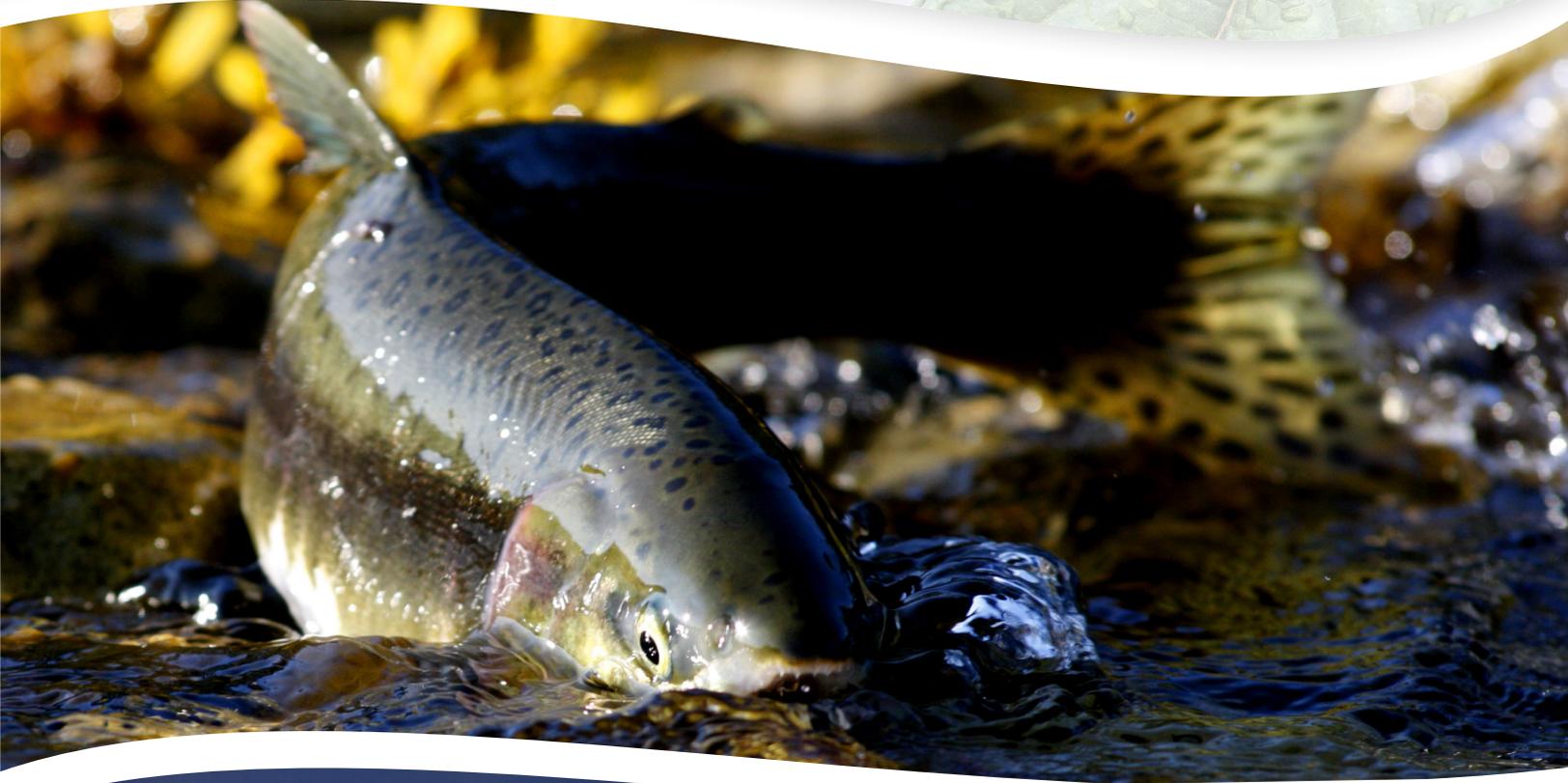




CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE Cannabis Annual Report 2018





INTRODUCTION

January 1, 2018, ushered in a new era in California. One where commercial cannabis activity must be licensed, legal, taxed, and regulated. The California Department of Food and Agriculture (CDFA), California Department of Public Health, and the Bureau of Cannabis Control began issuing licenses to cultivate, manufacture, distribute, test, and sell commercial cannabis for both medicinal and adult/recreational use. In June 2017, the State Legislature passed Senate Bill 94, the Medicinal and Adult-Use Cannabis Regulation and Safety Act (MAUCRSA). The MAUCRSA provided a framework for commercial cannabis regulations. The licensing authorities then adopted emergency regulations outlining commercial cannabis licensing requirements. Over 20 years after the Compassionate Use Act (Proposition 215) legalized the use of cannabis for medicinal purposes, a regulatory framework for California's commercial cannabis industry was now in place.

