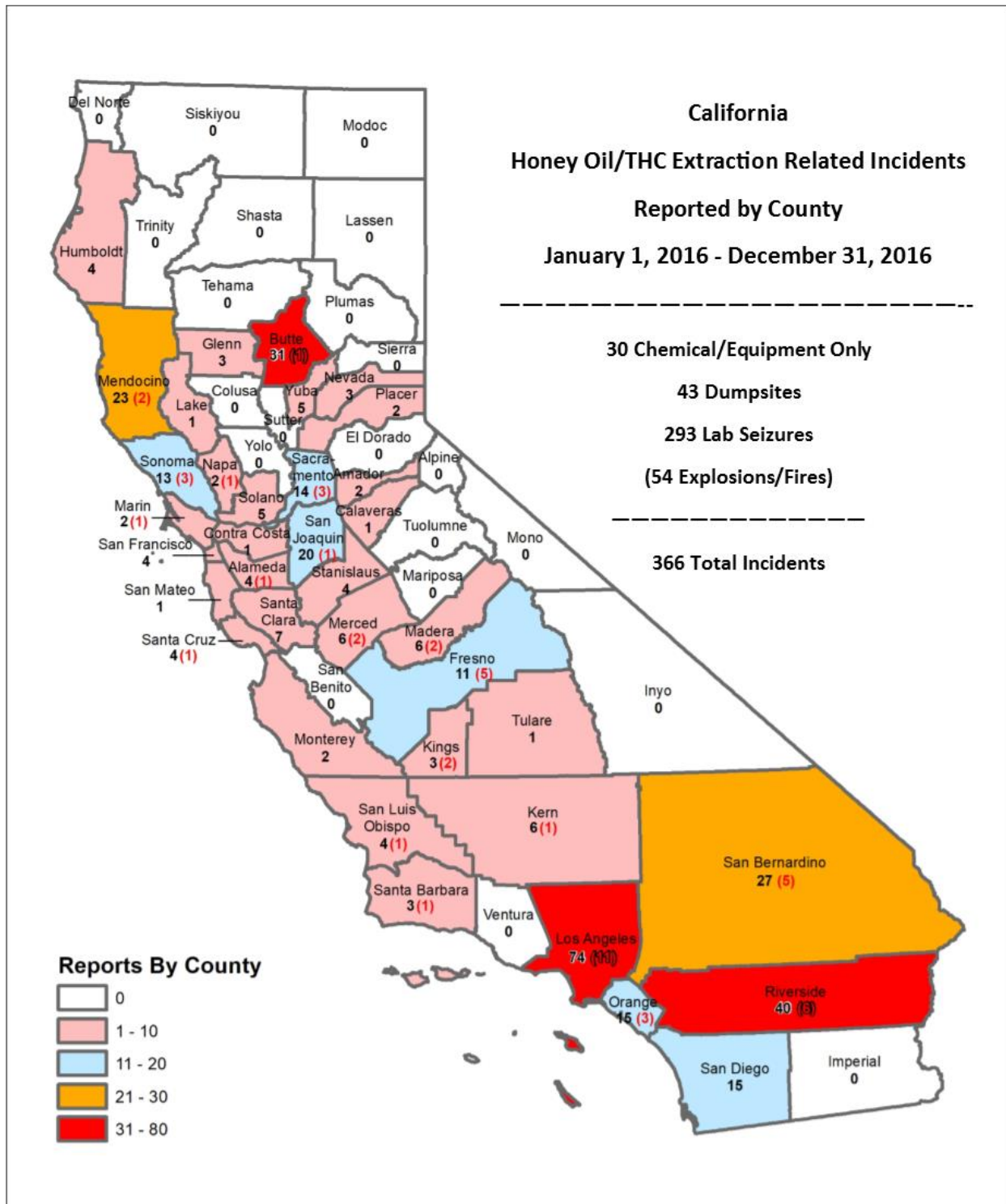
California 2015 Extraction Labs by Type





Source: Western States Information Network (WSIN), El Paso Intelligence Center (EPIC) and Los Angeles Clearing House (LA CLEAR)

- ❖ The charts above depict the total number of drug lab seizures in California in 2014, 2015 and 2016.



