

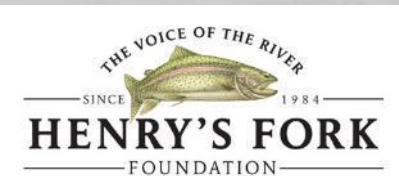
Evaluating the effect of nutrient enrichment on the Upper Henry's Fork River

Jack McLaren

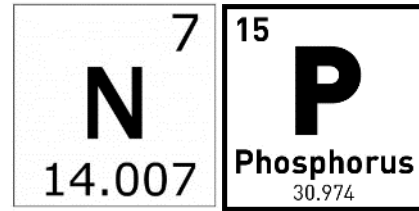
Utah State University Department of Watershed Sciences

Presentation for the Henry's Fork Watershed Council April Meeting
9 April 2019

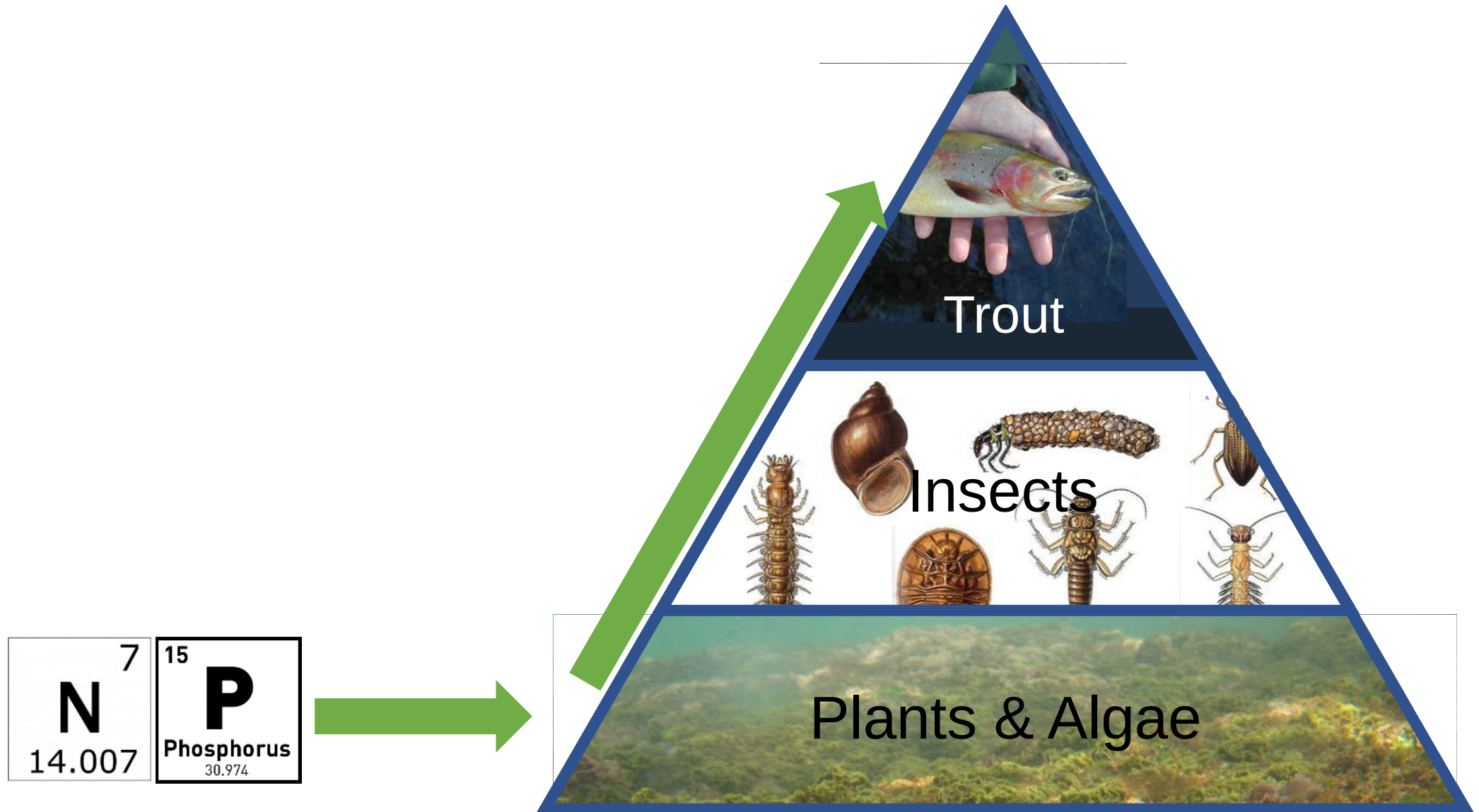
Advisors: Dr. Phaedra Budy, Dr. Soren Brothers



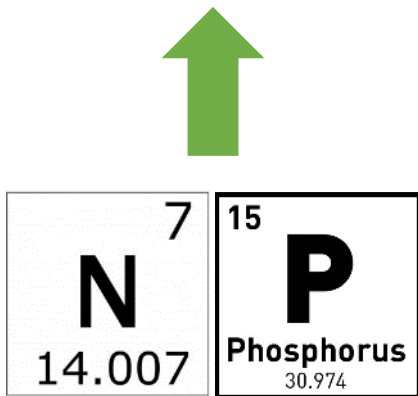
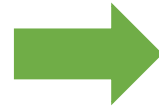
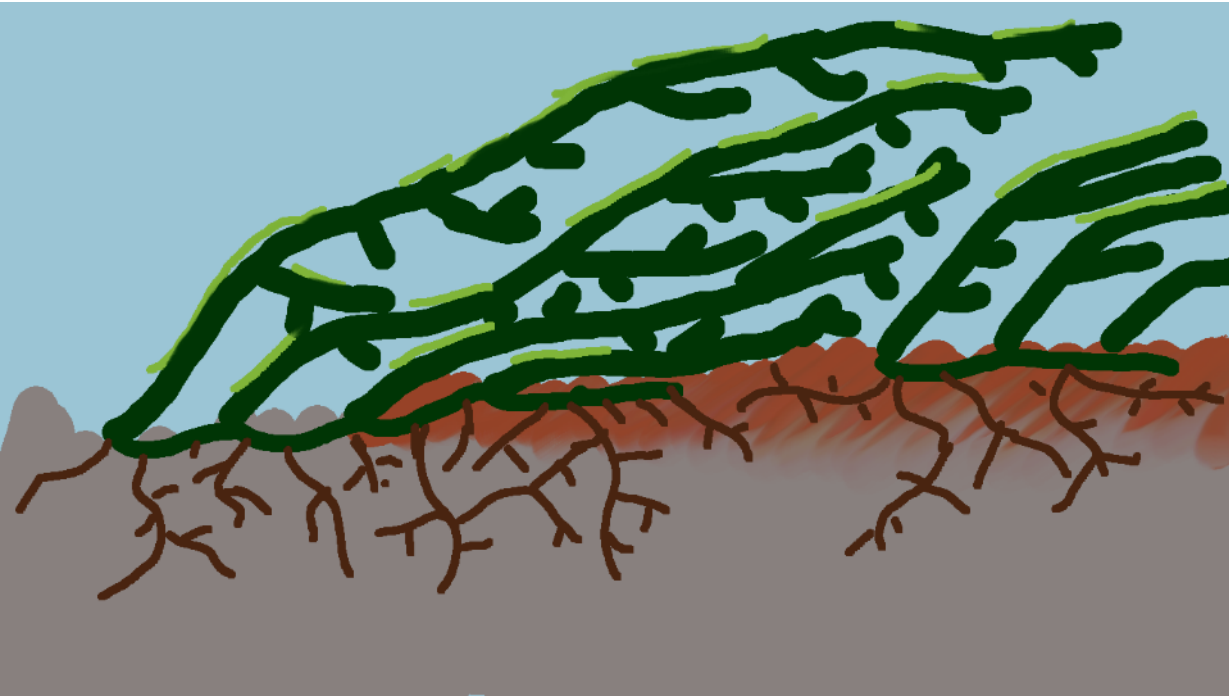
What are nutrients, and why do they matter?