To help coordinate the transition into a legal market, the California Department of Fish and Wildlife (CDFW)

dedicated staff and other resources to support commercial cannabis-related needs including outreach, permitting, enforcement, and coordination efforts. As California transitioned into a legal market, CDFW worked with cannabis cultivators (cultivators), consultants, local jurisdictions, and other regulatory agencies to help minimize and avoid environmental impacts from commercial cannabis cultivation and manage California's diverse fish, wildlife, and plant resources. CDFW reviews and permits certain activities associated with commercial cannabis cultivation including water diversions and stream and road crossings. CDFW conducts site visits and inspections on both legal and illegal cultivation sites. CDFW also holds workshops and outreach events to educate cultivators and stakeholders about CDFW's role in the commercial cannabis market and the need to obtain approval for cannabis cultivation projects. In addition, CDFW works with cultivators, partner agencies, and nonprofit organizations to prevent and remediate environmental damage caused by illegal cannabis cultivation.





PERMITTING & ENVIRONMENTAL REVIEW

Through the California Environmental Quality Act (CEQA) process, CDFW plays a significant role, as a trustee agency, in ensuring that environmental impacts associated with cannabis cultivation are adequately addressed. As cities and counties throughout the state developed their cannabis programs, staff worked with local jurisdictions during preparation of cannabis cultivation ordinances and associated environmental documents, providing the biological expertise needed to avoid and minimize adverse impacts. In 2018, CDFW provided comments on over 270 ordinances and project-specific local permits related to cannabis cultivation.

Statutory and regulatory requirements state that in order to receive an annual cultivation license from the CDFA, applicants must obtain either a Lake or Streambed Alteration (LSA) Agreement or receive written verification that one is not needed. Through the LSA Agreement process, staff review project-specific information submitted by cultivators in LSA notifications, analyze potential impacts, conduct site visits, develop protective measures, and work with cultivators to minimize potential adverse effects to fish, wildlife, and plant resources.

In response to this new requirement for all commercial cultivators, CDFW prepared for an increase in LSA notifications it receives and processes annually. Until 2018, the only way to submit an LSA notification was by mailing a completed paper notification form to CDFW. To facilitate efficient and expedited review of potentially thousands of additional LSA notifications, technological and procedural improvements were developed and implemented.

EPIMS

The Environmental Permit Information Management System (EPIMS) was developed to provide an online portal for cultivators to notify CDFW of their cultivation projects and receive LSA Agreements and written verifications. EPIMS provides the following improvements:

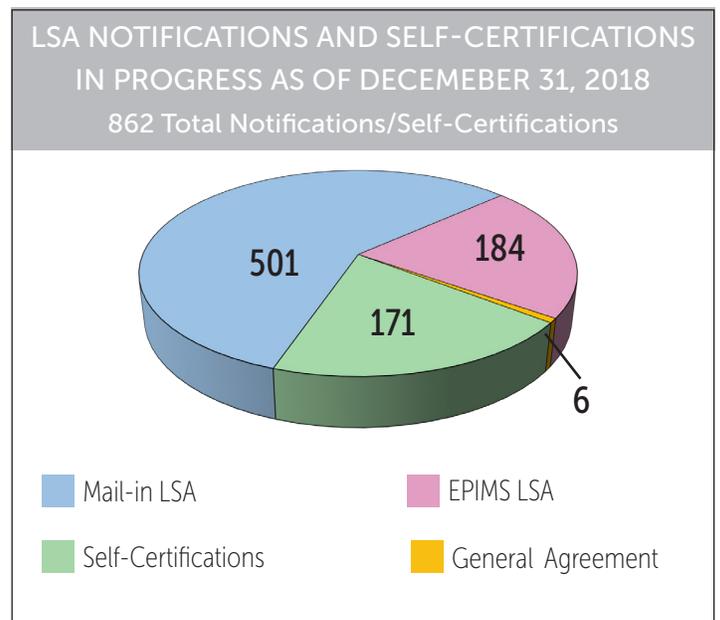
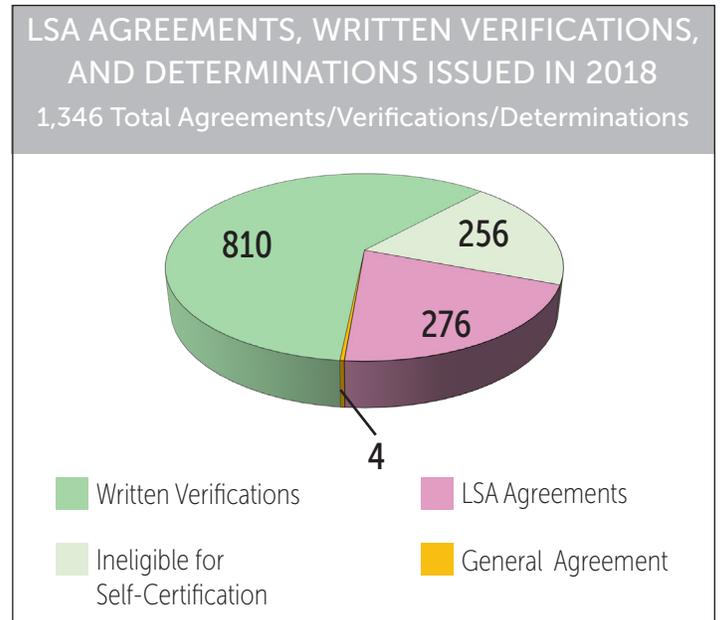
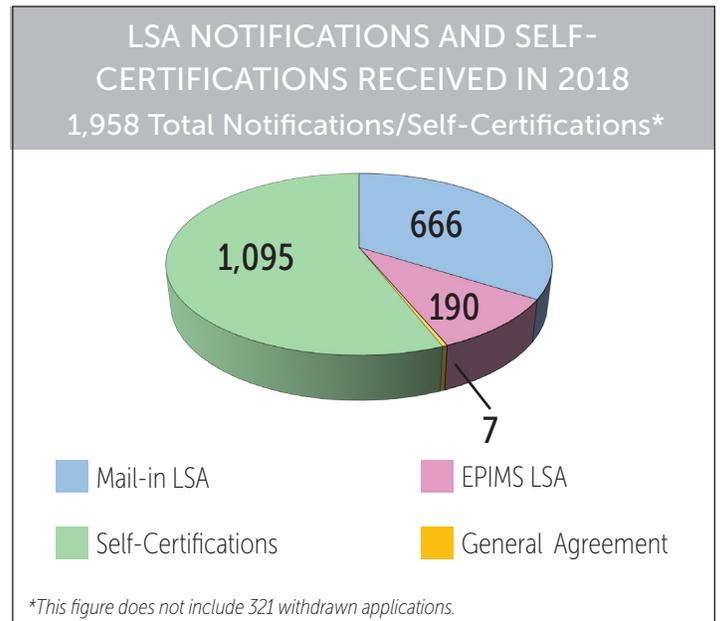
- Electronic LSA notification submittals, fee payments, and the processing and issuance of LSA Agreements and written verifications;
- Significantly decreased data entry and processing times;
- Automated emails to keep cultivators informed of their notification's progress and when additional information is due; and
- Automated emails reminding CDFW staff of next steps and due dates.

