

NEXUS TO CLIMATE CHANGE

Current and future impacts of climate change include increasing frequency of extreme weather events, heat waves, and more frequent and longer droughts, which have consequent effect on water quality and water availability. Examples of water quality impacts include, but are not limited to, dry periods and drought lowering stream flow and reducing dilution of pollutant discharges, and more erosion and sedimentation caused when an intense rainfall event occurs. Climate change also affects the habitat and prevalence of crop pests and weeds. These climate change impacts will affect Central Coast agriculture and therefore the Regional Board's program activities. Staff is making a concerted effort to begin identifying the nexus between climate change, its impacts on the Central Coast agricultural industry and water quality, and program planning. This document identifies and describes some of the issues likely to arise as climate change continues to affect the environment.

Irrigated Lands Regulatory Program activities that could be affected by climate change include:

1. Increase in crop type and cultivar changes as farmers switch to crops better adapted to new conditions and lower water supplies
2. Decrease in irrigated lands enrollment if land use changes from agriculture to other uses if growers cannot switch to crops that are better adapted to new conditions
3. Nitrogen reporting and nitrogen loading will change based on crop yield changes
4. Increased water quality issues and complaints due to soil erosion and sedimentation
5. Increased or new water quality issues from higher usage of herbicides, to address new weed invasions / expanded ranges of existing weeds
6. Increased or new water quality issues from higher usage of insecticides and fungicides, to address new diseases and pests and invasions / expanded ranges of existing diseases and pests

Pollutant risks from agricultural discharges could be affected by climate change in the following ways:

1. Irrigation Discharge– increase / decrease in irrigation tailwater or tile drain flows
2. Sediment and Erosion – increase in erosion and sedimentation from higher intensity storm events
3. Pesticides (herbicides, insecticides, fungicides) – increase in pesticide concentrations and toxicity to organisms
4. Nutrients – increase / decrease in nutrient loading, depending on weather and crop yields
5. Salinity – increase in soil, surface water and groundwater salinity levels
6. Groundwater: increased pollutant concentrations if recharge is reduced

Future orders regulating irrigated agricultural discharges will likely need to include:

1. Improved / Increased Irrigation Water Management
2. Improved / Increased Sediment and Erosion Control Management
3. Improved / Increased Pesticide Management
4. Improved / Increased Nutrient Management
5. Improved / Increased Riparian Management