

## Retrospective analyses

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### 1. Current operating model retrospective analysis

The current (2010) RC operating models (“original variant”) for all five super-areas are re-fitted to set of data series where progressively more recent data are excluded for the minimization. The rationale is to see what impact more recent data have on the final assessment, and to see if there are any obvious trends over time. Here we show results at both the super-area level, as well as combining the biomass values over all five super-areas to produce an area-aggregated biomass trend. The assessment examined consider data up to 2009 (i.e. all data), 2008, 2007, 2005, 2002, 1998 and 1994.

Figure 1a reports the estimated  $B_{75}^m$  trends for each of the five super-areas for a range of analyses where each analysis removes progressively more recent data from the model fitting procedure. Figure 1b also reports comparative trends, but where the biomass values have been summed over all five super-areas to give a resource-wide perspective. Figures 2a and 2b are similar to Figures 1a and 1b, but here the biomass trends are shown as  $B_{75}^m/K$ , i.e. relative to their pre-exploitation levels.

Figure 3 reports the estimated recruitment trends for the retrospective analyses (1980+ shown).

Though a variety of retrospective patterns are evident in these plots, given that the overall biomass over recent decades is dominated by the contribution for Area 8, it is patterns there that would be of most importance.

Figure 1a:  $B_{75}^m$  trends for each of the five super-areas for a range of retrospective analyses. [Note the trends for “all data” and “up to 2008” analyses sit almost on top of each other.]