Source: Western States Information Network (WSIN), 2016 Year-End Clan Lab Report

- ❖ Areas where marijuana is commonly grown or with high concentrations of dispensaries, show higher numbers of lab incidents.

- ❖ In 2016, California reported 54 fires and explosions related to THC extraction labs. Currently the most common method of extraction involves the use of butane, an odorless, colorless gas that is heavier than air and is highly flammable.
- ❖ THC extraction labs are extremely unstable due to the various solvents used in the extraction process. Often times the chemicals leak from the equipment causing a pooling of gasses that can lead to catastrophic explosions.

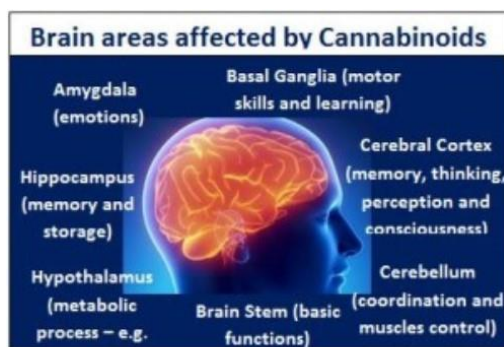
Appendix A: More on Marijuana, CBD and Hemp

Marijuana and Addiction

As with cigarettes, not everyone who smokes or ingests marijuana will become addicted, but with an increasing number of users and rising THC contents, there will be more people addicted to marijuana in the future. In 2016, 4 million users ages 12 or older had a marijuana use disorder, the clinical name for what is commonly referred to as addiction; 2.3 million, or 58%, of that 4 million people who are addicted to marijuana were 12-25 years of age.¹

Studies have shown that the brain is not fully developed until 25 years of age. Marijuana is the most commonly consumed drug among this age group and may lead to long-term impairment in specific components of learning, memory, emotional reactivity, anxiety and depression.²

Though not all marijuana users will become addicted, regular use and, to an even greater extent, early onset of use during childhood or adolescence, greatly increases the chances of becoming addicted. Children and teenagers face the biggest risk of long-term consequences from marijuana use due in part to increasing THC levels.³ Dr. Staci Gruber, a physician at Harvard's McLean Hospital, conducted a study on the harmful effects of marijuana, and found that regular marijuana use hinders frontal executive brain function—the ability to perform tasks that require complex thinking. The study also showed that the brains of marijuana smokers needed to work much harder to keep up with the brains of non-marijuana smokers.⁴ Because adolescent brains are not fully developed, they are much more likely to experience these negative side effects than adult users.⁵



Increase in Marijuana Use and Loss of Memory: The 'Blunt' Truth.
Penn State University, Fall 2015

Marijuana dependence can be described as a compulsive use of the drug (or repeated use) despite negative consequences.

- A 1994 study showed that adults who smoke marijuana have a 9% chance of becoming addicted. The number increases to 25-50% of those who smoke regularly.⁶
- A 2009 study showed teens and young adults (up to 25 years of age), have a 17% chance of becoming marijuana dependent (the clinical terminology for addiction).⁷

There are indicators that marijuana addiction is increasingly common. Rehabilitation facilities are reporting higher numbers of marijuana addicts seeking treatment. In 2016 in California, over 41% of adolescents aged 12 to 17 admitted in to a drug treatment facility had a marijuana addiction.⁸

The National Survey on Drug Use and Health estimated that of the 24 million people nationally who used marijuana in the past 30 days, 4 million people 12 years and older met the criteria for marijuana dependence in 2016. Also in 2016, 23% of 12th graders reported using marijuana in the past month.⁹

Marijuana's Effects on the Body and Mind

Marijuana has a wide array of impacts on the body, the extents of which are not yet fully understood.

Lung Health

The American Lung Association states, "We caution the public against smoking marijuana because of the risks it poses to lung health."¹⁰

Marijuana smoke is an irritant to the lungs that can cause, among other things, excess phlegm production, chronic bronchitis, and shortness of breath.¹¹ In fact, about 20% of regular marijuana smokers suffer from these symptoms. Smoking marijuana irritates the lining of the respiratory tract and causes damage to the cell linings and bronchial passages.¹²

Marijuana may even present a greater lung health risk than tobacco because marijuana smokers experience a greater exposure-per-breath to tar than that of tobacco smokers due to deeper and longer periods of inhalation.¹³ Determining direct causal relationships between marijuana and lung problems, however, is compounded by the fact that many marijuana users also use tobacco.

