

Phosphorus Movement in Lake Champlain Tributaries

Hannah Boudreau



Map of Total and Available Phosphorus

Sampling and Extractions

- ❖ Sampled 8 sites of hay, corn, wetland, and forest area for a total of 32 sites
 - ❖ Took 5 samples in transects along the streambank and 5 sample several meters into the field for a total of 320 samples
- ❖ Randomized selection of 6 samples from each site were taken to conduct several extractions to determine total, inorganic, organic, and type of organic phosphorus as well as Carbon- Nitrogen analysis
 - ❖ Includes the Lachet extraction, microwave digestion, ICP preparation, and enzyme dilutions
- ❖ The goal was/is to better understand the phosphorus distribution across multiple land uses

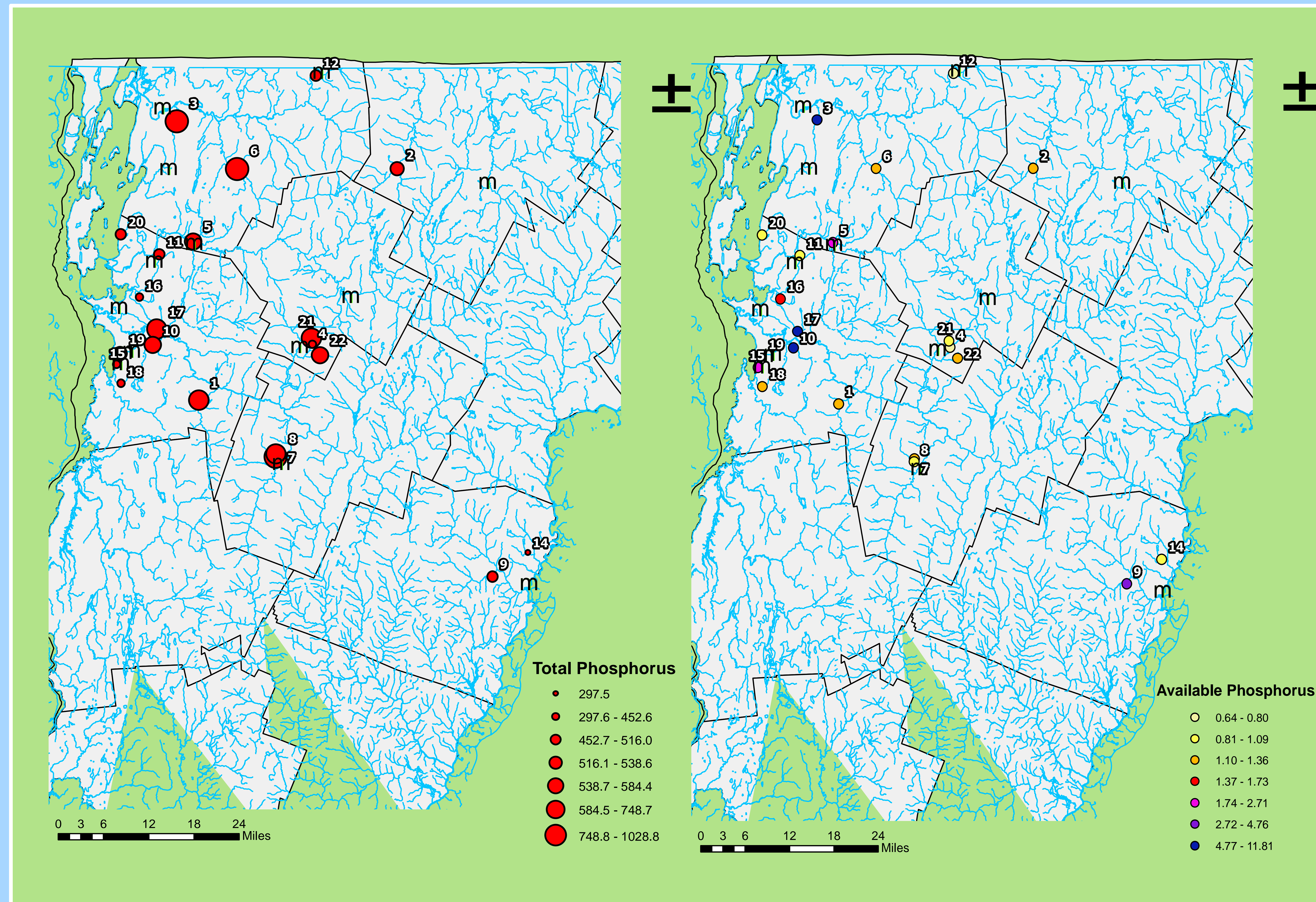
The graphic below displays the varying levels of analysis of organic and inorganic phosphorus

Microwave Digest ICP, total

Lachet, available/organic

NaOH-EDTA ICP, total organic

Microplate/enzyme reactions, type of organic



Mapping Total and Available Phosphorus

- ❖ Obtained data from the RACC high school initiative that sampled along streambanks, riparian zones, and into the field in multiple streams throughout Vermont
- ❖ Cleaned up the data (identified the phosphorus data that were streambanks), converted this excel spreadsheet to a table ArcMap would understand, located region of stream where sampling occurred in Google Earth to attach coordinates to these areas
- ❖ The final step was joining the table to the coordinates to output the above map of varying level of phosphorus that match with the area the sample was taken
- ❖ The goal was to compare this existing RACC data with the data acquired over the summer, however, that research is ongoing

Funding provided by NSF Grant EPS-1101317