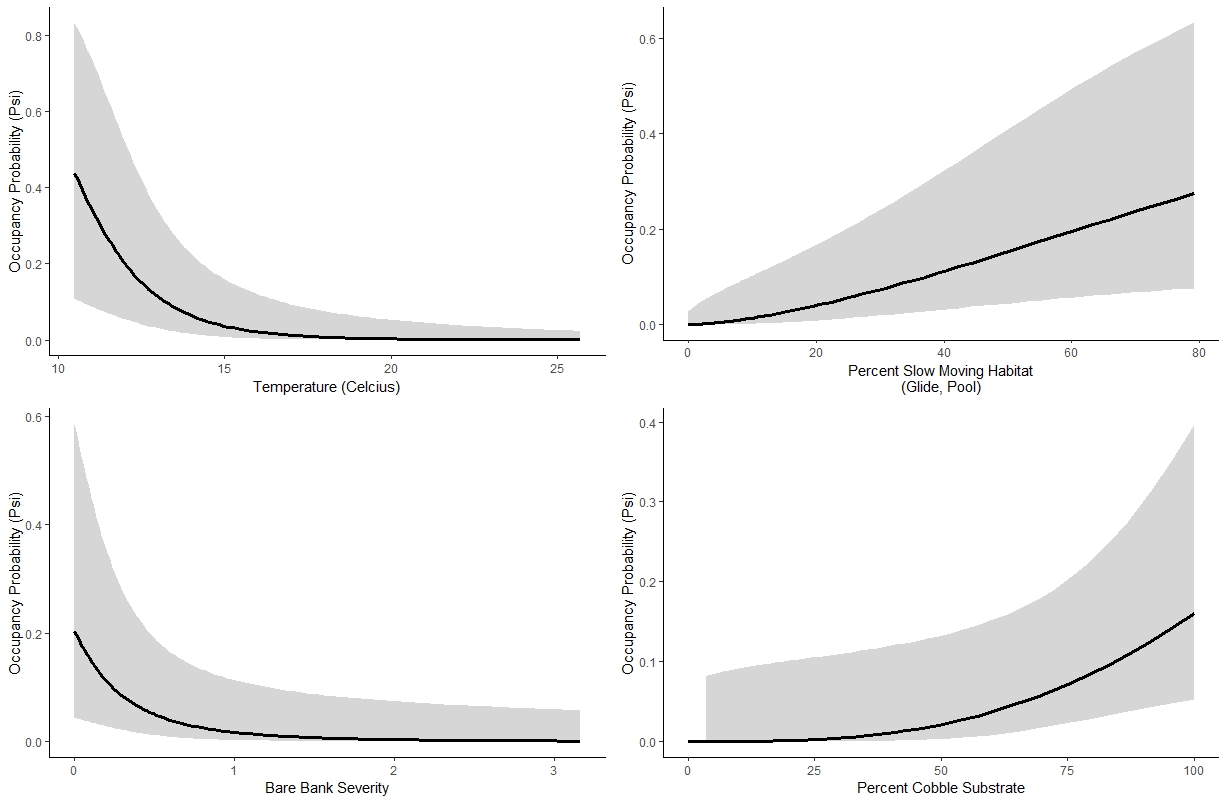
**Name: \_Brett Kelly\_\_ Date: \_09/03/2019\_**

1. General Info
   1. Proposed Title: *Occupancy and detection probability of stream fishes in the Iowa Driftless Area*
   2. Likely coauthors: *Dr. Michael Weber, Michael Siepker*
   3. Proposed journal (1st choice): *Ecology of Freshwater Fish*
   4. Proposed journal (backup): *North American Journal of Fisheries Management*
2. The overarching question of this paper is: *What biotic and abiotic factors influence fish presence and detectability?*
3. Which is important/interesting/unresolved because (1-4 reasons)
   1. *Rivers and streams have greatest number of state listed taxa despite only covering 1% of Iowa’s landmass*
   2. *The Driftless Area ecoregion is a unique area only to 4 Midwestern states, and is in stark contrast to the rest of Iowa in geology, and fish community*
   3. *Brook Trout, our state’s only native Salmonid, habitat preferences need to be better understood to prioritize future conservation efforts*
4. To answer this question/explore this topic, I addressed the following objectives: (NB you can have more or less than 3 objectives, but I recommend 2-4)
   1. *Observe fish presence and relative abundance at randomly selected stream segments*
   2. *Characterize physical habitat variables at time of sampling*
   3. *Assess thermal condition of streams across seasonal changes*
5. I addressed these objectives: (use list/bullet points below)
   1. In: *Tributaries of The Upper Iowa, Yellow, and Grant-Little Maquoketa HUC 8 watersheds in Winneshiek, Allamakee, and Clayton County Iowa*
   2. With the following focal/model species/model system: *Brook Trout, Brown Trout, and other native stream fishes*
   3. And the following approaches: *standardized backpack electrofishing surveys coupled with habitat characterization and long-term instream temperature monitoring*
6. Each row of data in my dataset is a: *unique “site” at the stream segment scale*.
7. For my analysis, I want to test: *correlation of fish presence to habitat covariates*
8. My response (y-axis) variable is: *probability of occurrence*
9. My predictors (x-axis/colors/shapes on the graph) are: *habitat variables/covariates*
10. I replicated this across multiple *streams and watersheds (n=144 streams, n=3 watersheds)*
11. I think I will need to analyze these data using an *occupancy analysis in package RMark using logistic regression models*
12. I anticipate I will get a final figure(s) that will look like this
    1. (actual figure from my 2018 data for Brook Trout, *Salvelinus fontinalis*)

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