Nutrients matter for stream ecosystems

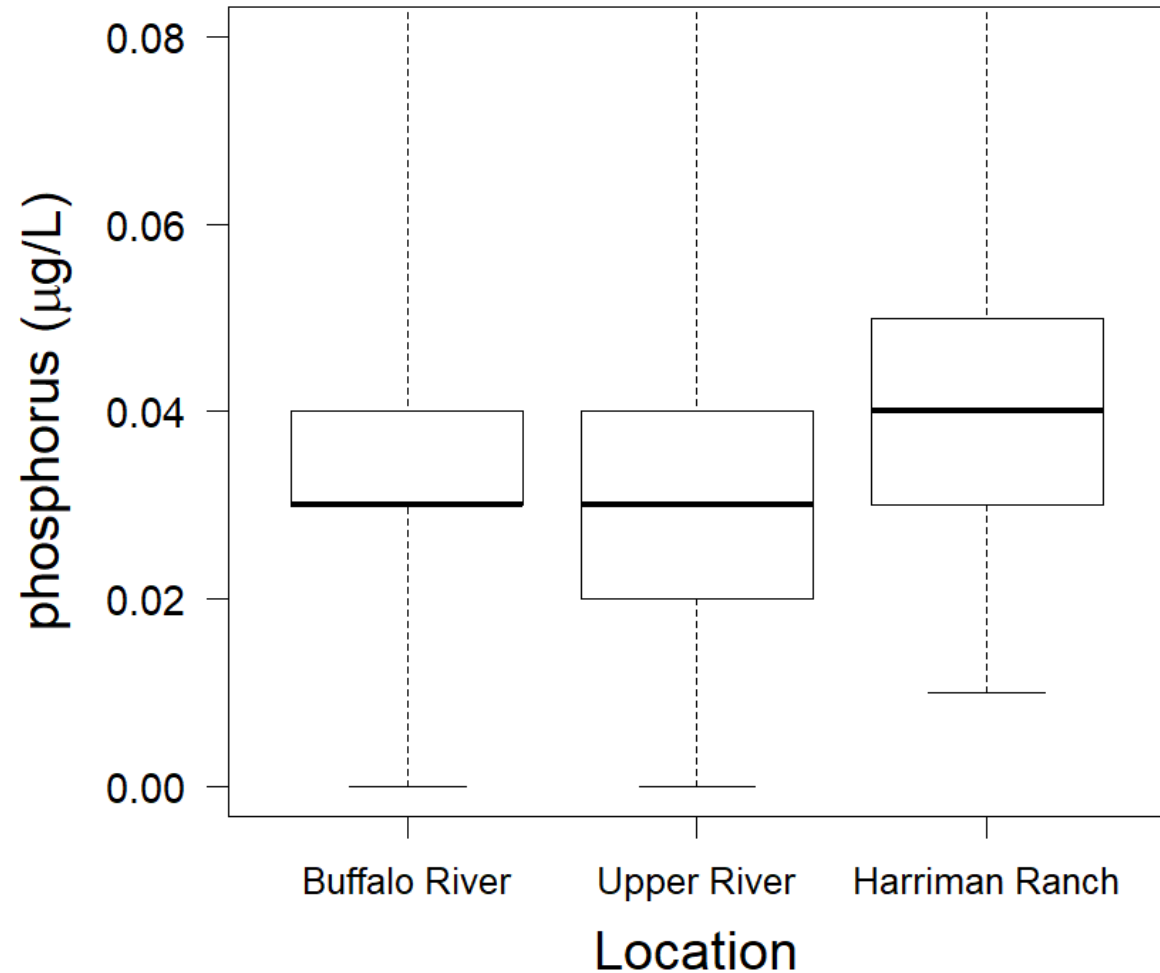


Nutrients matter *a lot* in the Henry's Fork

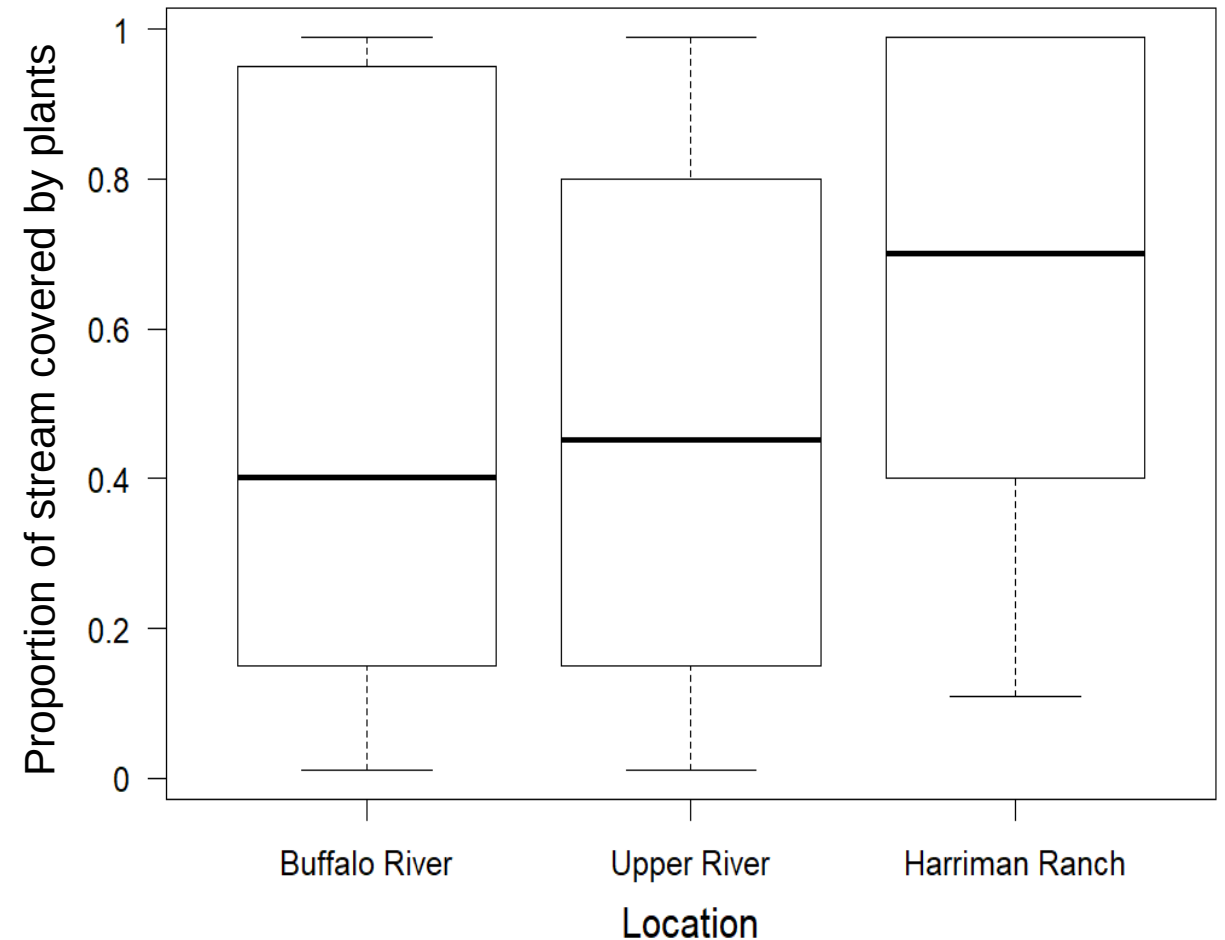


The Upper Henry's Fork is short on nutrients

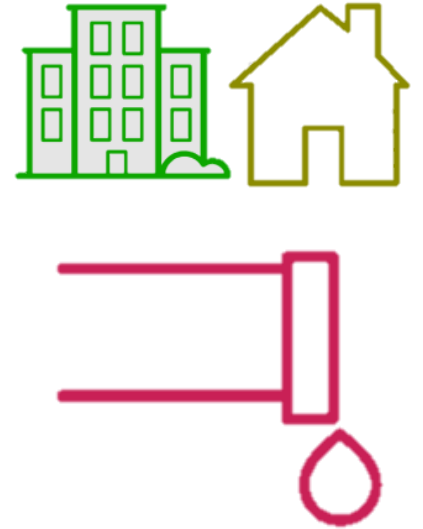
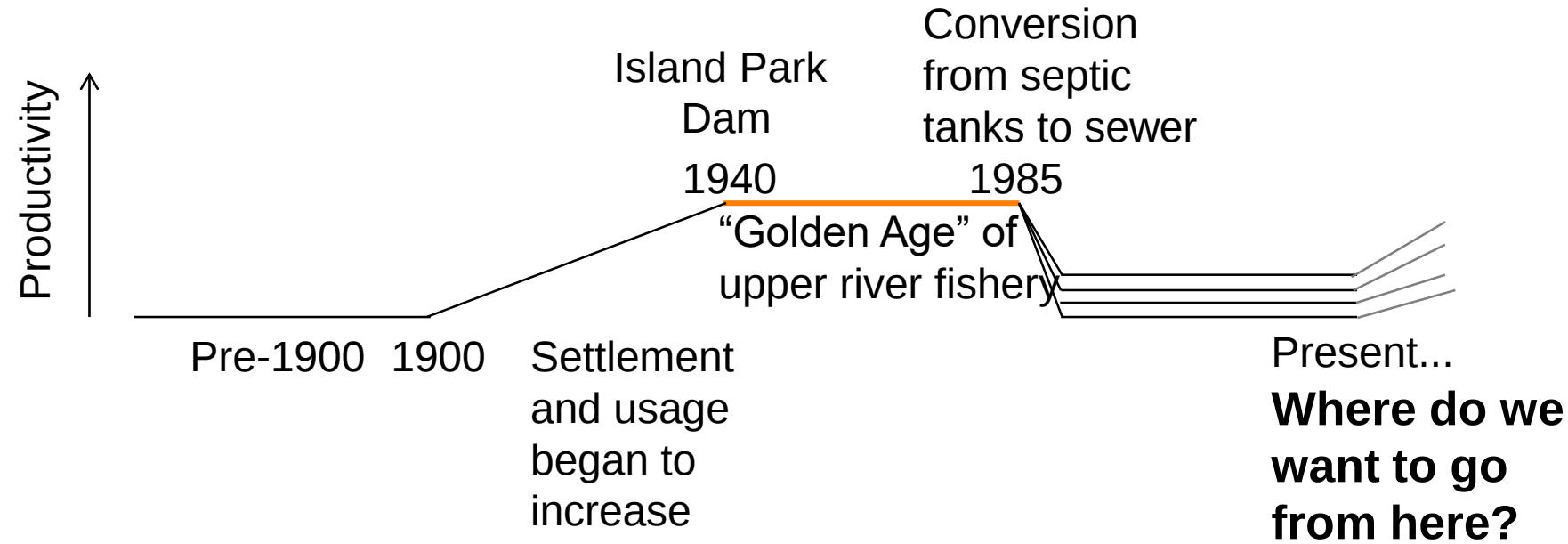
Phosphorus concentration by site



