Explicit model of ecosystem behavior #1

Eutrophication will lead to changes in relative abundances of primary producers in a predictable way.
Explicit model of ecosystem behavior #2

Eutrophication will shift N:P ratios of primary producers towards a taxon-specific “Redfield ratio”
Explicit model of ecosystem behavior #3

Eutrophication will shift seagrass $\delta^{13}C$ towards more negative values because of increased discrimination against $^{13}C$ in low light conditions.
Not-so-Explicit model of ecosystem behavior #4

Eutrophication will cause some kind of change in $\delta^{15}$N of primary producers

![Graph showing the relationship between Seagrass Leaf $\delta^{15}$N and Progressive eutrophication or light reduction.](image)

- Anthropogenic processed N
- Anthropogenic fertilizer N
- Decreased N uptake relative to supply-greater fractionation

Progressive eutrophication or light reduction
Control

Treatment

25cm x 25cm randomly placed for benthic coverage

25cm x 25cm set sites for benthic coverage

10cm x 10cm randomly placed for canal wall coverage

Elemental ratio, stable isotope sampling
We will also specifically identify and count the conspicuous fish and invertebrates along each transect