SELF-CERTIFICATION

In response to the requirement that CDFW shall review and respond to all proposed cultivation projects, a process was developed that allows cultivators to complete an online self-certification through EPIMS by providing limited information related to their cultivation project. CDFW reviews this information and determines if applicants are eligible to receive written verification that an LSA Agreement is not needed. The brevity, absence of fees, and reduced staff time necessary to review self-certifications resulted in nearly 700 cultivators receiving written verifications through this process.

GENERAL AGREEMENT

In response to addressing the cannabis-related LSA workload, CDFW adopted a General Agreement for cannabis cultivation. Protective measures and specific criteria were developed for activities often associated with cultivation sites (i.e., stream crossings and water diversions). The General Agreement, which is exempt from CEQA and includes standard permit conditions and a reduced review timeframe, offers cultivators an alternative to the normal LSA Agreement process.





OUTREACH

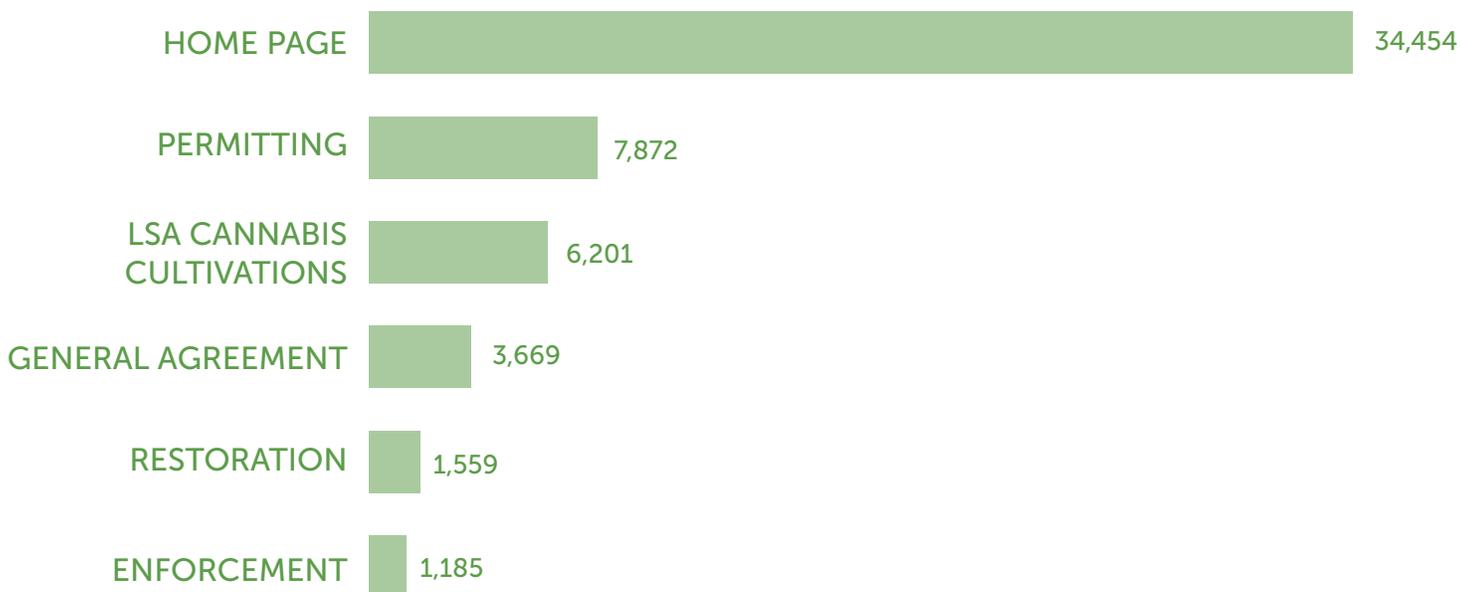
In an effort to educate, inform, and build partnerships with key stakeholders such as the public, county partners, city leadership, the cannabis cultivating community statewide, and other stakeholders, CDFW engaged in several forms of proactive outreach throughout 2018. Outreach activities included: presentations at cannabis permitting workshops, meeting one-on-one with cultivators and consultants, participating in board of supervisors' meetings, collaborating with cannabis growers associations, creating and updating a Cannabis Program public website, and developing materials to help answer common questions and how to navigate CDFW's permitting process.

