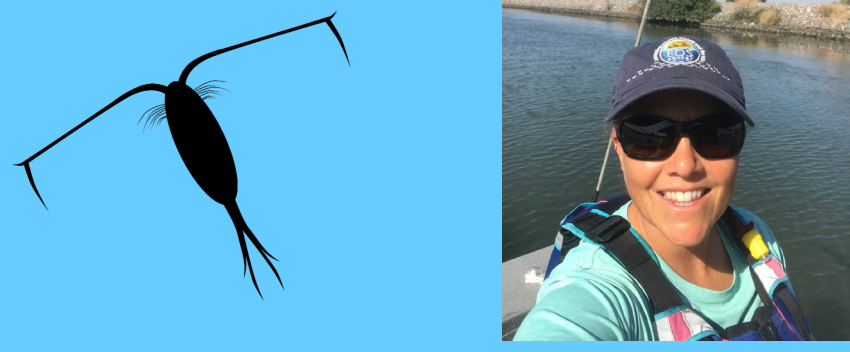


Potential changes in calanoid copepod growth following a low-nutrient pulse in the Sacramento River

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CONTEXT & STUDY OBJECTIVES

Upgrades at the Sacramento Regional Wastewater Treatment Plant (SRWTP), will decrease loading of nitrogen, especially ammonium, to the Sacramento River. In September 2019, the SRWTP held back effluent for 48 hours, resulting in parcels of nutrient-rich and nutrient-poor water, allowing us to concurrently sample present-day conditions and a proxy for possible future conditions as the parcels moved through the system. We sampled in the North and South Forks of the lower Mokelumne River (NFM & SFM) where phytoplankton had several days to respond to nutrient changes.

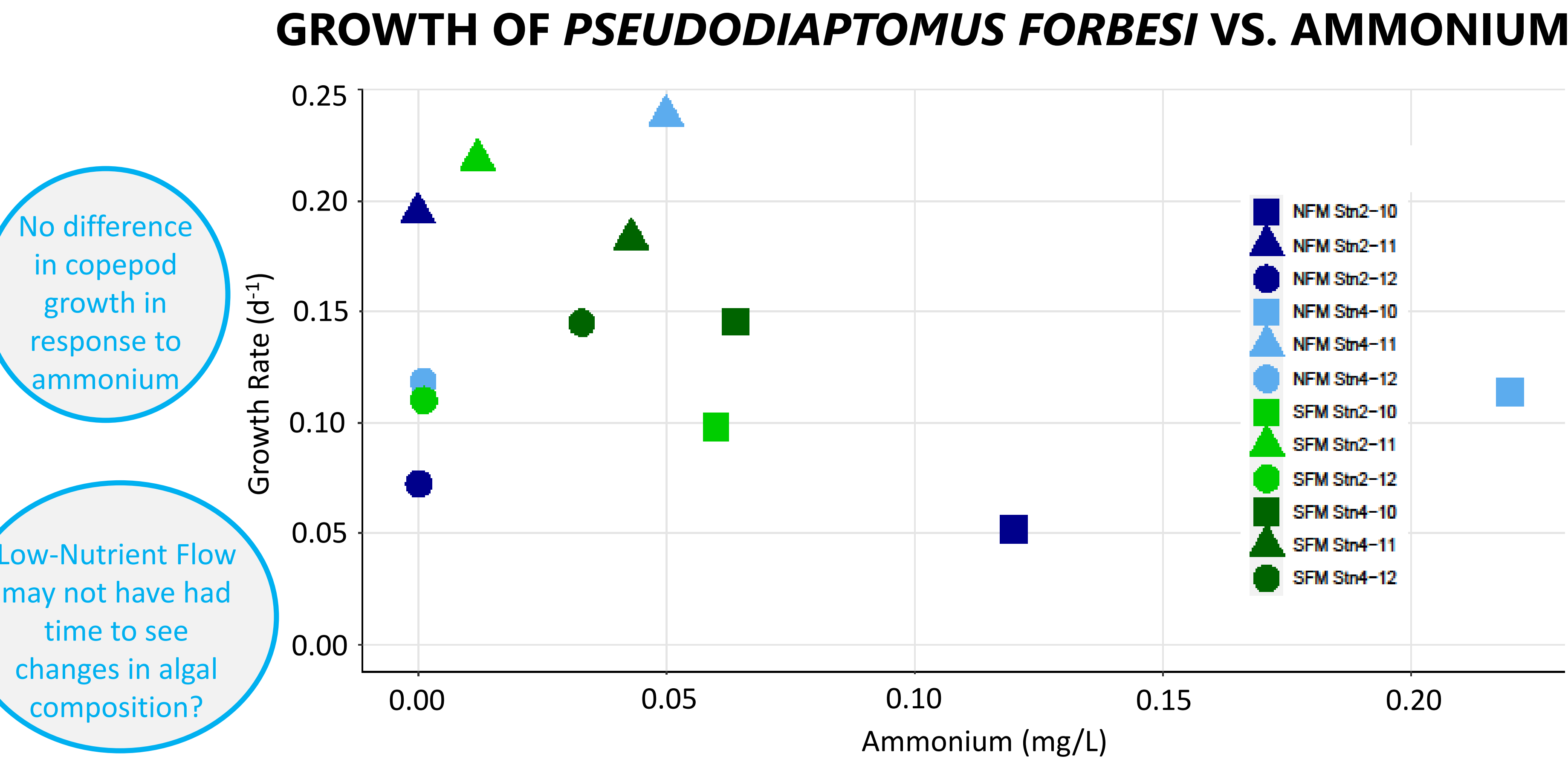
We participated in a multidisciplinary project to examine responses of the planktonic food web to the differences in nutrient concentrations.

