2022 DELTA SCIENCE FELLOW FACT SHEET

Sea Grant CALIFORNIA

Delta Stewardship Council
Delta Science Program

Nicol Parker

Doctoral Fellow
University of California, Santa Barbara

Focus Harmonizing pesticide risk management of the Bay-Delta watershed

Award $62,991

Research Mentor
Dr. Arturo Keller, University of California, Santa Barbara

Community Mentors
Dr. Jennifer Teerlink, California Environmental Protection Agency, Department of Pesticide Regulation

PROJECT

Pesticides can be a major stressor for ecosystems in the Bay-Delta watershed. This project builds and improves upon the Pesticide Management Prioritization Model (PMPM), which was developed during Parker's 2020 Delta Science Fellowship. To the existing model, Parker will add high-resolution irrigation data, clarifying where pesticides are transported; a harmonized species indicator of pesticide toxic burden across various taxa; and new data on pesticide degradation across chemical and soil types.

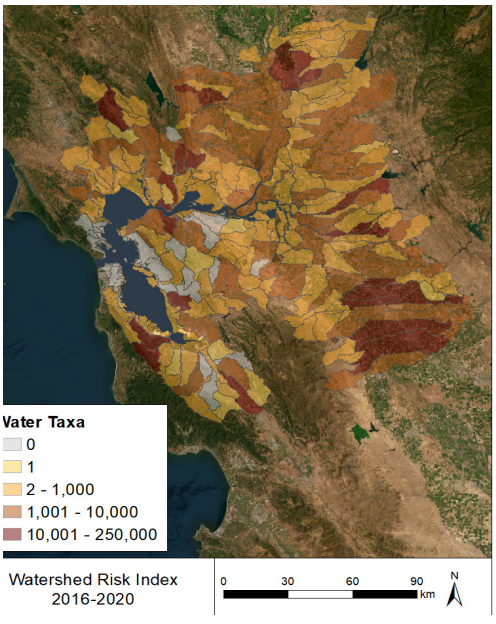
TIMELINE

Fall 2022 Integrate high-resolution irrigation data from the Irrigated Lands Regulatory Program into the PMPM.

Spring & Summer 2023 Compile information indicating how pesticides impact various taxa in the Bay Delta; quantify the variability of pesticide degradation and the significance to pesticide risk in the Bay Delta.

IMPACTS

Farmers in California's Central Valley make decisions that have rippling effects across the Bay-Delta watershed and impacting underserved human and ecological communities. But farmers do not always have access to the best science or an understanding of how their choices impact the community. The improved Pesticide Management Prioritization Model will allow farmers to consider human and ecosystem health alongside the economics of their operations.



"I want my results to promote conversations that focus not on wrongdoings or pesticide restrictions, but on opportunities to improve how pesticides are used for the benefit of communities in the Delta – in terms of both public health and farm economics."