Chart, histogram

Description automatically generated

Annual means of energy use for all census periods, on longterm controls (CC), exclosures 🡪 controls (EC), removals 🡪 controls (XC). Each line is a plot.

**Chart, histogram

Description automatically generated**

Predicted values for a GAM fit to the energy use data by treatment. Primarily for visualization.

Our expectations for this experiment are different from what could happen with this data!!!

Graphical user interface, chart

Description automatically generated

Ratio of EC and XC to CC over time, with se from a GLM (for now).

Contrasts to look at in the real data:

**For long-term controls (blue):**

* Does the estimate for d match c or not?
  + **Tells us whether the compensation effect documented in Ernest (2001) and Thibault (2010) persisted after the 2010 changepoint.**
* How does the estimate for d compare to for b?
  + Compares degree of compensation pre-pb to now (with pb still in the assemblage).
* Does the estimate for d match e?
  + Because nothing has changed about our manipulations for the **long-term** plots, we don’t expect there to be a shift after the manipulations.
  + However, if there *is* a shift, that becomes our new baseline for the compensation effect when we look at the new manipulations.

**Comparing treatments (colors):**

* Do the estimates for the two treatments converge in following the shift (panel e)?
  + If they do not, suggests some legacy effect differentiating the long term from the new exclosures.
* Where do the estimates fall in e?
  + i.e. do they both approach controls (estimates approach 1), both underperform controls (estimates <<1), or behave differently?

Chart

Description automatically generated

Annual means of PB abundance, by plot and treatment.

Chart, histogram

Description automatically generated

GAM fit of PB abundance by treatment.

Chart, histogram

Description automatically generated

Total number of PB caught in each time period, with estimates from GLM.

Contrasts to look at:

* Is PB declining?
  + If PB declines and there’s no compensation, compensation was contingent on PB
  + If PB declines and there’s **still** compensation, **who is doing it?** This is an update to the framework of PB being a krat analog in ways that other species can’t do. Nobody new has come in in large numbers, so if this happens it has to be someone who was already present changing their role.
* Post-switch, does PB on changed plots converge to PB on longterm plots?
  + In keeping with testing whether the longterm and new diverge.
  + If they don’t, and the plots diverge in E, this may be an explanation.
  + If they don’t, but the plots **do** converge in E – again, we are asking who stepped up.

Chart, histogram

Description automatically generated

Chart

Description automatically generated

Difference in smooths from the GAM. These are less informative for this project than they were for Erica’s, because we care about not-complete-matching as much as we do overlapping-0-difference. However, it’s nice to be able to use the continuous version to at least help us confirm that we’re not grossly distorting things by breaking things into eras and fitting means.