**ROADMAP**

1. Work at the community level, not at the species level
2. We first focus on extinction debt
3. Identify species present in 2001 (2000, 2001 and 2002), and characterize each partition to include only those species which were present in all three years (so we are sure the species were present in the partition)
4. **GOAL:** Ask how biodiversity has changed over time (decline or stabilize) according to land use change.
5. To do so, we can estimate biodiversity metrics from the community for every studied period, and repeat the estimations separating long and short-lived species (using percentiles, to avoid sampling unbalance).
6. **First decision:** What level of analyses, partition or cluster?
   1. We can start by asking whether we can conduct the analyses at the partition level, including ecoregion as random effect to deal with geographic and climatic differences.
      1. Advantages: Habitats more homogenous, same sampling effort, higher sensitivity to land use change
      2. Disadvantages: Greater effect of stochasticity, which can make it difficult to properly define communities (e.g. species from different partitions of a same).
      3. We therefore need to characterize communities, i.e. ascertain whether the species representative of the community are all detected.
         1. Examine beta diversity (turn-over and nestedness) to ask whether partitions within an ecoregion have similar species composition.
         2. Use rarefaction curves
   2. If partitions from a same ecoregion differ in species composition, we can try to cluster them according to habitat similarity, and ask whether now species composition within partitions are more similar.
   3. If we still find differences, we should aggregate species from partitions of a same cluster, and estimate biodiversity metrics at the cluster level
      1. Disadvantages: A habitat decline in one partition can be obscured with the lack of change in the rest.
   4. An alternative is to classify communities with cluster analyses, pooling together partitions with similar species composition.
      1. This could make more sense to look at the rougher geographical scale (ecosystem/habitat cluster) because extinctions are more important when looking at a larger area
7. Check the comments of the reviewers of Nat Ecol Evol to assess other potential biases.
8. Estimate alpha biodiversity metrics at the appropriate level of analysis.
9. How to estimate land use change?
   1. Quantitatively or categorically (cluster analyses of the %habitat loss)?
10. Build database with raw data: cluster, ecoregion, partition as rows, alpha diversity metrics, land use,
11. **Models:**