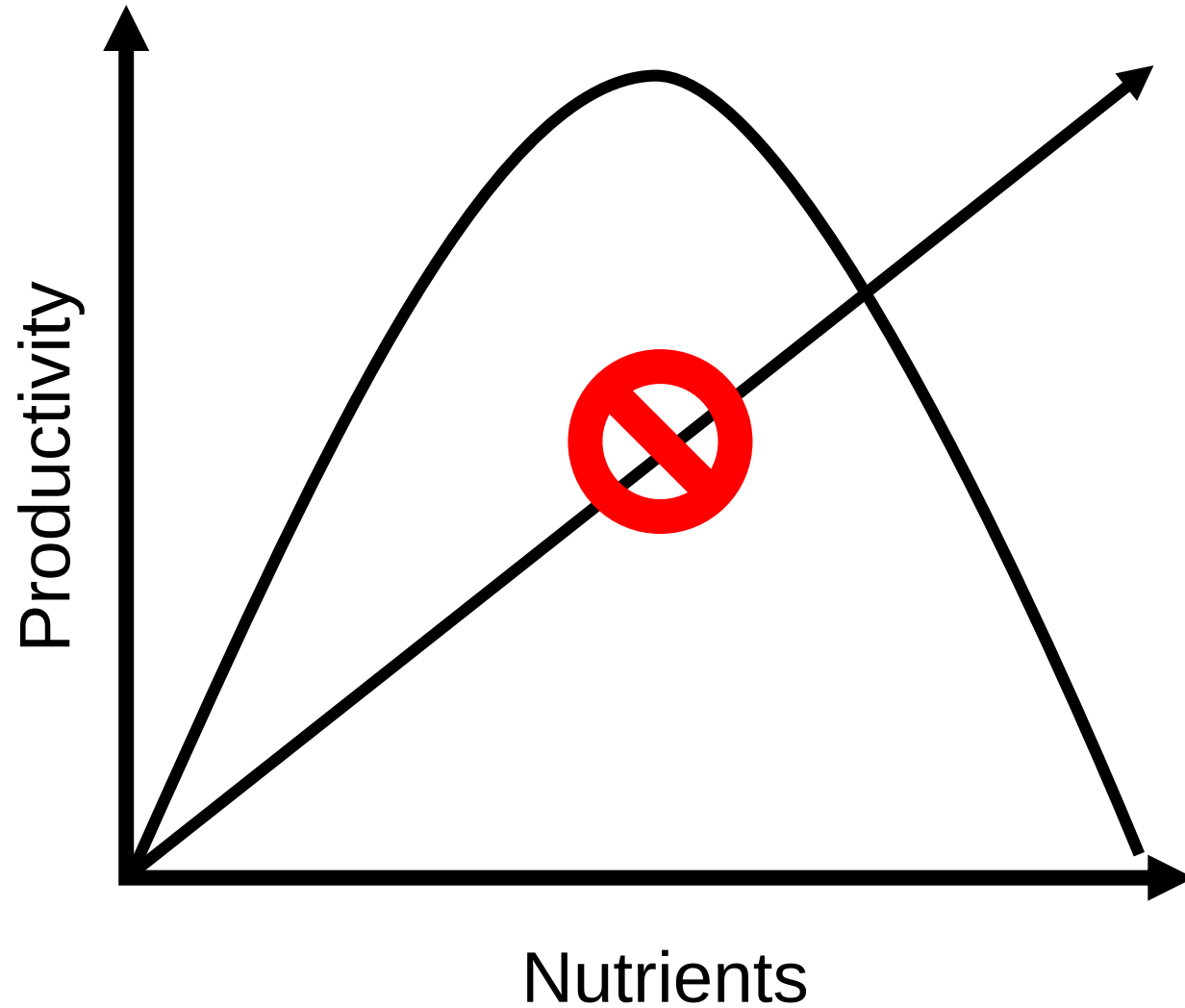
Plant cover by site



Exciting opportunity for improvement!



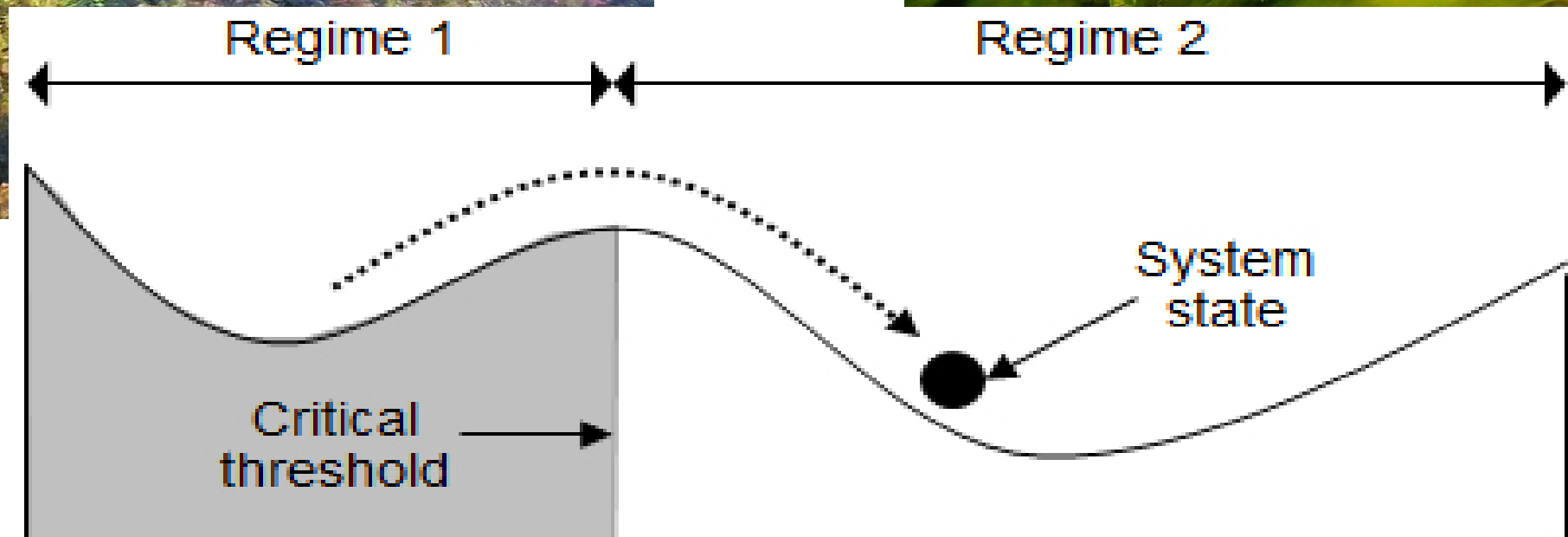