The website provides valuable information for cultivators and is accessible 24/7. With nearly 35,000 visitors, the Cannabis Program website has proved to be a valuable tool in helping cultivators understand the CDFW LSA notification and permitting process. The table below shows a summary of website browsing for 2018.

Cannabis related workshops were held throughout the state and proved to be most successful when multiple departments and agencies were in attendance to answer questions and provide insight into their agency's permitting processes. CDFW engaged with dozens of communities from northern California, the

Cannabis Web Visitors

www.wildlife.ca.gov/Cannabis





Central and South Coast, and the Inland Desert. CDFW partnered with sister agencies such as the State Water Resources Control Board (State Water Board), Regional Water Quality Control Boards, and CDFA to provide information and help cultivators come into compliance with licensing requirements and reduce impacts to fish, wildlife, and plant resources. Overall, CDFW facilitated or participated in over 70 outreach events in 2018.

A workshop in northern California's city of Fortuna hosted nearly 150 people and allowed CDFW and the State Water Board to present information on navigating their cannabis cultivation permitting processes. CAL FIRE and Humboldt County also participated in an open-house portion of the workshop, where representatives from all agencies were set up around the room allowing growers to move from table to table and ask questions specific to their cannabis cultivation site. Radio station KMUD hosted an interview with CDFW and the State Water Board prior to the workshop and a reporter from The Eureka Times Standard was present and conducted interviews.

Another noteworthy cannabis permitting workshop was conducted in Southern California. More than 40 growers, consultants, and interested parties attended this workshop in Adelanto. Many of these growers were unaware of the cannabis related environmental impacts occurring in the state's desert region. This region has many streams that run only during the rainy season and provide a main water source for the surrounding environment. The event was a huge success and many of the growers were grateful for the time and the ability to meet face to face with CDFW staff.

Outreach also included CDFW staff responding to hundreds of cannabis related public inquiries through emails and phone calls. This one-on-one approach was extremely useful in sharing information about the cultivators' responsibilities and requirements. In addition, CDFW's role and permit processes were described.



ENFORCEMENT

CDFW's Law Enforcement Division (LED) plays a critical role in California's transition into a regulated cannabis industry. Wildlife officers work side-by-side with scientific staff in the Watershed Enforcement Program (WEP) to identify illegal cannabis cultivation sites. WEP includes regionally based teams that collaborate with the State Water Board and CDFA in a multiagency task force to prevent, investigate, enforce, and remediate environmental damage resulting from illegal cannabis cultivation on private lands.

LED is also involved with efforts to support the legal cannabis market by removing illegal marijuana from the black market on state and federal lands. CDFW employs dedicated wildlife officers whose primary focus is apprehending illegal growers trespassing on public lands and reclamation of these impacted areas. These grows are typically associated with criminal enterprises such as drug trafficking organizations and pose a significant danger to the public and the environment.

Despite California's transition into a legal cannabis market in 2018, enforcement efforts were challenged with addressing illegal cultivation sites with varying degrees of environmental violations and other serious crimes. For example, even though some cultivators were compliant with their local jurisdictions they did not have authorization from CDFA to cultivate cannabis.

Another significant challenge was a limited workforce given the volume of illegal cannabis activities throughout the state. In some cases, LED had only six personnel to cover many large counties with active illegal cannabis cultivation. These limitations create many enforcement challenges with protecting fish, wildlife, and plant resources from black market cannabis crimes.

CDFW worked extensively with city, county, state, and federal partners. All the illegal grows encountered were attempting to put untested cannabis products on the market in California or transport their product out of state where the market value is higher.

