**decision.r**

**Purpose**  This function produces the decision table used to layout the impact of various levels of removals on the status of the population for the next year (and possibly 2 years).

**Version Control**  Likely several versions of this exist, but why would you use them???

**Required packages** None

**Locally Derived Functions** None

**Section 1**

Uses the model results and projections (projection.r must be run and added to the model results before this script can be used) to build the decision table showing the impact of various levels of removals on the status of the population. The population status is compare to any reference points (these can be user supplied or calculated from the data, if calculated from the data the USR is 80% of mean, LRP is 30% of mean) and the probability of being above a given reference point is calculated.

A table is created which has each row being the effect of different catches. In each row we have catch, exploitation rate, median change in biomass, probability of decline, probability of being above USR, probability of being above LRP. Optionally the projections 2 years out are included if vers == 1. The table is exported as tex (latex format) file automatically.

***Argument(s)***

1. model.out The model run results
2. bank The bank of interest, currently only GBa and BBn are modeled/possible
3. mu Exploitation rate used for the future catch scenarios in the decision table.
4. pr The quantiles used for the second year projections (only used if vers ==

1). Default is seq(0.1,0.6,0.1).

1. vers Which decision table to use. Default is version 1 includes the catch

scenario projections, 2 excludes this.

1. post.survey.C The catch from after the survey until the end of the calendar year.
2. yrs.ref.calc The years to use to calculate the reference points (only used if refs =

'varied'). Default = missing which will used all years in the calculation (again only if refs = 'varied'). If specified this should be entered as something like 1:10 which would use year 1 to 10 to calculate ref points.

1. refs Upper and lower reference points. Currently only valid for GBa. Default

= "varied" and are calculated from the data (see code for details). Otherwise a numerical value is needed for the LRP and USR.

1. yr The final year from the model(not the projection year). Default =

as.numeric(format(Sys.time(), "%Y"))-1, i.e. last year.