**DRAFT - Workplan for uncertainty analysis**

Part 1 : complete the gap-filling analysis

1. Dataset list – map coding procedures:
   1. what datasets do we have an automated gapfilling method for within ohiprep
   2. what datasets do we have an automated gapfilling method for within ohicore
   3. what datasets would we need to generate it for
   4. how many of the above were already included in the initial gap tally Julie did
2. Get equation to tally proportion of score form gap-filled layers
   1. Calculate the score per dimension and then per goal (need layers to be tagged by their contribution to score, when it’s not dimension level, it needs to be ad hoc – that may be too complex to do)
3. Adding gap tally from more layers – which ones get closest to 100% fastest:
   1. If I have the equation in place, I can calculate the % contribution to score of different layers and use to prioritize layers to add
   2. Once chosen, make scripts to tally remaining gap-filling

Part 2 : sensitivity test to determine impact of gap-filling

1. Replace each score from real data with the score obtained with the gapfilling procedure (of course removing that datapoint from the mix: jackknife style), the real-estimated creates a distribution – I can compare the sd across different layer types
   1. If I don’t have time to do it for all, I could do it for some, and use it as a reference for error by gap-filling type: which type generates most error when gapfilled?
   2. (or by region: are gapfilling assumptions more flawed in certain areas? Less likely to be reliable as a general rule)
   3. map (by datalayer/goal?) score change w gapfilling
2. Additional layers that we should test:
   1. Values from a fitted model (e.g. habitats)
   2. Values from other models (e.g. CMSY: use bootstrapped CIs, what about the plume model data?)
   3. Values from a proxy (e.g. artisanal opportunity need and pppc-pc-GDP are significantly correlated, pesticides and fertilizers too, pop and trash isn’t well correlated)
3. What about the accumulation of error?
   1. Saturation curve of error as the % of gap-filled layers increases

Part 3 : Create ‘pedigrees’ : based on % of original data and on trust in models

1. Generate rules to rank the goodness of goal models (considering each dimension of a goal is a model) – assuming perfect data (the assumption is that we know the behavior of all models, we didn’t actually test them all with random data – but probably we’ve worked with them long enough that we’re good, except maybe for L&E and NP)
   1. Model Specification: model is generally a good proxy for the attribute it’s intended to capture
      1. Model measures directly the variable of interest (eg FIS and MAR measure harvest, while LSP uses MPAs as proxy)
      2. Model relies on well-tested science (eg ICO does, NP doesn’t)
      3. Model shape (mainly re-scaling): rate of change compared to reference point is truly linear (eg ICO, SPP, HAB probably not true)( also among components: softbottom vs mangroves)
   2. Model Parameterization:
      1. Refpoint choice based on well-documented reasoning (eg for FIS, choice of ref point subjective but justified, but TR refpoint is spatial for lack of better option)
      2. Weights (if any) based on clear rationale
   3. Pressures – any key pressures missing? Do they truly apply to most regions?
   4. Resilience – (can’t think of anything other than model specification)
2. Rules to rank the goodness of data:
   1. Not gap-filled and trusted
   2. Not gap-filled, but not trusted - criteria to establish that:
      1. sudden peaks (trash)
      2. missing values that may not be true 0s (catch data)
      3. patchy spatial coverage (e.g. habitats) -> in cases where data used to gapfill, how to combine that w gapfilling score?
      4. Outdated (e.g. Trujillo sustainability) -> in cases where data used to gapfill, how to combine that w gapfilling score?
   3. Gapfilled -> based on parts 1 and 2 (can be either % of gapfilled data, or a score based on the sensitivity analyses)

NOTE: some aspects pertain to whole framework, we will not bother with them, e.g.:

* errors in rescaling pressures vs resilience
* errors in weighting dimensions, such as role of biodiversity in sustainability
* lack of risk-based weighting (i.e. certain pressures can be potentially more catastrophic than others)

Part 4 – put it all together

1. How to combine data uncertainty with uncertainty about the goal model?
   1. Present them separately for now?