In 2018, LED conducted nearly 400 missions on illegal grows located on public and private lands, conducted hundreds of cannabis site inspections, and assisted with more than 160 search warrants with local entities on illegal cannabis cultivation sites. Along with this, CDFW issued 273 Notice of Violation letters (NOVs) to provide the responsible party with information about the data collected at the illegal cannabis cultivation site, the laws that were violated, and next steps for coming into compliance.

ENFORCEMENT STATISTICS

Illegal Cannabis Products Removed From The Black Market

1,506,117 illegal cannabis plants

51,269 pounds of processed and untested cannabis flower

375 pounds of butane honey oil (BHO)

3,222 THC edibles

Waste Removed From The Environment¹

116,815 pounds of trash (from public lands)

315 pesticide containers

88 hazmat containers

Other Evidence Seized

182 firearms

50 pounds of methamphetamines, **9** pounds of heroin and **709** grams of cocaine

2,000 oxycodone and methadone pills

¹All trash, pesticides and hazardous materials were disposed of appropriately.



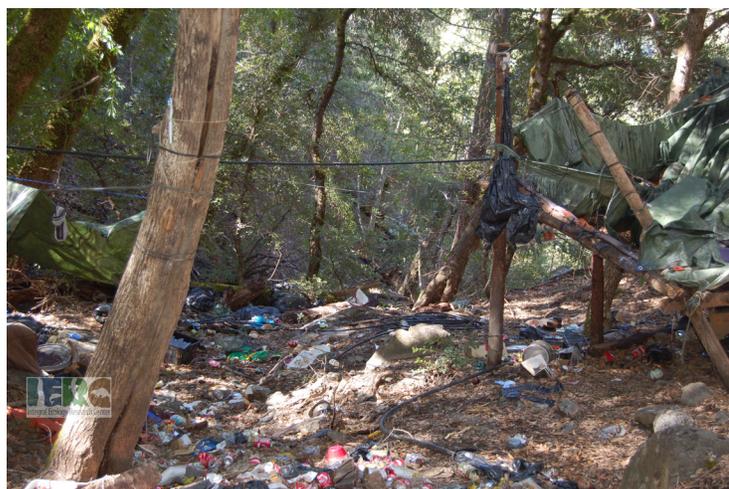
RESTORATION GRANTS

The 2017 Budget Act allocated funding to CDFW to award grants to projects that restore watersheds impacted by cannabis cultivation in key areas of coastal northern California. CDFW created the Cannabis Restoration Grant Program and awarded \$1.3 million to support the four restoration projects below, which commenced in 2018:

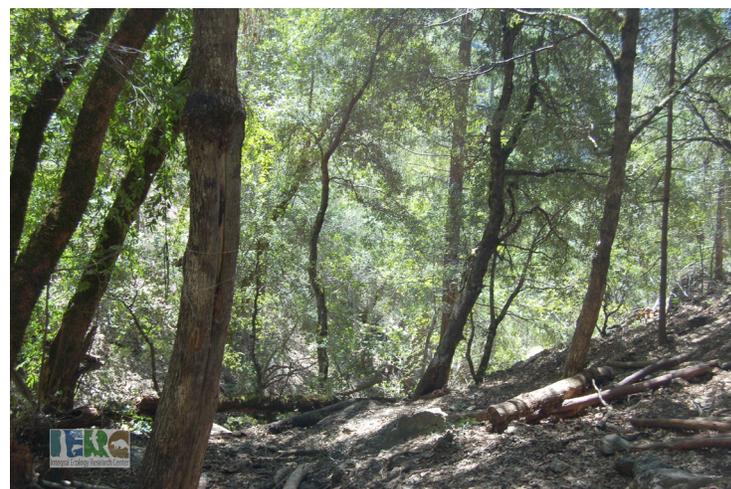
- Reclaiming our Public Lands and Watersheds from the Environmental Threats of Trespass Cannabis Cultivation (\$1,068,415 to Integral Ecology Research Center);
- Bull Creek Cannabis Recovery Project (\$94,510 to Eel River Watershed Improvement Group);
- SF Usal Creek Headwaters – Trash and Toxin Clean-up (\$83,840 to Eel River Watershed Improvement Group); and
- Whitethorn Grove Clean Up (\$64,831 to Sanctuary Forest, Inc.).

INTEGRAL ECOLOGY RESEARCH CENTER PROJECT HIGHLIGHT

Funds awarded to the Integral Ecology Research Center were used in 2018 to reclaim 83 illegal cannabis cultivation sites. The operations resulted in removal of over 48,168 pounds (24 tons) of trash and over 31 miles of irrigation pipe. Fertilizer and pesticides found at the sites were removed, preventing further pollution and destruction of fish, wildlife, and plant resources. Crews also removed water diversions and impoundments, restoring millions of gallons of water back into the watersheds annually. Restoration could not have occurred without the financial support and collaboration of a large multiagency, interdisciplinary team, and funding through the CDFW Cannabis Restoration Grant Program. In areas impacted by illegal cannabis cultivation, restoration projects such as this are immensely important for the protection and survival of fish, wildlife, and plant resources.