RESEARCH QUESTION

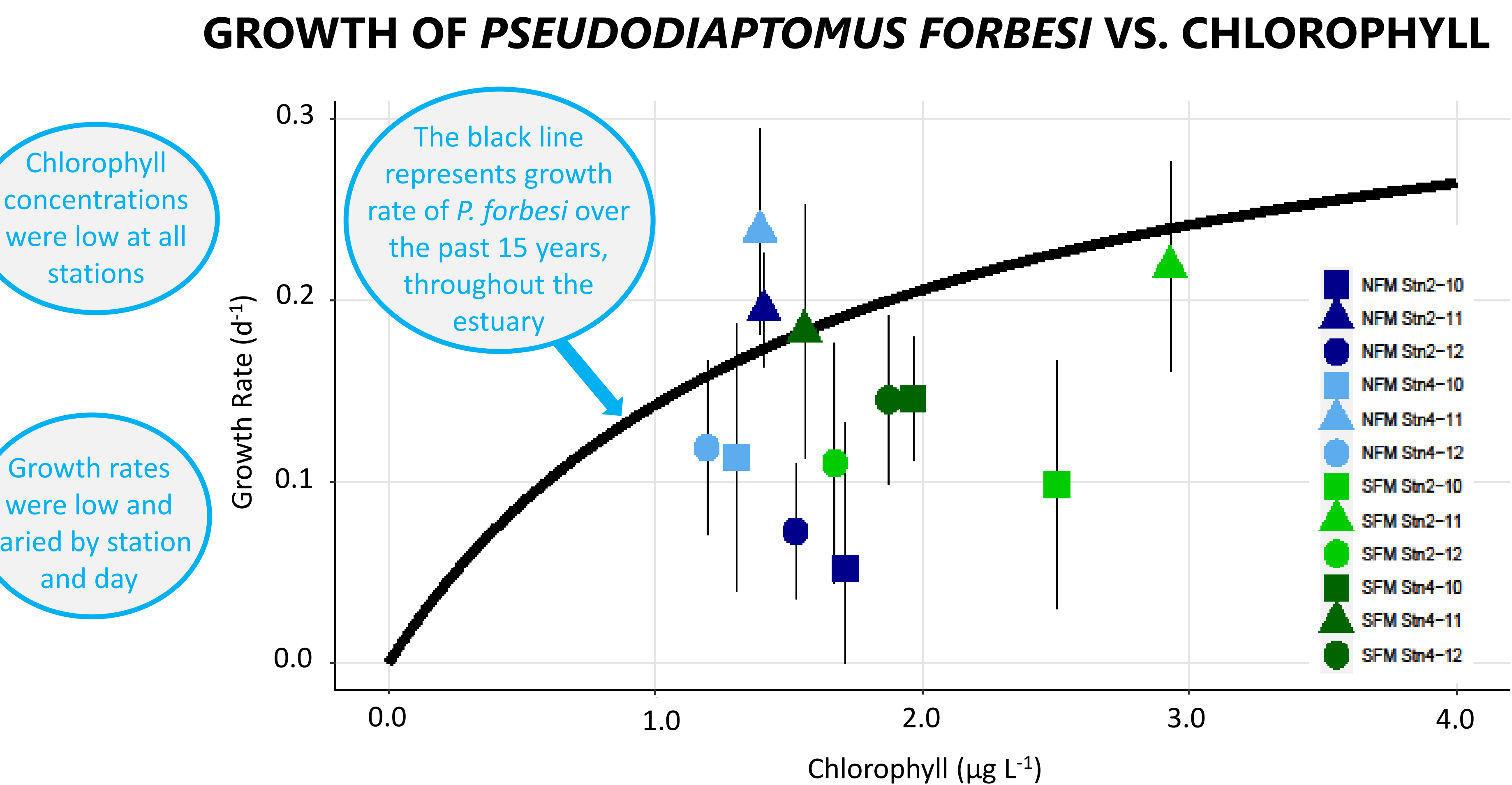
How does the growth rate of *Pseudodiaptomus forbesi* change under the low-nutrient conditions?

