Berkeley Cannabis Research Center

Indoor Cannabis Cultivation

December 2025

During a project on unlicensed cultivation, we created a model to detect indoor cultivation energy usage and estimate its prevalence across California. Indoor cultivation developed in response to cannabis prohibition and enforcement – it is often easier to hide. That said, it is expensive (e.g. energy, water, rent, security) and requires significant infrastructure.

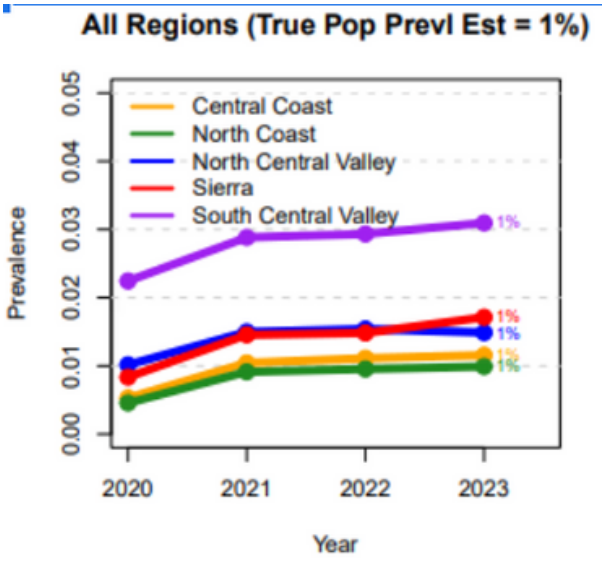
So, how has unlicensed indoor cannabis cultivation evolved after legalization?

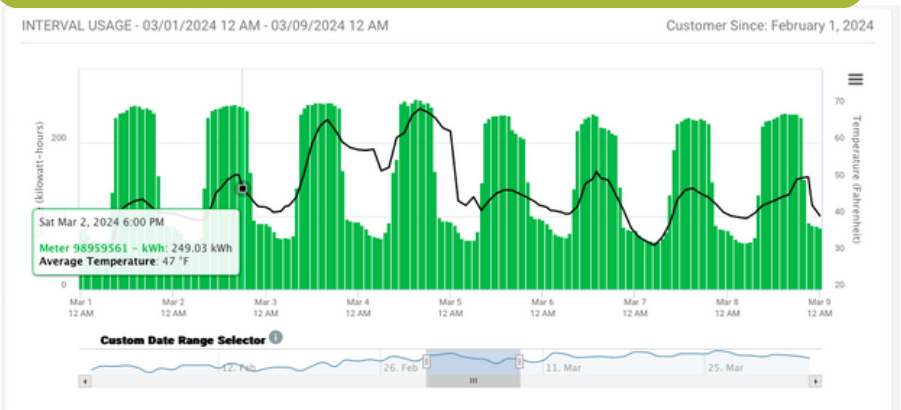
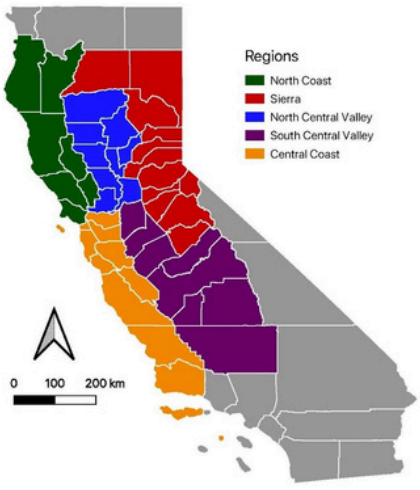
Methods

1. Acquired data on licensed indoor cultivation and known unlicensed facilities to create a reference energy "signature" of indoor cultivation (e.g. 12-hour on/off cycles).
2. Acquired data from California's Public Utility Companies to test signature against this not growing cannabis, including other high energy uses.
3. Applied machine learning model to a large dataset of energy users (n=250,000) to detect likely indoor cultivation in residential and commercial facilities from 2020-23.
4. Tested and modified model for reliability for predictive performance and accuracy.

Results

- **Indoor cultivation increased most dramatically across PG&E coverage from 2020-21.**
- **South Central Valley exhibited high incidence and steady growth of indoor cultivation.**
- **North Coast had the lowest incidence.**
- **North Coast, North Central Valley, and Central Coast regions plateaued after 2021.**
- **The Sierra and South Central Valley regions exhibited steady growth in prevalence over the 4 year period.**





Sample energy signature for cannabis cultivation.