BEFORE RESTORATION



AFTER RESTORATION



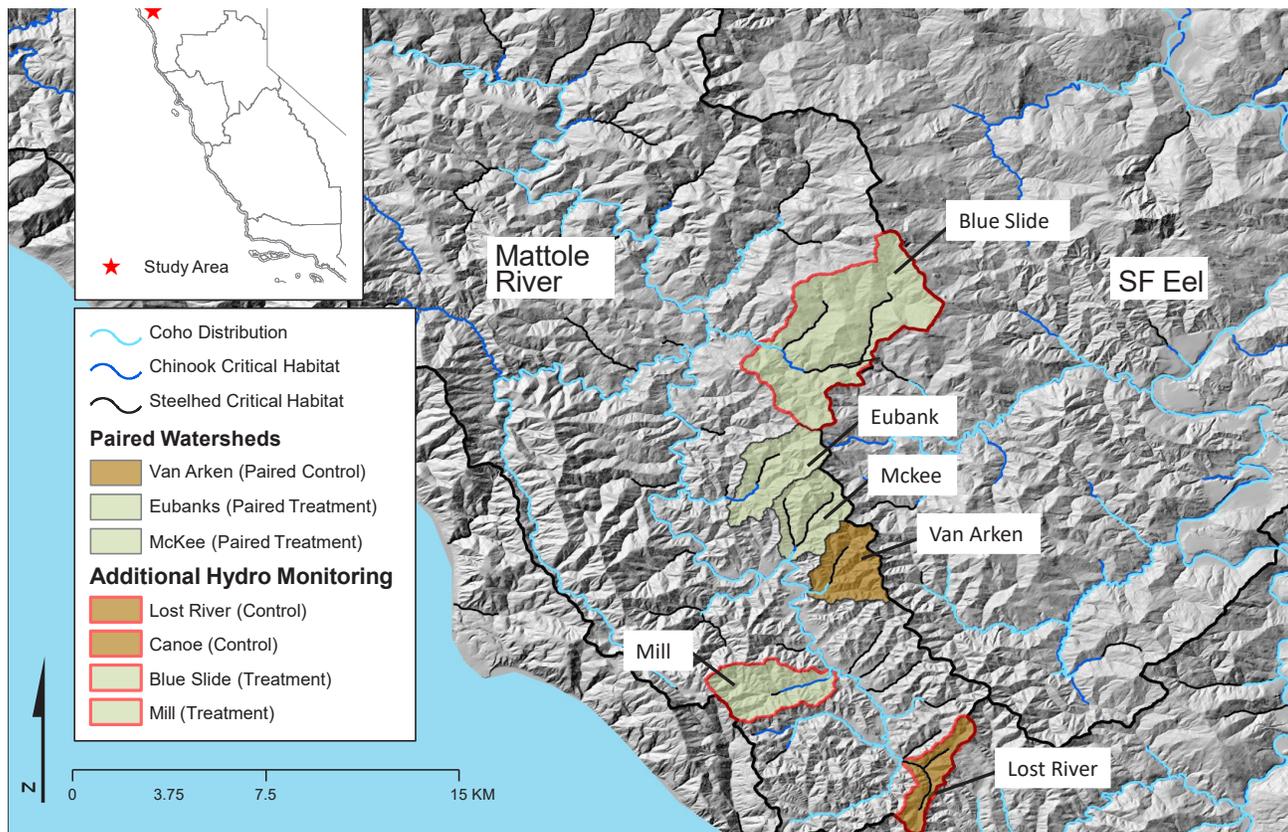
MONITORING

CDFW is charged with considering effects of water use and environmental impacts in the implementation of MAUCRSA. In 2018, CDFW began monitoring efforts to assess cannabis cultivation impacts on fish, wildlife, and plant resources. Monitoring included documenting adverse effects of cannabis cultivation during site visits, as well as a pilot study conducted to better understand how cultivation activities may affect the hydrology and environmental health of watersheds.

PILOT STUDY - HUMBOLDT COUNTY

The CDFW pilot study assessed the use of a paired watershed design to measure the potential impacts of cannabis cultivation on sensitive watersheds in Hum-

boldt County. Cultivation sites with water diversions were the focus of this study. Streamflow, water temperature, dissolved oxygen, aquatic insect community composition, and other data were collected in streams with and without cultivation. Aerial images were used to estimate total plant count and canopy area of cultivation sites. These metrics inform the estimated cannabis cultivation-related water consumption in each watershed. Crews of four spent a total of five weeks in the field to complete the data collection for this study. In total, over 1,200 staff hours were spent developing the study plan, collecting information in the field, and analyzing data in the office. The final report is scheduled to be completed and published by the fall of 2019.