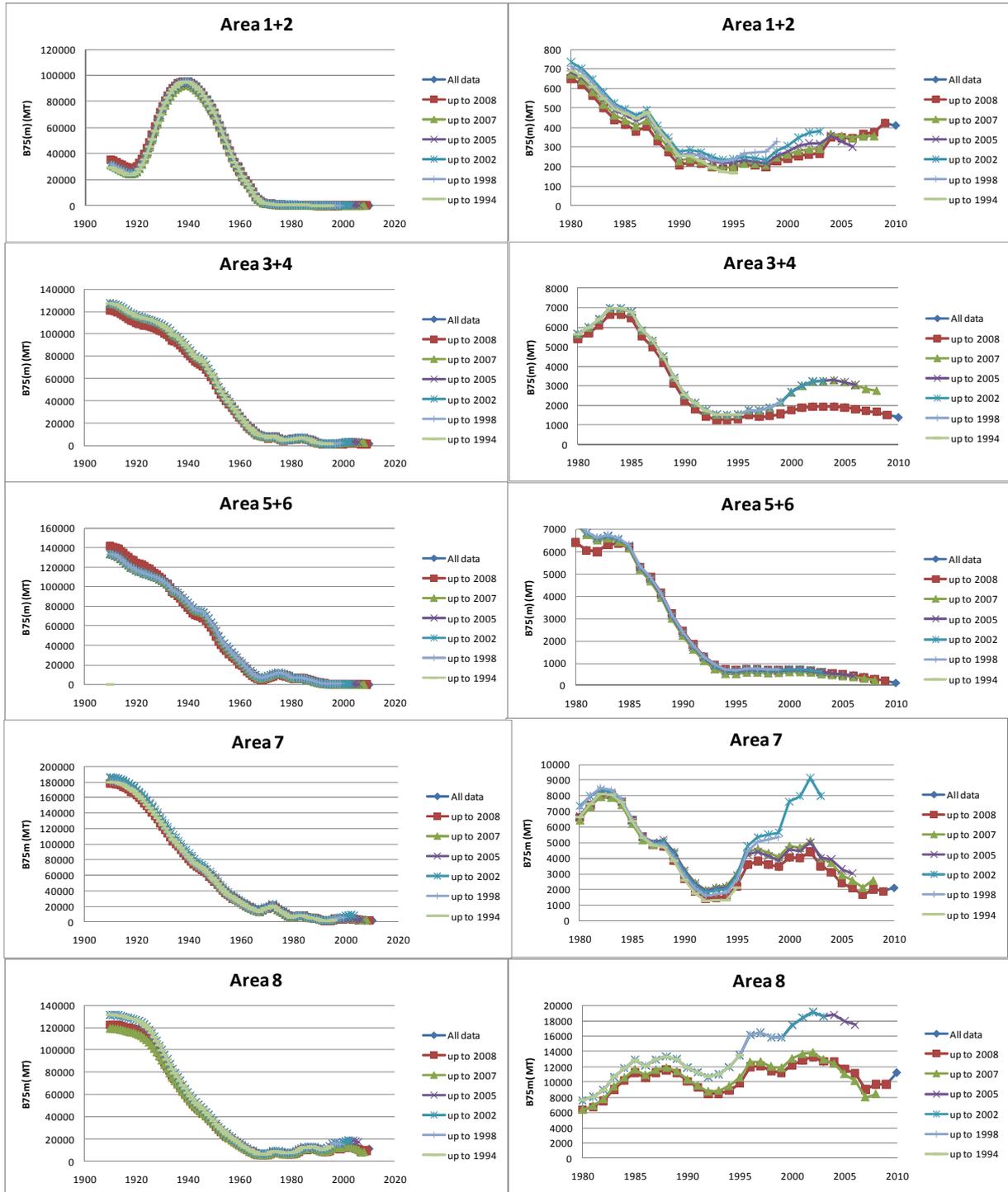


Figure 1b:  $B_{75}^m$  trends for combined super-areas for a range of retrospective analyses. [Note the trends for “all data” and “up to 2008” analyses sit almost on top of each other.]

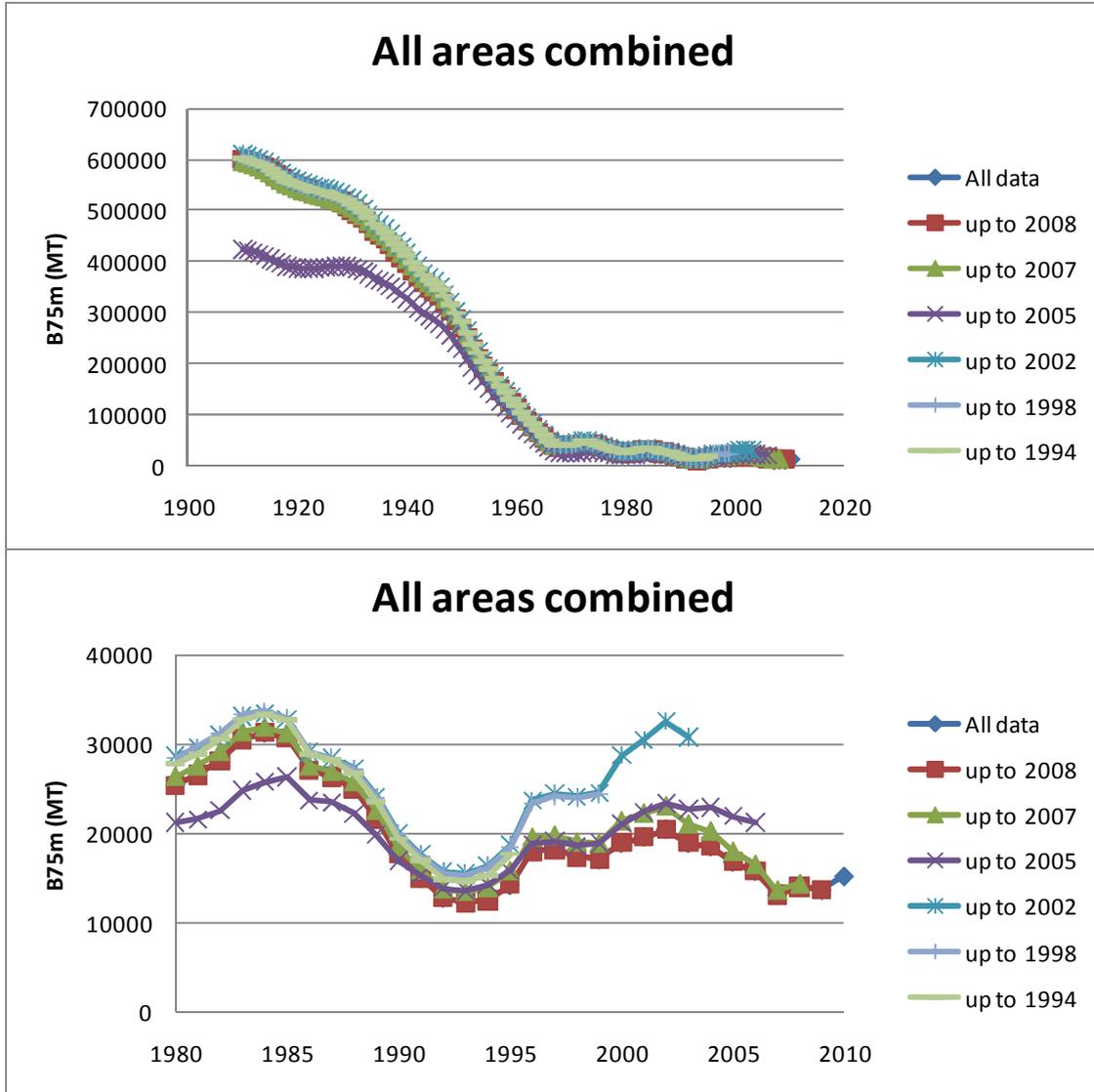


Figure 2a:  $B_{75}^m/K$  trends for each of the five super-areas for a range of retrospective analyses. [Note the trends for “all data” and “up to 2008” analyses sit almost on top of each other.]