Marijuana Use During Pregnancy

Marijuana use during pregnancy is linked to negative outcomes such as low birth weight, developmental delay, and behavioral problems. Some of these problems may persist throughout the child's development. Pre-natal exposure to marijuana is associated with behavioral problems by the age of 10, and the risk of marijuana use by the age of 14.¹⁴

Marijuana and Mental Health

The effects of marijuana on the brain have been studied more than any other part of the body. As with addiction, marijuana use does not necessarily cause mental-health issues, but mental health issues among users have been frequently documented, especially among those using higher-potency marijuana. Many people use, or advocate use of, marijuana to mediate other mental health issues. Anxiety and paranoia are the most common complaints. Evidence suggests that generalized anxiety can worsen when the effects of marijuana wear off, and panic attacks are a common side effect of high doses of THC.¹⁵

Studies have also found that there are rare but marked associations between the use of marijuana and the development of depression and schizophrenia. Marijuana can bring about an acute psychotic state in a healthy person and can worsen the psychotic symptoms of people who are already experiencing degrees of psychosis. However, determining causality can be difficult because it is hard to tell whether marijuana use contributes to mental health problems, or whether people who already have mental health problems use marijuana in an attempt to reduce symptoms.¹⁶

Marijuana Affects Memory and Cognitive Skills

Long-term marijuana use can affect cognitive skills, resulting in short-term memory problems, lack of attention, impaired thinking, loss of balance and coordination, difficulty concentrating, changes in sensory perceptions, impaired ability to perform complex tasks, decreased alertness, and decreased reaction times. These adverse effects become more pronounced in adolescents who use marijuana because their brains are still developing, and making learning and sound decision-making more difficult. In adults, these adverse effects can cause more accidents at work; users are more likely to leave work without permission, spend work time on personal matters, or simply daydream.¹⁷

Research has shown that marijuana's negative effects on attention, memory, and learning can last for days or weeks after the acute effects of the drug wear off. Consequently,

someone who smokes marijuana daily may be functioning at a reduced intellectual level most or all of the time.¹⁸

Marijuana and Learning

Evidence suggests that, compared with their nonsmoking peers, students who smoke marijuana tend to get lower grades and are more likely to drop out of school. A survey showed that 36% of American teens report receiving average grades of mostly B's or lower. The teens with lower grades were more than three times as likely to have used marijuana as the non-smokers.¹⁹

A recent long-term study found that teens and young adults (14 to 25) who continuously use marijuana had cognitive and memory problems and an average IQ loss of 8 to 10 points. The study further found that stopping marijuana use did not fully restore these abilities. Marijuana use is not only associated with poor school performance, but also increased absence from school and increased risk of dropping out without graduating.²⁰

Medicinal Marijuana

Despite these serious risks of marijuana use, some of the compounds that occur in marijuana do show potential medical benefits, such as the treatment of "chronic pain, neuropathic pain, and spasticity associated with multiple sclerosis".²¹ Questions abound in the debate on whether people should be able to access marijuana more readily. This report is intended to be neutral and present the data on the most pressing impacts that increased access to marijuana may have.

What is CBD?

CBD is one of the more than 100 cannabinoids found in the marijuana plant.²² Unlike THC, CBD does not cause psychoactivity; only the THC in marijuana gives the drug its psychoactive effects. CBD is largely bred out of high-potency, modern recreational cannabis, however there has been recent interest in its therapeutic qualities. A possible reason for this claim is that it is extremely expensive and difficult to extract pure CBD.

How does CBD work?

CBD works through a number of complex mechanisms. Preclinical studies indicate that CBD has analgesic (pain-relieving), anti-convulsant, anti-psychotic, and neuroprotective effects. Unlike THC, it does not readily bind to the CB1 or CB2 cannabinoid receptors in the human brain, which is why it does not cause psychoactivity.²³

What is the legal status of CBD?