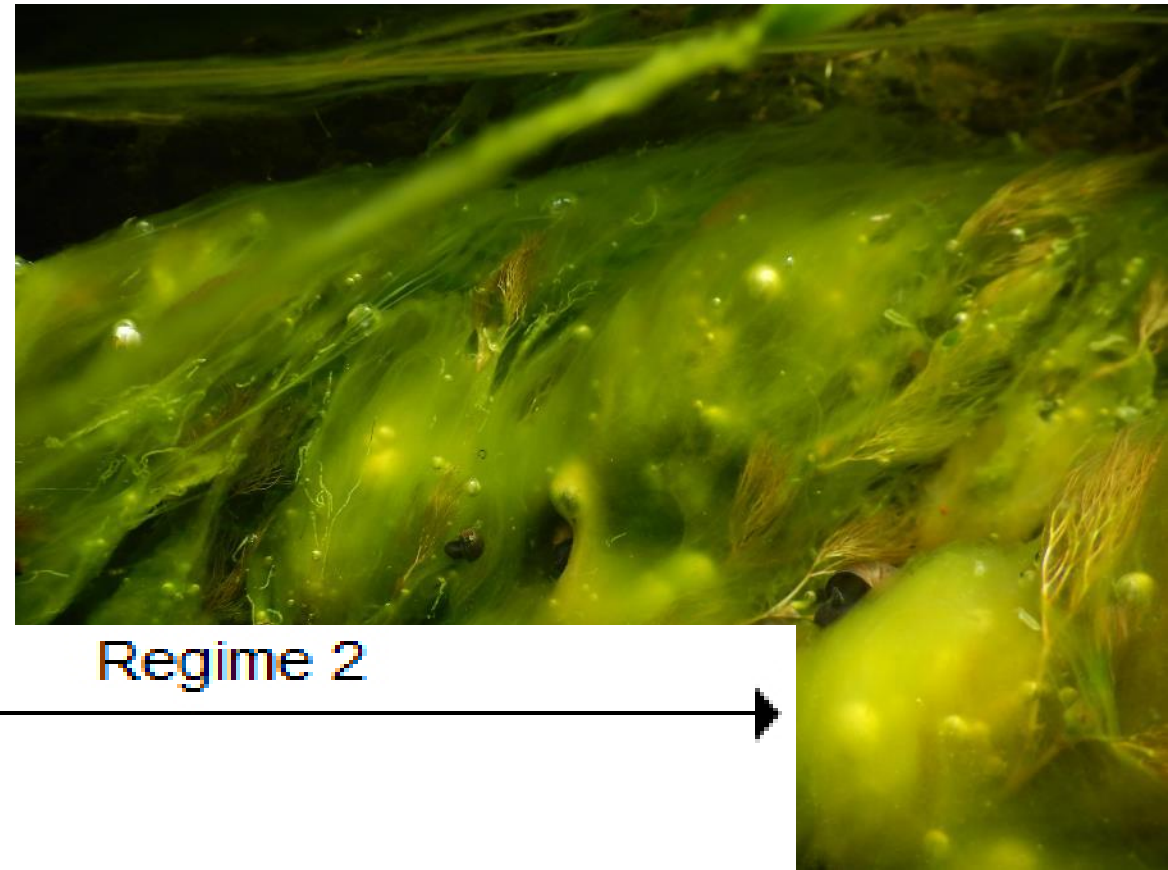
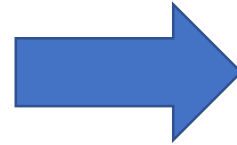
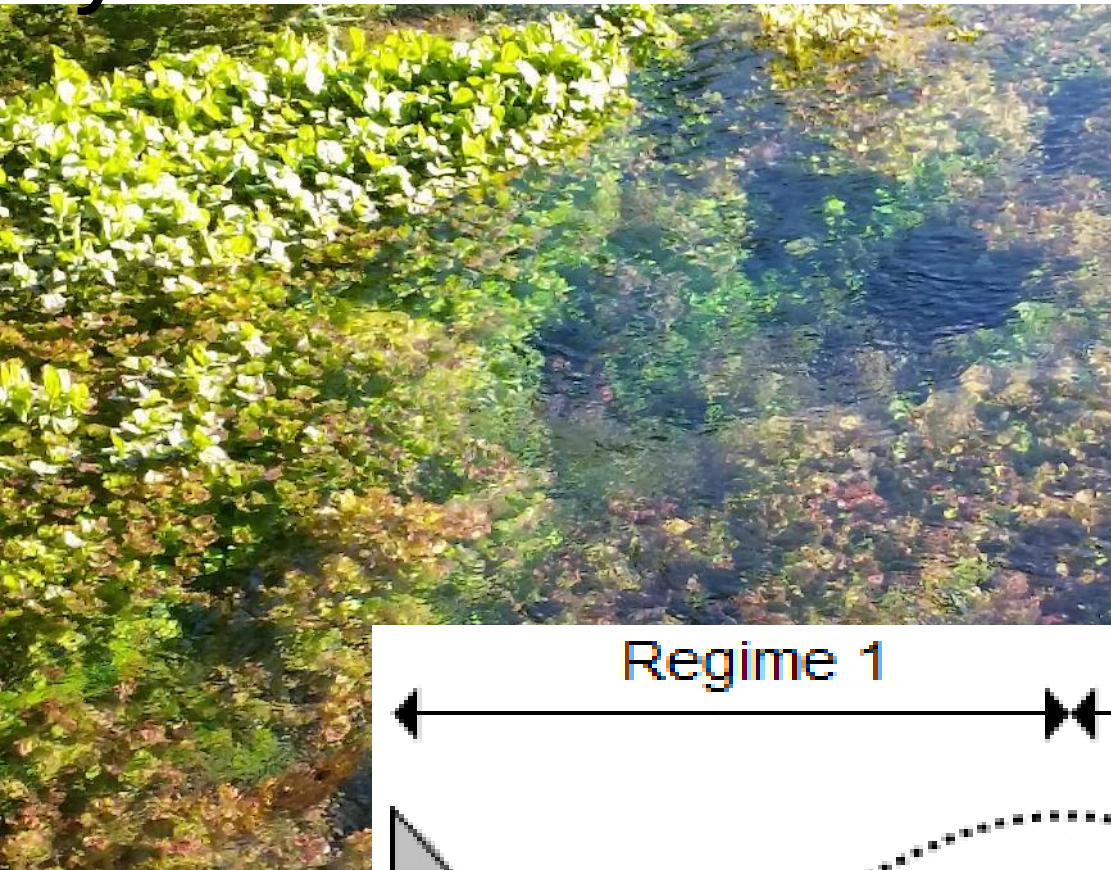
CAUTION: Paradox of enrichment



