

Regional Water Quality Control Board
North Coast Region

Executive Officer's Summary Report
Thursday, February 21, 2019
Regional Water Board Office
Santa Rosa, California

ITEM: 11

SUBJECT: Insight into Cannabis-Related Water Use and Associated Impacts on Instream Flow (*Bryan McFadin & Chris Dillis*)

BOARD ACTION: This is an informational item; no action will be taken by the Board.

BACKGROUND: In recent years, cannabis production has greatly expanded in the North Coast Region, and these activities have resulted in increased water use. Currently, there are an estimated 40,000 to 50,000 cannabis cultivation operations operating in the state of California, in a variety of legal statuses, producing approximately 15 million pounds of cannabis flowers (CDFA 2017). The majority of operations, approximately 60%, are found in the North Coast Region.

DISCUSSION: Regional Water Board staff will present data describing the results of two separate studies investigating water use and cannabis cultivation. The first, presented by staff Environmental Scientist Chris Dillis, examines where farms typically source their water, monthly variation in water demand, and the role of water storage in altering seasonal extraction patterns (Dillis and others, in press). This study, which has been submitted to the journal *California Agriculture* for publication, analyzes water use reporting data from cannabis cultivators in the North Coast who were enrolled for coverage under the North Coast Regional Water Quality Control Board Cannabis Waste Discharge Regulatory Program (Cannabis Regulatory Program) during the 2017 cultivation year. These self-reported data contain water sources, water storage capacity, and the timing and amount of water use, both as input to storage and as applied to plants. These data are used to analyze the distribution of water sources, seasonal extraction patterns, and the role of water storage and sources in affecting these patterns. The paper describing the study is expected to be published within the next few months.

The second study, presented by Flow and Riparian Protection Specialist Bryan McFadin, evaluates the impacts of cannabis growing operations on instream flows in select Trinity River watersheds near the Hayfork, Douglas City, and Weaverville communities. Staff mapped and digitized cannabis operations in the selected watersheds and applied water use estimates reported by local cannabis growers in submittals associated with the Cannabis Regulatory Program. Staff also estimated water use associated with permitted surface diversions reported to the State Water Resource Control Board's Division of Water Rights. Both water use estimates are compared to streamflows measured at 33 sites during the low flow season (April – October) throughout the study area to gauge the impacts of the diversions. A peer review draft of the report "Quantification of Instream Flow in Select Trinity River Tributaries and Comparison to Water Use Estimates" is attached.

Citations:

California Department of Food and Agriculture (CDFA) 2017. CalCannabis Cultivation Licensing Draft Environmental Impact Report.

https://www.cdfa.ca.gov/calcannabis/documents/CDFA_CalCannabis_DEIR_Vol1.pdf

Dillis CR, Grantham TE, McIntee C, McFadin B, Grady K. Watering the Emerald Triangle: Irrigation sources used by cannabis cultivation in Northern California. *In press*. California Agriculture

RECOMMENDATION: This is an informational item.

SUPPORTING

DOCUMENTS

UNDER SEPARATE COVER:

McFadin, Bryan; McIntee, Connor; Cusick, Nicholas; Grant, Callie; Abbott, Katy; Heyvaert, Cameron; 2019.

Quantification of Instream Flow in Select Trinity River Tributaries and Comparison to Water Use Estimates: Peer-Review Draft. Unpublished.