



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404-4731

Public Comment
Cannabis Policy and Staff Report
Deadline: 9/6/17 by 12 noon

September 6, 2017

Refer to NMFS No: 10012WCR2017AR00173



State Water Resources Control Board
Clerk to the Board
Attn: Jeanine Townsend
P.O. Box 100
Sacramento, California 95812-0100

Dear Ms. Townsend:

This letter is in response to the California State Water Resources Control Board's (State Water Board) July 7, 2017, Notice requesting public comments on the Draft Cannabis Cultivation Policy – Principles and Guidelines for Cannabis Cultivation (Cannabis Policy) and Draft General Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order). NOAA's National Marine Fisheries Service (NMFS) is the lead federal agency responsible for the stewardship of the Nation's offshore and living marine or anadromous resources and their habitats, and implements the Endangered Species Act (ESA) and the Magnuson-Stevens Fisheries Conservation and Management Act to fulfill its mission of promoting healthy ecosystems. We applaud the State Water Board's effort to address water quality and instream flow impacts from cannabis cultivation and respectfully submit the following comments on the Cannabis Policy and General Order.

Water Diversion Management

NMFS is concerned with the water management elements proposed within the Cannabis Policy and General Order. We agree with the stated goal to “ensure that the individual and cumulative effects of water diversions and discharges associated with cannabis cultivation do not affect instream flows needed for fish spawning, migration, and rearing, and the flows needed to maintain natural flow variability.” However, interim flow requirements outlined in Attachment A of the Cannabis Policy (see *Numeric and Narrative Instream Flow Requirements*) may fall short of meeting this goal and may result in excessive landscape disturbance because of the water storage required.

The proposed method follows the Tessman method and is based on a percentage of the estimated mean annual and mean monthly “natural” flow, with the required bypass flows calculated at established “compliance” gages (proximal U.S. Geological Survey stream gages). The



compliance gage is used as a surrogate to define the diversion period at the point of diversion (POD). The proposed method allows for 50% of the streamflow to be diverted with a maximum diversion of 10 gallons per minute at the POD.

To evaluate the State Water Board’s approach to managing water diversions under the Cannabis Program and General Order, we calculated estimated daily diversion and storage requirements using the historic, daily stream flow data from a relatively unimpaired stream. We assumed a level of irrigation per acre representative of cannabis cultivation. We evaluated multiple scenarios by varying the number of diversions, as well as the maximum level of withdrawal and forbearance period duration. For comparison, we also evaluated an alternative method that employs a percent of the natural hydrograph (“percent of flow”) to manage water diversions. We used Elder Creek within the South Fork Eel River watershed in Southern Humboldt County as the reference gage and assumed a small 1.9 square mile sub-watershed as the POD. We estimated stream flow at the POD based on the Elder Creek gage scaled by area. This “test stream” represents unimpaired or “natural” streamflow.

Based on our evaluation, the diversion management approach described in the Cannabis Policy would have minimal effects to streamflow in our “test stream” with an average diversion rate of 0.12% (maximum 1.18%; Table 1). However, the associated water storage was approximately 2 times higher than the water storage required by alternative percent of flow method, which provides the same level of irrigation supply.¹ In a more impaired stream, there could be less water availability and significantly higher storage required. We are concerned about the potential effects of such large amounts of water storage on the landscape (*e.g.*, storage is often created by clearing forest or increasing the extent of impervious areas), as well as future compliance with the policy by diverters faced with the significant cost of the added storage. We are also concerned with the potential cumulative effect of numerous diversions in a highly developed watershed with multiple users. If the current level of diversion within a watershed is high, existing stream flow may already be unnaturally low and impacting ESA-listed coho salmon, Chinook salmon and steelhead and their critical habitat (*e.g.*, migration, spawning and rearing habitat).

Comparison of Diversion Methods			
	Average Percent Diverted	Maximum Percent Diverted	Storage Required (gallons)
Modified Tessman	0.12%	1.18%	232,000
Percent of Flow	0.07%	0.20%	110,400

Table 1. Comparison of diversion rates and required storage between the Modified Tessman and percent of flow methods assuming: (1) an irrigated area of 10,000 square feet, (2) a maximum diversion rate of 10 gallons per minute, (3) 0.007 percent of total surface flow required, and (4) forbearance period April 1 to October 31.

We would like to work with the State Water Board and the California Department of Fish and Wildlife on a method to estimate a conservative “natural” hydrograph at each POD. In addition, we would like to help establish a maximum rate of diversion or deviation from the “natural” hydrograph that would be protective of all life stages of listed species and habitat. Diversions

¹ The higher storage requirement is due in part to the need for year-to-year carryover storage to ensure irrigation needs are met during dry years within the period of record analyzed.

should conserve the natural variability of all flows; maintain and adhere to the natural shape of the hydrograph; and require the minimum amount of storage needed in order to meet the diversion demand. For already-disturbed streams, the deviation from the natural hydrograph should dictate the timing and duration of the forbearance period, and the level of disturbance should dictate limits on cumulative diversions. Our evaluation reveals that a constant low rate of diversion from a “natural” hydrograph could be established at many sites throughout California and provide the needed water supply for the same irrigated area, while requiring much less storage than the proposed method and protecting the natural hydrograph.

General Order comments


NMFS respectfully submits the following, specific comments regarding the waste discharge component of the General Order.

DRAFT Cannabis Cultivation Policy, page 15: The Personal Use limit of less than 20 percent hill slope differs from the “low risk” designation of less than or equal to 30 percent. State Water Board staff should consider classifying these two groups of growers consistently, preferably by establishing a 20 percent maximum hillslope for both.

DRAFT Cannabis Cultivation Policy: Attachment A, page 39: Under required winterization measures, the Cannabis Policy should require cover crop planting on any exposed soil within the cultivation area to prevent winter erosion, similar to existing requirements for many vineyard operations. This requirement would not apply where ground has not been disturbed and native vegetation remains, such as when above ground “grow bags” are employed.

NMFS appreciates the hard work of the State Water Board staff and looks forward to working with you on these complex issues. If you have any questions concerning this letter, please contact Rick Rogers at (707) 578-8552 or Rick.Rogers@noaa.gov; Margaret Tauzer at (707) 825-5174 or Margaret.Tauzer@noaa.gov; or Matt Goldsworthy at (707) 825-1621 or Matt.Goldsworthy@noaa.gov.

Sincerely,



for Alecia Van Atta
Assistant Regional Administrator
California Coastal Office