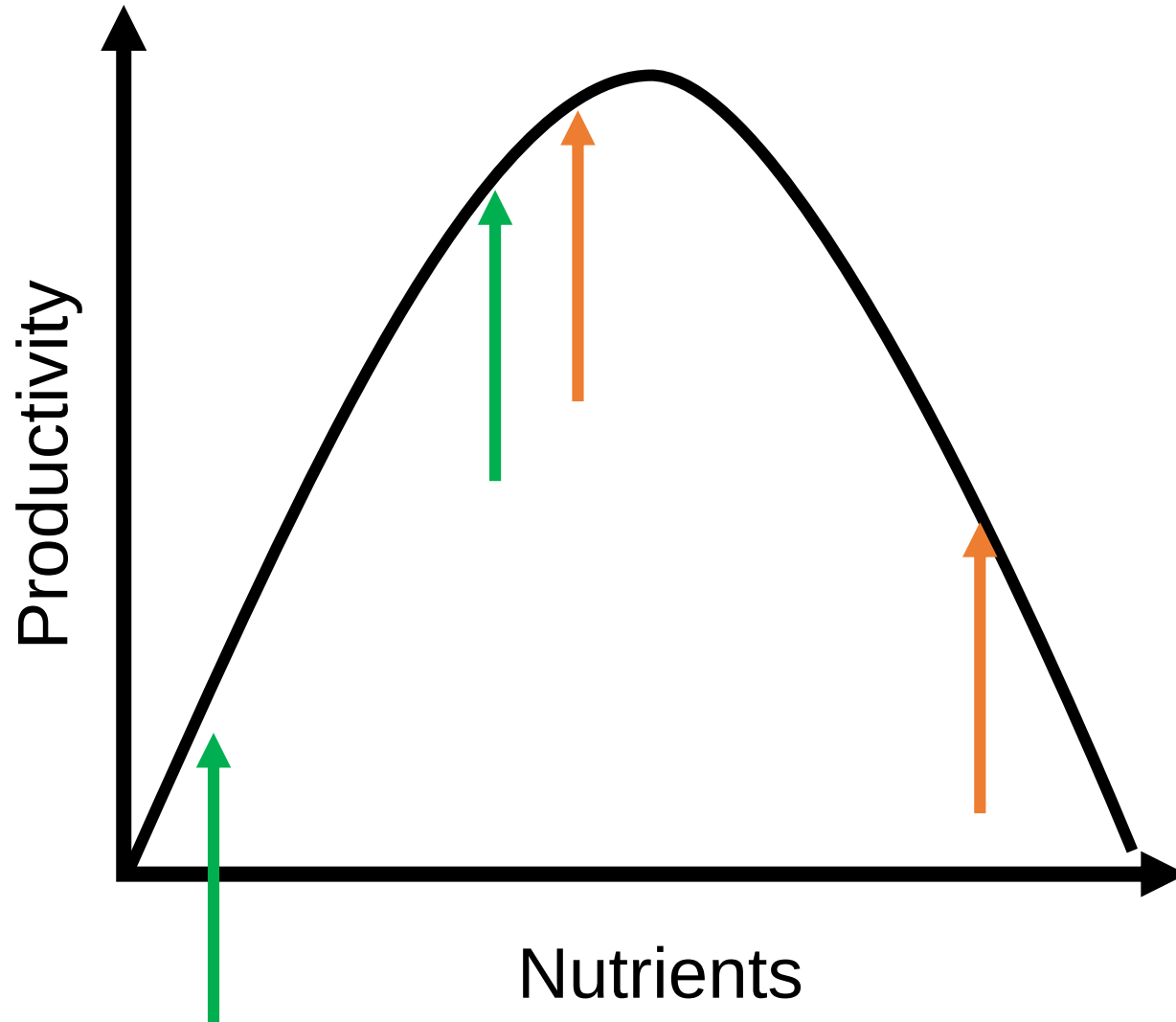
CAUTION: Paradox of enrichment



CAUTION: Irreversible change & self-sustaining cycles



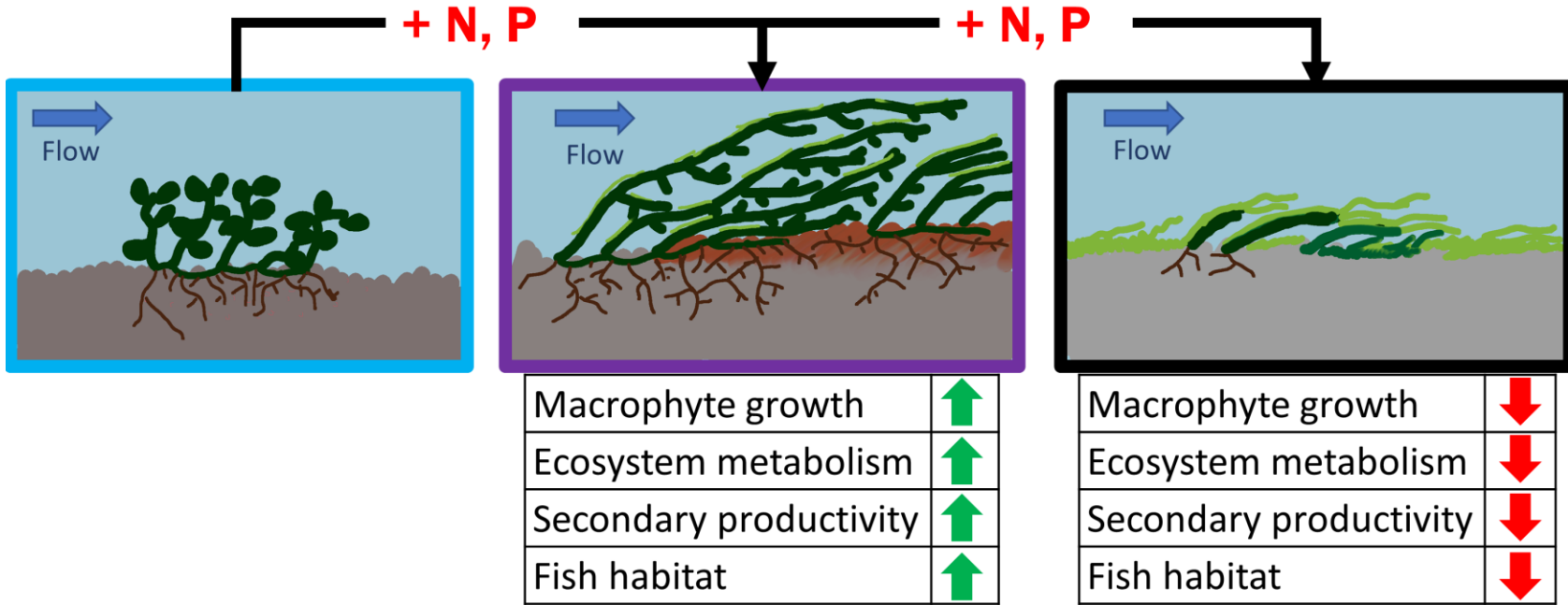
CAUTION: More study needed!



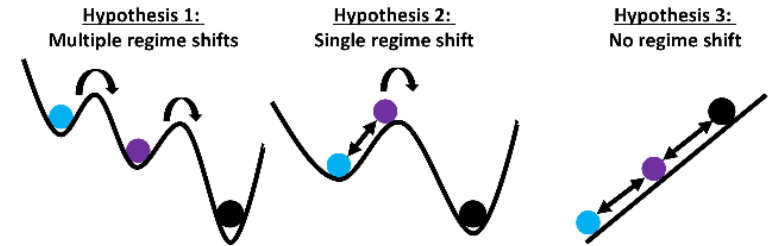
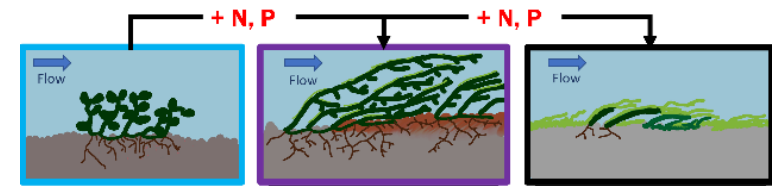
PROJECT OBJECTIVES:

1. Where's the sweet spot in the Henry's Fork?
2. What are the consequences of nutrient addition for **plants, bugs, and fish**?
3. If we go too far, can we hit "undo"?

Question 1:
What are the consequences of nutrient enrichment?
Where's the sweet spot?

