* *Can trophic position data tell us something about how predators are influenced by bottom up effects (prey availability, environmental condition) that we can’t learn from other methods?*

Should we reduce the number of models?

* Lots of legitimate alternative
* Strike balance of including what is important while also being aware of robustness of the candidate model set.
* How consistent the predictors are -- should include a table of all the tested models
* All possible 3 covariate models – sst and pdo
* Really cool – archival materials to look back through time
* More prominent for a way to document ecological
* Ecology – want big ecological story, g- should be an example paper for that type of analysis
* How do you sell that??? Very rigorous, lays out a bit of a template, what are some of the key things that could be commonplace –
* Sarah – you could make the intro about ecological question – we also used this really cool approach – we didn’t bring up the stable isotope stuff until the very end (either put a paragraph about it in the intro about AAs or don’t mention that you tried to do it—people assume stable isotopes are perfect but the tracer, what the food web is doing and what the environment is doing
* There is a lot of interest in trying to look back – but to do that you need to think about a lot of different things and confront methodological challenges and technical and mindset things that need to be done – think through these issues
* SELLING IT in the cover letter – okay if you are going to do this work these are the things you have to think about
* Ecological monographs instead of Ecology – ***how you do these retrospective analyses***  creeping up on page lengths??
* Examples of why we would want retrospective analyses – including why it is important in puget sound with respect to harbor seal—in order to do that we have to think about envriornment, food web dynamics and chemical aspects of the tracer of choice – should constitute an article... could maybe run it past cathy on whether this would constitute an artcle – Sarah careful editing can cut
* Overview of conceptual diagram of the details
* Equation parameterization – go with convention or go with mathematical substane
* Cover letter—we think this will be a model for how to do retrospective analyses of CSSIA

Stable isotopes are the main way we get at we need to know baselines and what the change through time has

Trophic position estimates calculated from stable isotope data represents a weighted average of consumed and assimilated prey sources (Martínez del Rio et al. 2009).

* How to do food web retrospective analyses
  + Bottom up forces impact foodwebs (marine)
  + Bottom up forces are drastically changing, particularly in recent years
  + To understand ecological responses to bottom up impacts, we need long time series of data
* There are a lot of valuable approaches for understanding foodweb changes
  + Stable isotopes are useful for retrospective analyses, allow use to derive ecological information from archival specimens
  + Stable isotopes are tracers but are sensitive to physiological and environmental differences
  + Deriving information from stable isotope data requires a lot of considerations
    - Baseline (AAs)
    - Tissue turnover
    - Beta
* Delayed trophic responses
  + Predators and food webs do not respond immediately
* Description of the system and predators – importance of retrospective analyses in the Puget sound / Washington
* In this study we aim to identify trophic position results of a marine predator in response to changes in ocean condition and prey availability
  + We create a dataset from museum specimens
  + We consider baseline change, TEF, beta, tissue turnover and