**Random effects**

Look at times where data is limited

Delete data to see estimation ability and if random effects improves it

Try estimating assuming fixed effects for everything, but put a lower bound on sigmaR to limit funnel.

Estimate natural mortality

**Predation mortality**

Compare estimates of F and M2 between single and multi-species mode to see if they are confounded

Input M2 into single species model and compare estimates

Add starvation in, remove cannibalism to see how model responds

Include prior on suitability coefficients

**Convergence diagnosis**

Use TMButils::check\_identifiable to see what parameters are having a hard time converging

Jitter initial paramaters to see estimation

Look at gradients to see if its actually converged (If large, its not)

Do estimated values go to zero?

Are SE of the parameters really large?

Piner plot – profile nll components across one parameter.

**Presentation styke**

Less umms, more background