CBD is a cannabinoid of the cannabis (marijuana) plant and is therefore a Schedule I substance under the federal Controlled Substances Act (CSA). The Food and Drug Administration (FDA) has confirmed that CBD is a Schedule I substance. Schedule I includes those substances that have a high potential for abuse; have no currently accepted medical use in treatment in the United States; and lack accepted safety for use under medical supervision.²⁴

On September 27, 2018, the Department of Justice and Drug Enforcement Administration announced that Epidiolex was placed in schedule V of the Controlled Substances. The FDA announced it approved Epidiolex for treatment of seizures associated with two rare and severe forms of epilepsy, Lennox-Gastaut syndrome and Dravet syndrome, in patients two years of age and older. Epidiolex contains cannabidiol (CBD). The CBD in Epidiolex is extracted from the cannabis plant and is the first FDA-approved drug to contain a purified extract from the plant.²⁵ Marijuana and CBD derived from marijuana remain against the law, except for limited circumstances that it has been determined there is a medically approved benefit. The FDA will continue to support rigorous scientific research on potential medical uses of marijuana-derived products.²⁶

What is hemp and what is its legal status?

Hemp is a variety of cannabis that is grown for its fiber, seeds, or both. Under European law, true hemp has 0.3 percent (3/10 of 1 percent) THC, and very low levels of CBD (1.5-2 percent). The cannabinoids (including CBD) are contained in small, hair-like appendages called trichomes. A few of these are found on (not in) the stalk of the hemp plant. However, the greatest concentrations of CBD are found in the flowers and leaves of the plant. Therefore, it would take a great deal of hemp plant material to produce a meaningful amount of CBD. “High CBD cultivars” very likely contain too much THC to qualify as hemp, as it is very difficult to breed a plant that has more than a 20:1 CBD to THC ratio.²⁷

Under the Controlled Substances Act, marijuana is defined as: “all parts of the plant *Cannabis sativa* L., whether growing or not; the seeds thereof; the resin extracted from any part of such plant; and every compound, manufacture, salt, derivative, mixture, or preparation of such plant, its seeds or resin. This does not include the mature stalks of such plant fiber produced from stalks, oil or cake made from the seeds of such plant, any

compound, manufacture, salt derivative, mixture, or preparation of such mature stalks (except the resin extracted therefrom), fiber, oil, or cake, or the sterilized seed of such plant is incapable of germination.”²⁸

What is hemp seed oil?

True hemp seed oil contains virtually no cannabinoids, which is why it can be sold legally in the United States as a dietary supplement. The US Department of Agriculture indicates that hemp seeds can be used directly as a food ingredient or crushed for oil and meal.²⁹

What is CBD hemp oil? Is it a legal dietary supplement?

Since true hemp contains very low levels of CBD and hardly any THC, so called “CBD hemp oil” is most likely produced from high CBD plants, which would not qualify as hemp because they would have more than 0.3% THC. It could also be made from massive quantities of hemp flowers, which still falls within the definition of marijuana. These high CBD plants also contain varying amounts of THC (e.g., CBD to THC ratios of 1:1, 10:1, 20:1, etc.), therefore any hemp oil containing a significant amount of CBD is being manufactured and sold illegally. Even CBD extracted from true hemp flowers and diluted with hemp oil is still a Schedule I substance.

The U.S. Code of Federal Regulations provides that certain processed cannabis plant material or animal feed mixture that contain THC are exempted from the CSA if they are 1) made from the part of the plant excluded from the definition of marijuana and 2) not used or intended for human consumption.³⁰ This clearly indicates that any products containing THC (even small amounts) that are used or intended for human consumption are illegal. It is entirely false to claim that CBD-rich hemp oil products are legal nutraceuticals.

Are unregulated CBD products safe?