Growth rates of copepods were low throughout study sites regardless of chlorophyll or ammonium levels.

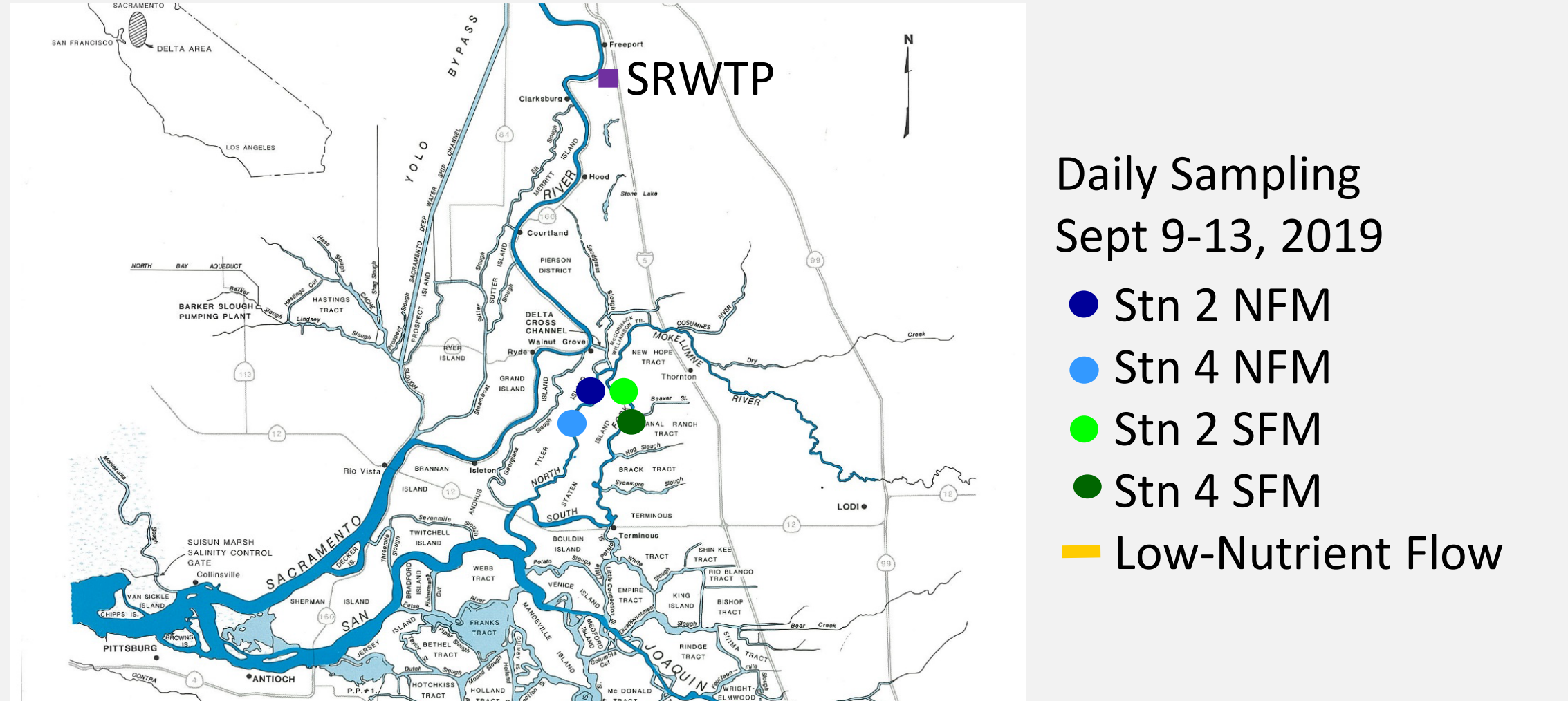
RESULTS



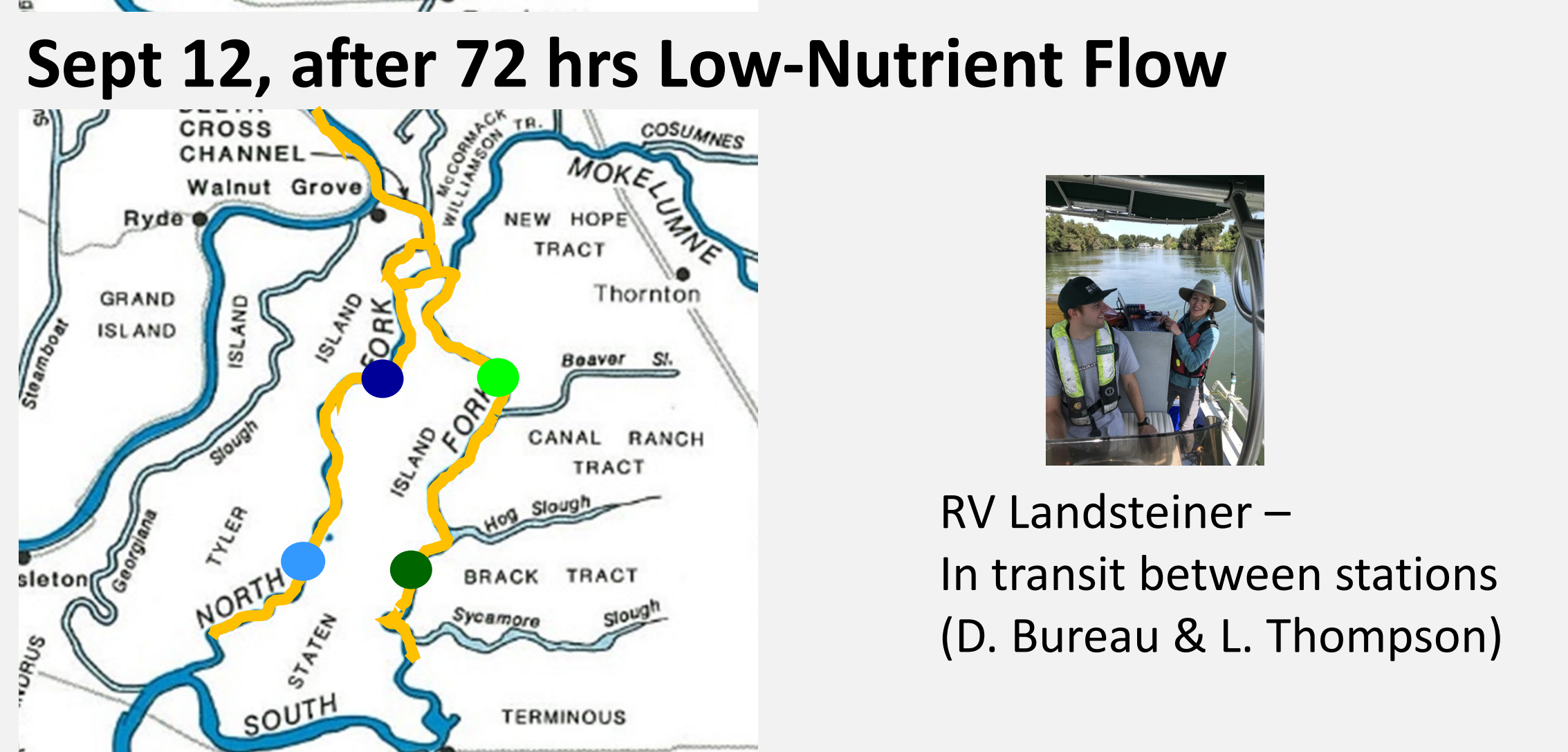
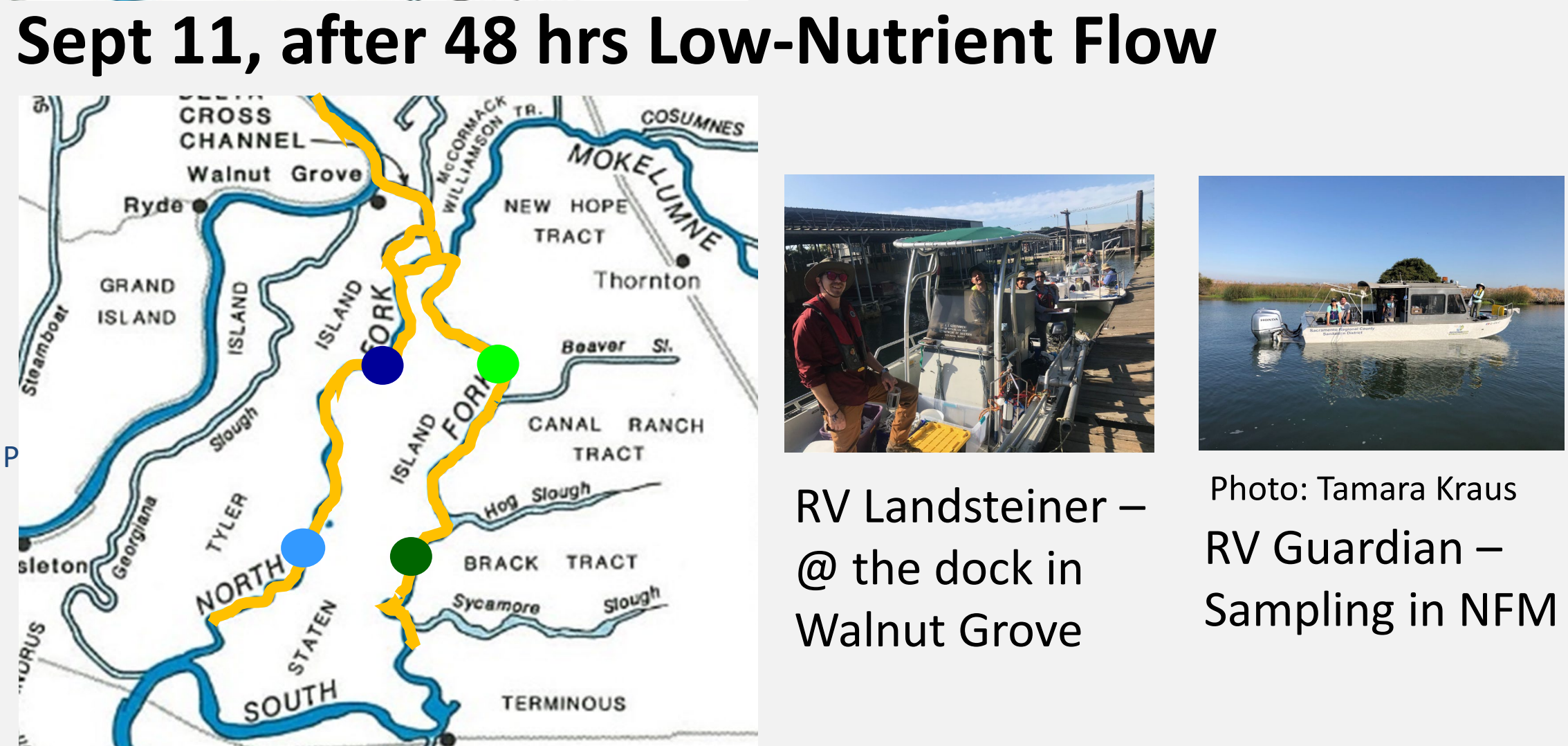