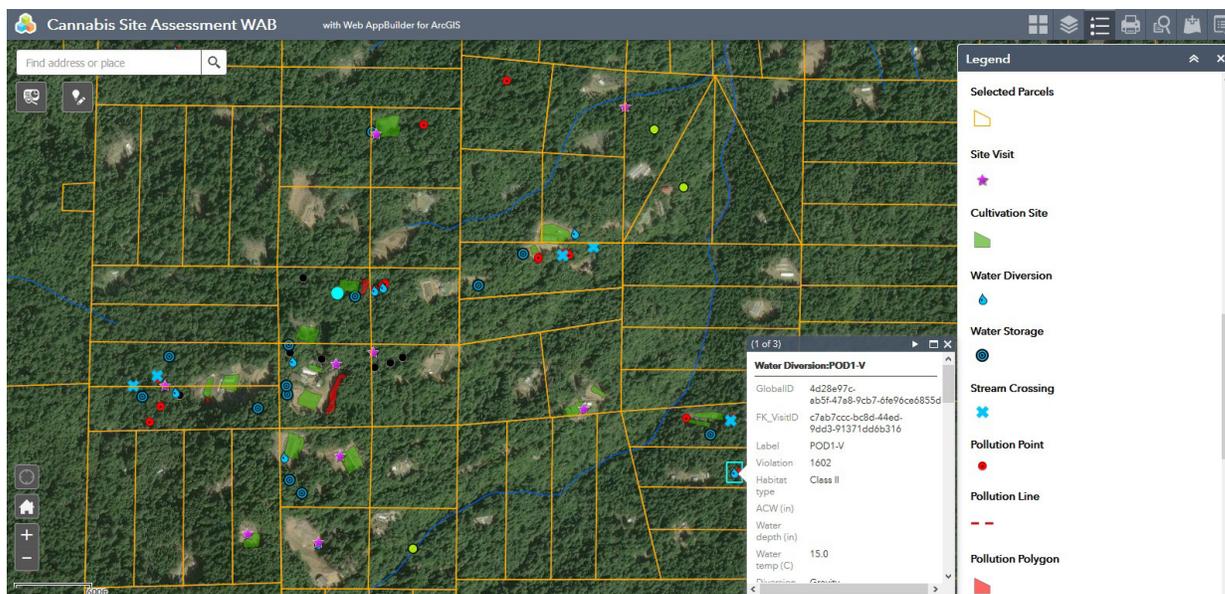
DATA MANAGEMENT INNOVATIONS

The ability to accurately and efficiently collect, manage, query, report, and display data is imperative to the success of CDFW's cannabis permitting, enforcement, coordination, and outreach efforts. Anticipating the need to collect large amounts of new data in the field and perform analysis back in the office, CDFW staff developed improvements to traditional methods of data collection and advances in data management.

Using powerful mapping and analytics software like ArcGIS and other Esri data collection and analysis applications, CDFW staff are now able to collect data on mobile devices during site visits. This innovation allows staff to document habitat alterations, water diversions, pollution, and other Fish and Game Code violations by mapping locations, attaching photos, and populating standard data forms in real time. This mobile data collection system has already decreased post-site visit data processing time by 3-4 hours. Staff members no

longer have to download, organize, and label multiple data files from GPS devices and cameras or transcribe hardcopy notes in the office. Data is stored in the cloud where it can be readily accessed anytime using a variety of web, desktop, or mobile applications and software. The information collected in the field is also used to generate and track NOVs. The same mobile data collection system can be used during a follow up site visit to document remediation and restoration efforts. CDFW will use this mobile data collection system to conduct permit compliance inspections at permitted cannabis cultivation sites. Compliance inspections allow CDFW to document and ensure the permit terms and conditions are followed.

The data collected will also be used to evaluate where and how much cannabis cultivation is occurring across the landscape, which will inform future outreach, monitoring, and enforcement efforts and priorities.





LOOKING FORWARD

PERMITTING & ENVIRONMENTAL REVIEW

The number of cultivators seeking an LSA Agreement or written verification from CDFW was less than anticipated in 2018. Many factors attributed to this, notably that only local authorization was required to obtain a CDFA temporary cultivation license. As temporary licenses begin to expire in 2019 and cultivators apply for annual licenses, CDFW anticipates a greater cannabis permitting workload for 2019. CDFW will be working closely with cultivators to ensure timely issuance of their LSA Agreements or written verifications while continuing close coordination with CDFA on the licensing process. CDFW may also revise the General Agreement to meet program needs.

CDFW staff spend a significant amount of time developing permit measures that minimize or avoid adverse impacts to fish, wildlife, and plant resources. Verifying compliance is essential to ensuring that these protective permit measures are being implemented. It is also important for CDFW to verify that information submitted in self-certifications is true and accurate. CDFW permitting staff will use the established mobile data collection system to standardize and document permit compliance monitoring statewide and ensure consistent protection of fish, wildlife, and plant resources.

OUTREACH

Moving into 2019, CDFW will implement an outreach plan to build relationships with cultivators and maintain partnerships with sister agencies. CDFW will continue to encourage cultivators to use outreach tools or materials

when facing environmental questions, navigating the permitting process, or needing guidance. Outreach efforts will also include media relations, infographics, social media, and strengthening partnerships with key stakeholders.