High CBD plant material contains varying levels of THC, sometimes significant amounts. Most simple extraction processes can’t reliably remove most or all of this THC, because extremely complex and expensive equipment is required to adequately remove THC and produce a pure CBD extract. Research demonstrates that, in many cases, large doses of CBD are needed to achieve a specific therapeutic effect, so most products made for this purpose would also include dangerously high levels of THC

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Appendix B: Environmental Impacts of Marijuana Cultivation

This section examines the impacts that marijuana cultivation has on California, which is consistently ranked among the highest outdoor cultivators of marijuana in the United States. Estimates indicate that as much as 60-70% of the marijuana for the United States is grown in the state.¹ California is currently in the seventh year of a drought, with both the northern and central regions of the state affected the most. In order to irrigate their illegal crops, marijuana cultivators illegally divert water from springs, streams, creeks, and rivers, often seriously depleting these water sources. Additional environmental harms of marijuana cultivation include loss and fragmentation of sensitive habitats due to illegal land clearing and logging, illegal grading and damming of streams, and the poisoning of wildlife.²



Illegal pond water diversion associated with a marijuana site in Northern California.

Source: High Time for Conservation: Adding the Environment to the Debate on Marijuana Liberalization.

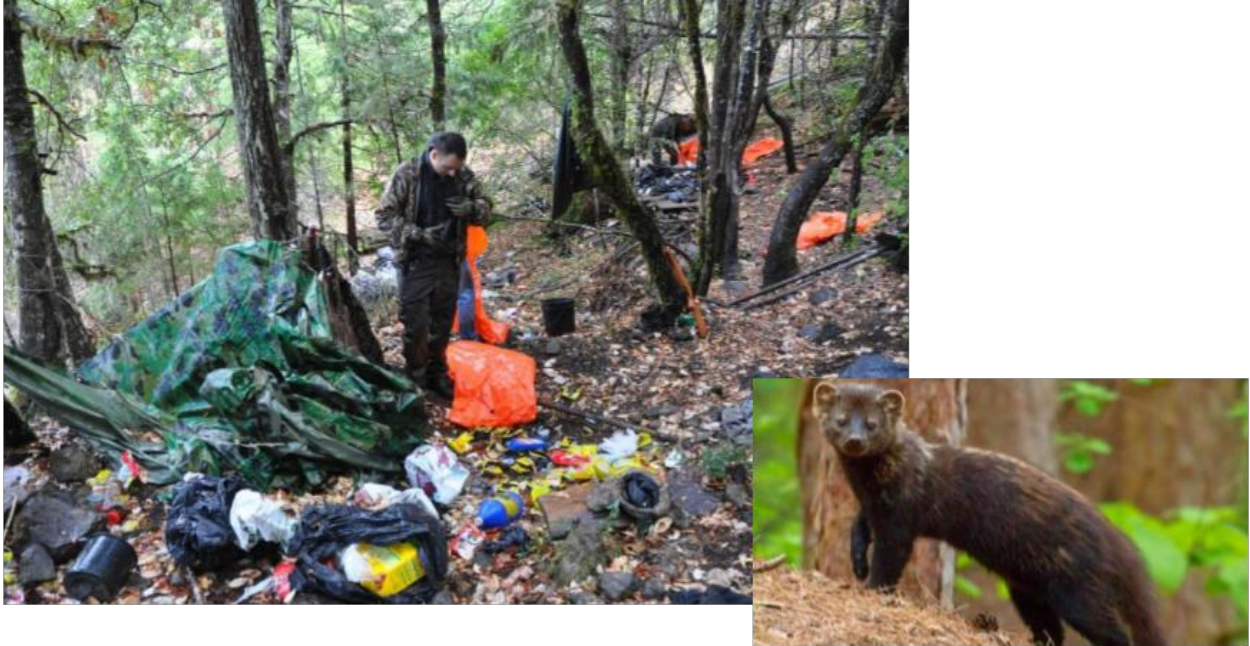
Findings

- Each plant is estimated to need 6-8 gallons of water per day during its 150-day growing season (May-September). Even grown legally, marijuana puts a strain on the state's already overtaxed water system, but illegal cultivation exacerbates the problem. The table below compares the water usage of cannabis and other common crops.³

Product	Gallons of Water Req'd to Produce 1 lb.
Soy	216
Wheat	138-240
Corn	98-108
Hops	300-450
Cannabis	450-900