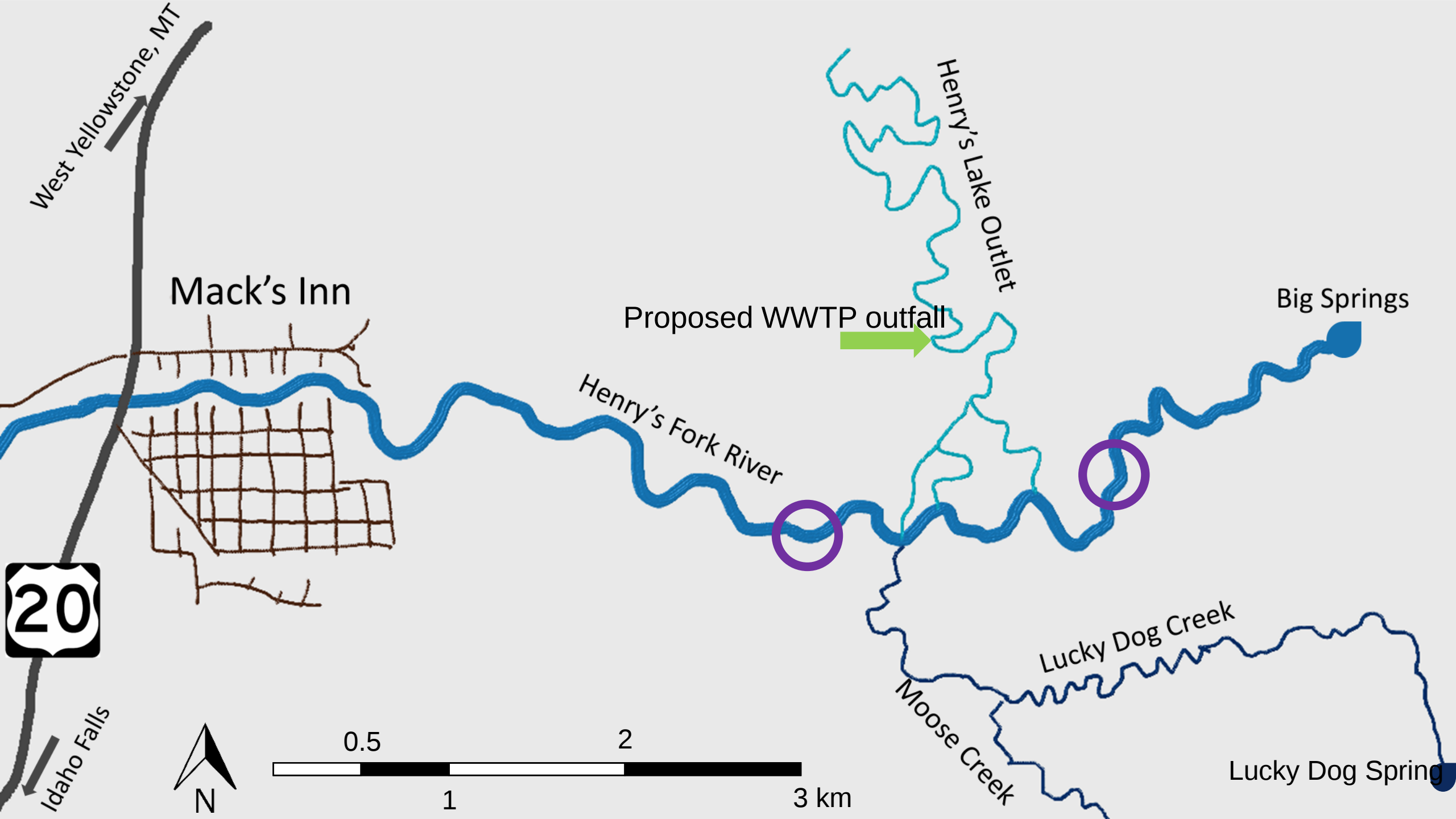


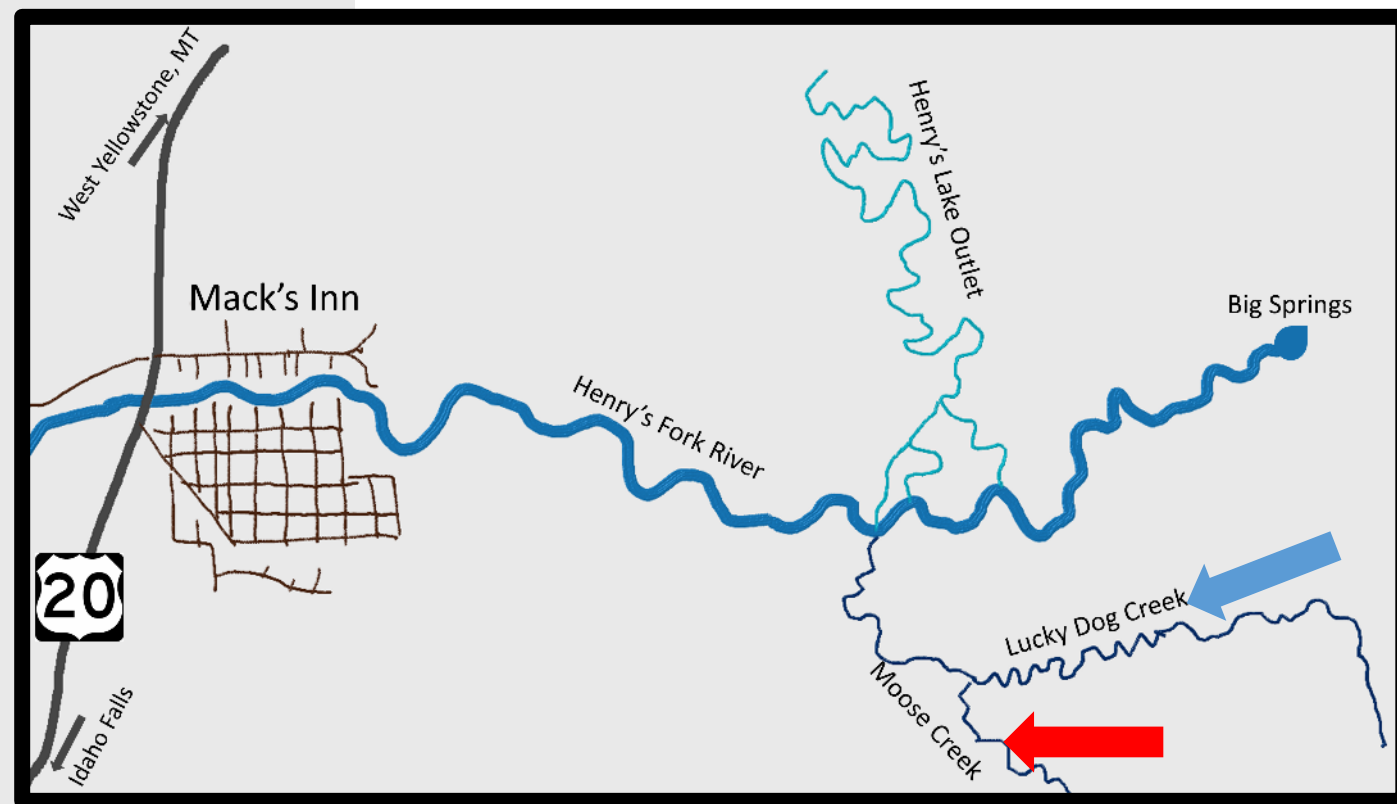