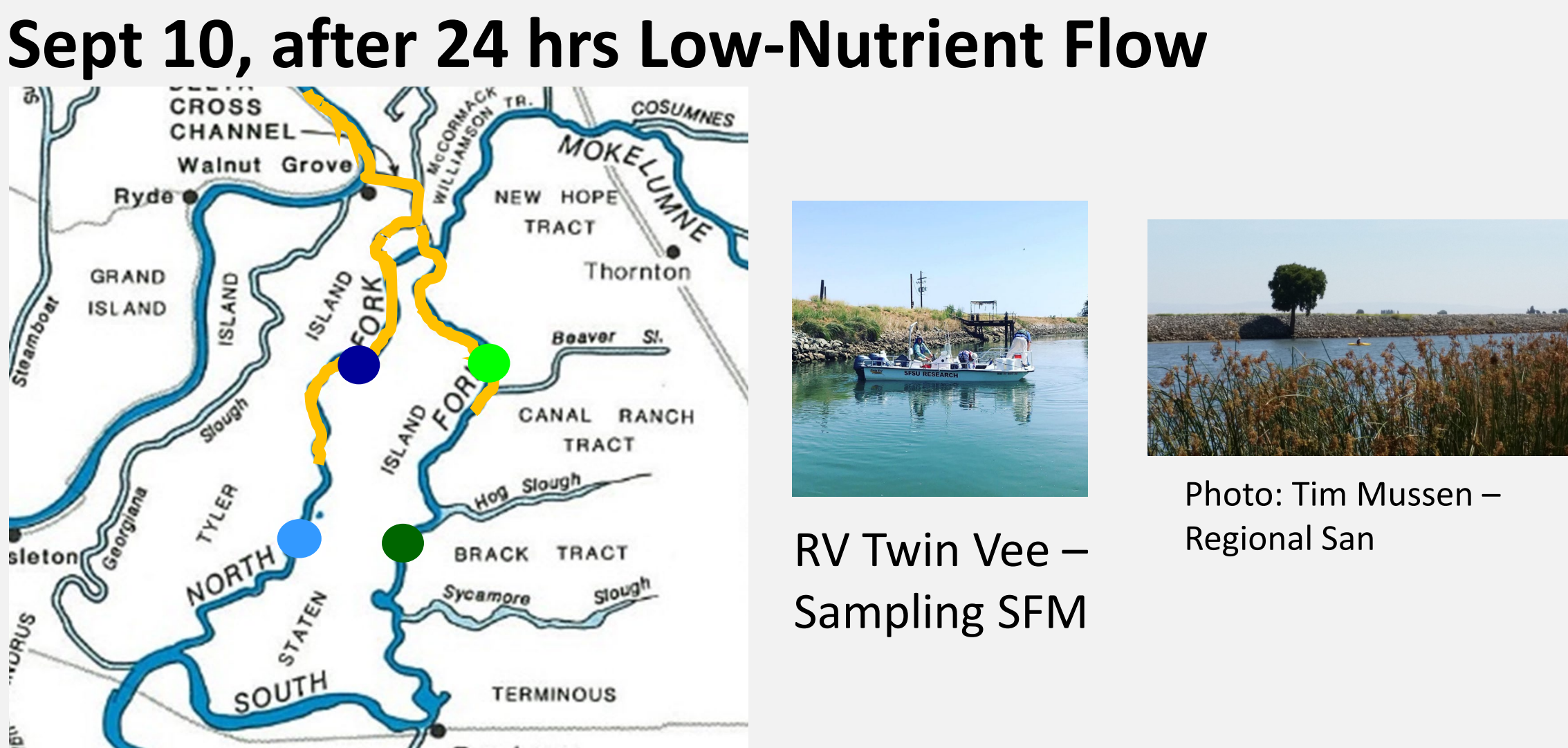
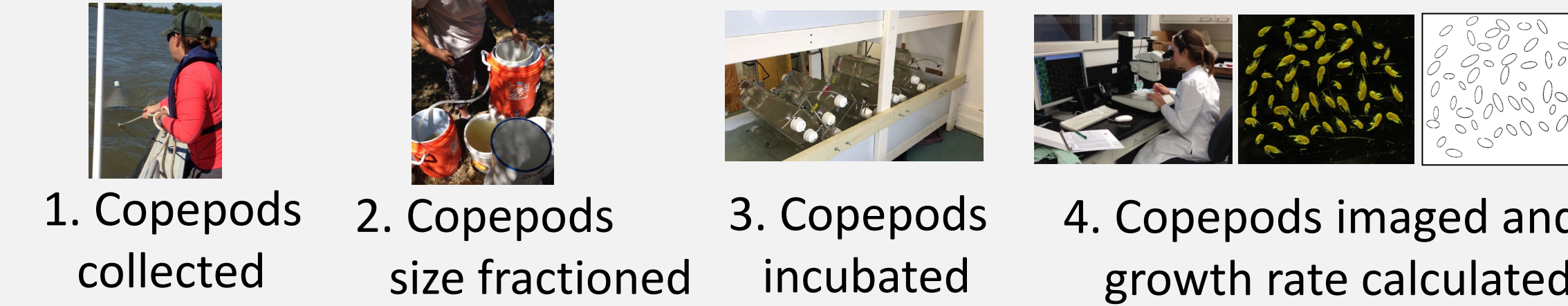
adult female *P. forbesi*



SITE LOCATIONS & METHODS



GROWTH RATE EXP METHODS



CONCLUSIONS TO DATE

- We detected nutrient-depleted water masses
- *P. forbesi* growth did not respond to changes in ammonium
- *P. forbesi* growth rates were low, but varied at all stations
- Chlorophyll concentrations were low
 - We may need to follow nutrient-depleted water masses longer to see changes in algal composition

NEXT STEPS

- Analyze zooplankton samples for species distribution, abundance, and life-stage distribution of *P. forbesi*
- Analyze eDNA and zooplankton samples to compare foods eaten by copepods with ambient plankton

REFERENCES

Gearty AJ, Ignoffo TR, Slaughter AM, Kimmerer WJ. Productivity of a dominant copepod in response to phytoplankton biomass and habitat type in the northern San Francisco Estuary. In Prep

ACKNOWLEDGEMENTS

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