Source: Huffington Post

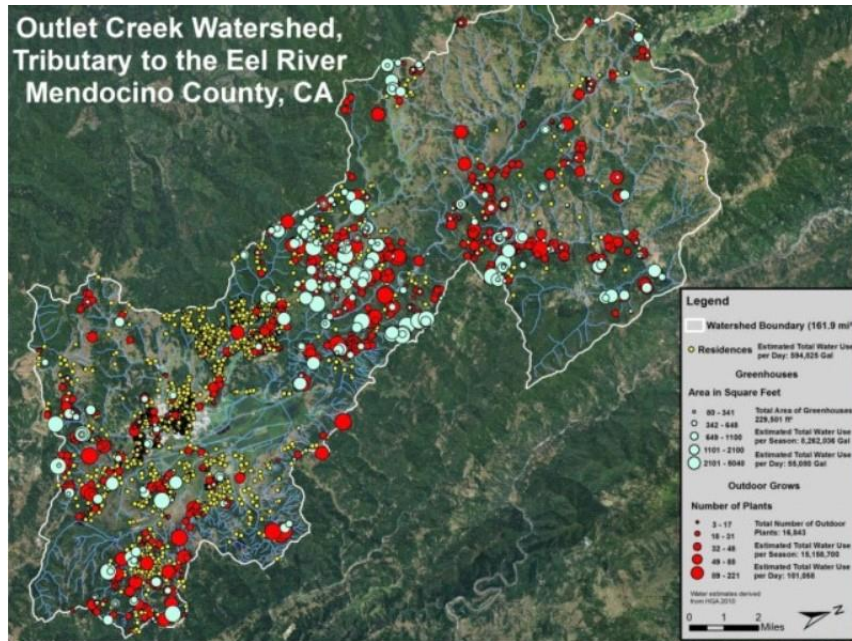
- Marijuana farms in proximity to watersheds can literally use all of the available water during the streams' summer low-flow period, leaving nothing to support fish and wildlife. The diminished stream-flow is likely to have deleterious effects on state and federally-listed species of fish.⁴
- Marijuana cultivation, particularly indoors, uses significant amounts of energy.
- Other environmental harms common to marijuana grow sites are toxic pesticide use, deforestation, and the considerable amount of trash, irrigation tubing, and other human refuse present at each cultivation location. It is plausible that these toxicants (pesticides, insecticides, fungicides, rodenticides, and herbicides) pose human health concerns through consuming contaminated game, exposure to contaminated water or soil, or possibly consumption of contaminated product.⁵
- Researchers in California have documented the exposure to and death to wildlife from illegally used pesticides at marijuana cultivation sites. In 2012, 79% of fishers, a rare forest carnivore found in California, were exposed to these pesticides. Shortly after this scientific publication, in 2015, researchers reported an increase of exposure to 85% of all fishers and a 233% increase in mortality from illegally used pesticides at marijuana cultivation sites.⁶



Poisons from illegal marijuana grow sites are killing increasing numbers of fishers in California. Here, Mourad Gabriel of the Integral Ecology Research Center stands among all the trash at a illegal marijuana grow site in Northern California.

Source: "Marijuana Farm Pesticides are Killing Fishers, a Rare Forest Mammal", Douglas Main, Newsweek, 11/4/15