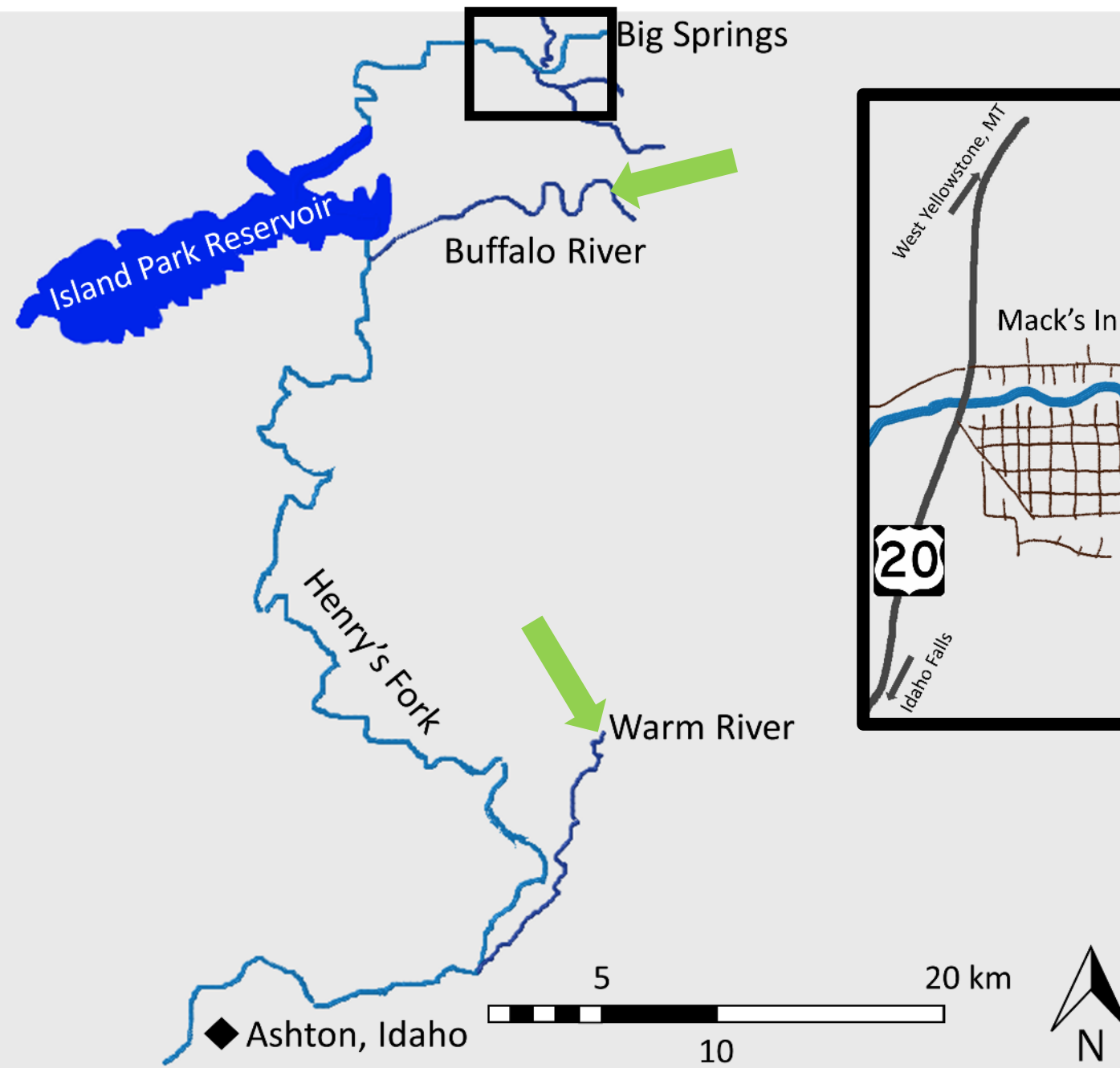
General Approach