ENFORCEMENT

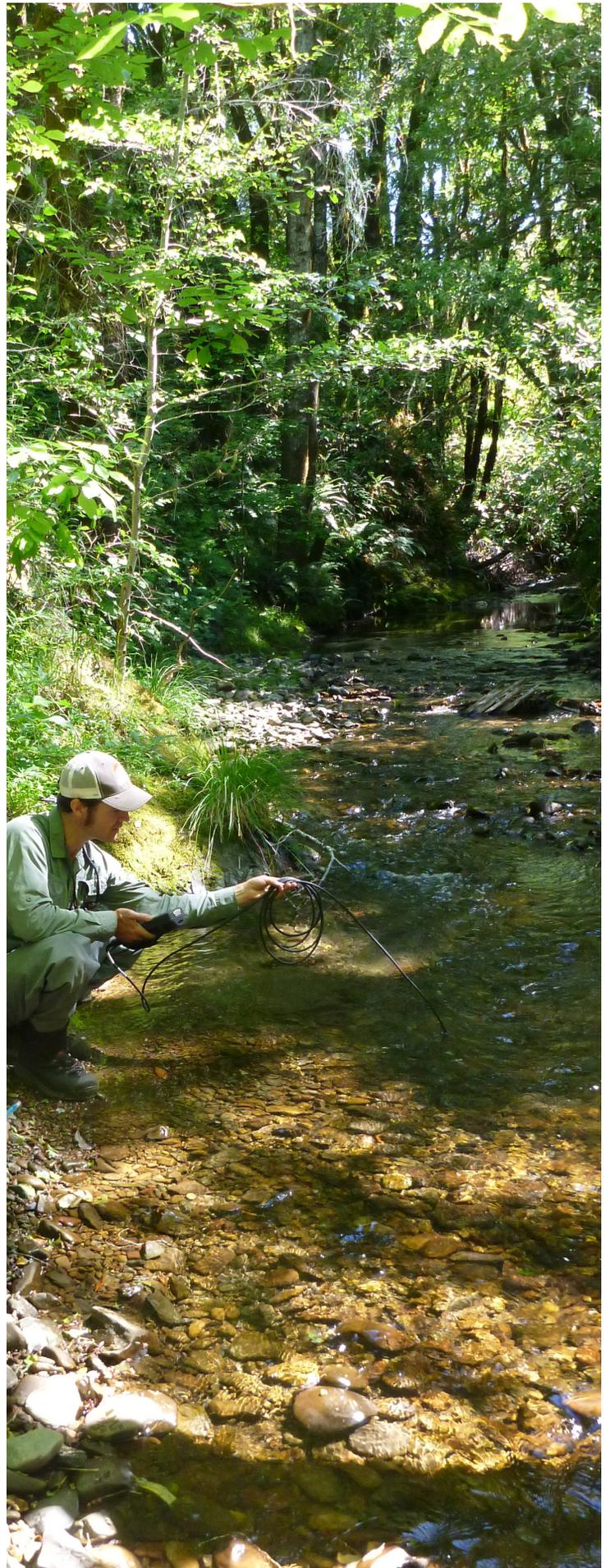
CDFW will continue to strengthen and forge new relationships with local, state, and federal law enforcement agencies, California National Guard, the State Water Board, Regional Water Quality Control Boards, CDFA, and the Bureau of Cannabis Control. Wildlife officers will focus on the removal of black-market cannabis, giving the legal market an opportunity to thrive and affording fish, wildlife, and plant resources the greatest protections. CDFW will continue to help educate cannabis growers on best management practices and required permits to cultivate cannabis. Wildlife officers will continue to work internally with scientists and legal counsel and appropriate external partners to address environmental crimes associated with illegal cannabis cultivation. Wildlife officers will also continue to provide security to civilian staff members participating in the multiagency task force and coordinating with appropriate agencies on reclamation of public lands that have been impacted by illegal cannabis cultivation.

MONITORING

The 2018 pilot study data analysis will be completed in 2019 and the results will be posted to the [Cannabis Program website](#). CDFW monitoring results will also be presented at future meetings, conferences,

workshops, and outreach events such as the 2019 Joint Annual Conference for the American Fisheries Society and The Wildlife Society in Reno, Nevada.

CDFW will expand on the pilot study in 2019 to include terrestrial wildlife and upland habitat monitoring. This expanded effort will provide a more comprehensive approach to developing a long-term, statewide monitoring and assessment framework. This will include monitoring aquatic and terrestrial species, and their habitat to evaluate cannabis cultivation impacts. The framework will also enable data comparison and a better understanding of current and future potential cannabis cultivation impacts. CDFW will focus monitoring efforts to inform and prioritize cannabis program activities.





Need More Information on CDFW's Cannabis Program?

www.wildlife.ca.gov/cannabis

Got Questions?

AskCannabis@wildlife.ca.gov

Need Program Materials?

Janice.Mackey@wildlife.ca.gov

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