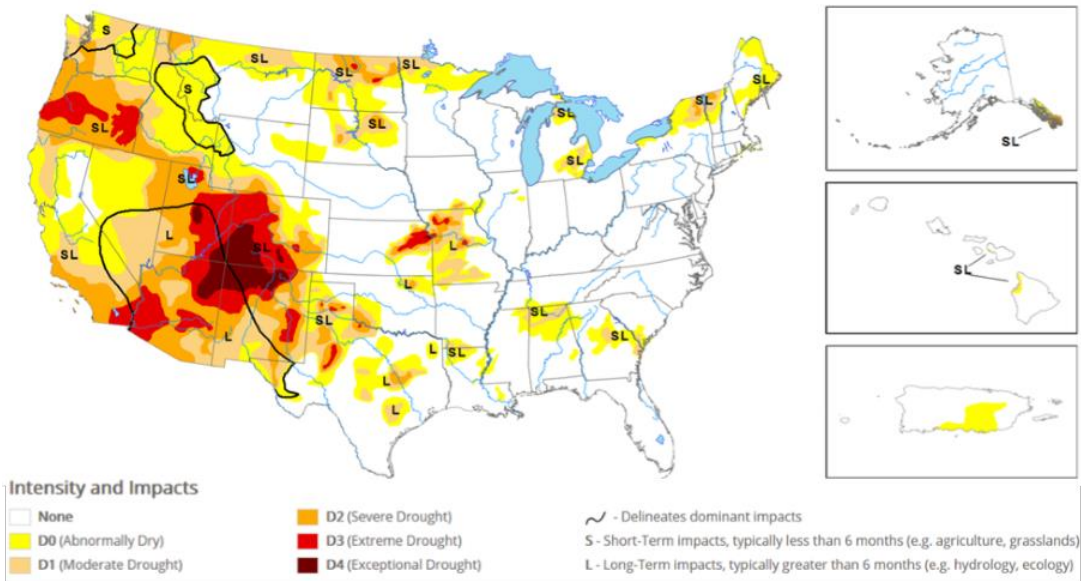
- More recently, reports from researchers have indicated that waterways below marijuana cultivation sites are contaminated with illegal pesticides, posing numerous potential risks to wildlife, fisheries and human health.⁷



Source: Impact of Surface Water Diversions and Marijuana Cultivation on Aquatic Habitat in Four Northwestern California Watersheds, PLOS ONE 10 (art.e0120016).doi:10.1371/journal.pone.0120016

Map released: September 27, 2018

Data valid: September 25, 2018 | Author: Jessica Blunden, NOAA/NCEI



Source: United States Drought Monitor

- ❖ Abnormal dryness or drought are currently affecting 34,572,000 people in California, which is about 93% of state's population.⁸
- ❖ Governor Jerry Brown lifted California's emergency drought mandate in all but four counties (Fresno, Kings, Tulare and Toulumne).⁹

Detail on Environmental Impacts of Marijuana

A research study looked at four watershed areas where salmon and trout are known to spawn. The three watersheds being used by marijuana farms literally used all of the water during the streams' summer low-flow period, leaving nothing to support fish and wildlife. The diminished stream-flow is likely to have lethal and sub-lethal effects on the state and federally-listed species of fish.¹⁰

The situation has become severe enough that the California State Assembly passed a bill in June 2015, entitled "The Watershed Protection Act." This bill is aimed at curbing the environmental destruction caused by marijuana cultivation. Some of the key elements of the bill are:

- Requirements that growers follow state and local laws regarding land conservation, grading, water usage, etc.
- The prohibition of outdoor cultivation within 100 feet of homes or schools
- A requirement that all outdoor cultivation sites be out of public view and behind a fence at least six feet high.¹¹

Another effect of marijuana cultivation is significant energy use, particularly for cultivators who grow indoors. Electricity is used for lighting; dehumidification; space heating, cooling, and drying; pre-heating irrigation water; generating carbon dioxide; and ventilation and air conditioning. From the perspective of individual consumers, a single Cannabis cigarette represents 1.5 kg (3 pounds) of CO₂ emissions, an amount equal to driving a 44 mpg hybrid car 22 mile or running a 100-watt light bulb for 25 [hours]."¹²

Other environmental harms common to marijuana grow sites, particularly illegal operations, are toxic chemical use, deforestation, and the prevalence of trash, irrigation tubing, and other human refuse. Many farmers of marijuana use various pesticides, insecticides, fungicides, rodenticides, and herbicides to keep predators away from their crops. These chemicals are often spread liberally around grow sites and harm not only the intended predators but also other animals who may eat them or may eat animals that have consumed the chemicals. It is even possible that the toxins may eventually reach humans, through eating something that has previously consumed another poisoned animal.¹³

Marijuana farmers also often clear large tracts of land for their use. This not only needlessly eliminates trees, it also destroys animal habitats, can contribute to soil erosion, and ultimately to landslides. When law enforcement and volunteer teams move into clean up grow sites, they also find plastic irrigation tubing, garbage, chemicals, and human waste, all of which damage the environment. All of these actions taken by growers effect not only their own grow sites, but have the potential to effect much larger segments of our natural habitats. For example, toxic chemicals can leak into ground water or streams, harming many more animals (and people) than those at the sit

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