1. Compare different sections of the Henry's Fork
2. Add nutrients to tributaries of the Henry's Fork

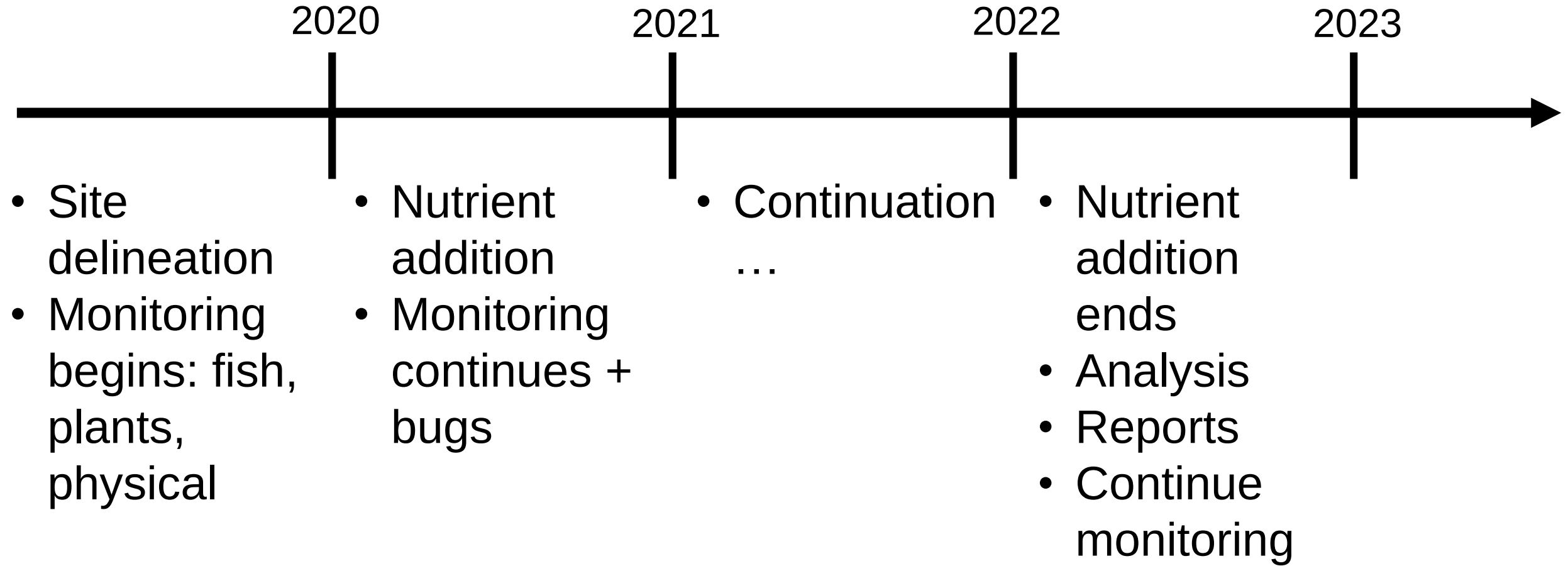
- Study effect on plants, bugs, fish
- See if we create self-sustaining cycles
- Package results in useful format for managers and stakeholders in the Henry's Fork Watershed





-  Dissolved P and N addition
-  Control stream
-  Kokanee carcass addition

Timeline



Questions?