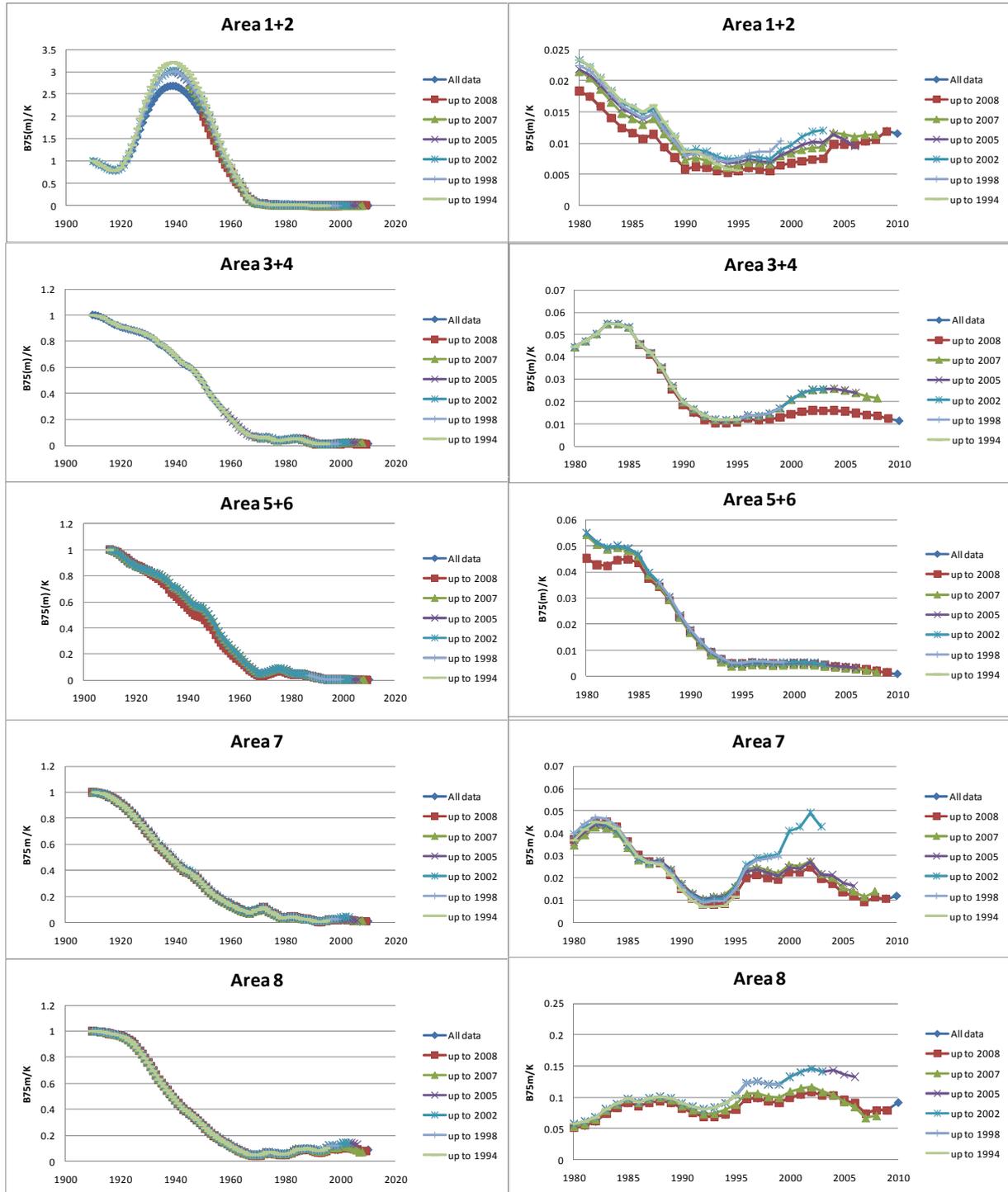


Figure 2b:  $B_{75}^m/K$  trends for combined super-areas for a range of retrospective analyses. [Note the trends for “all data” and “up to 2008” analyses sit almost on top of each other.]

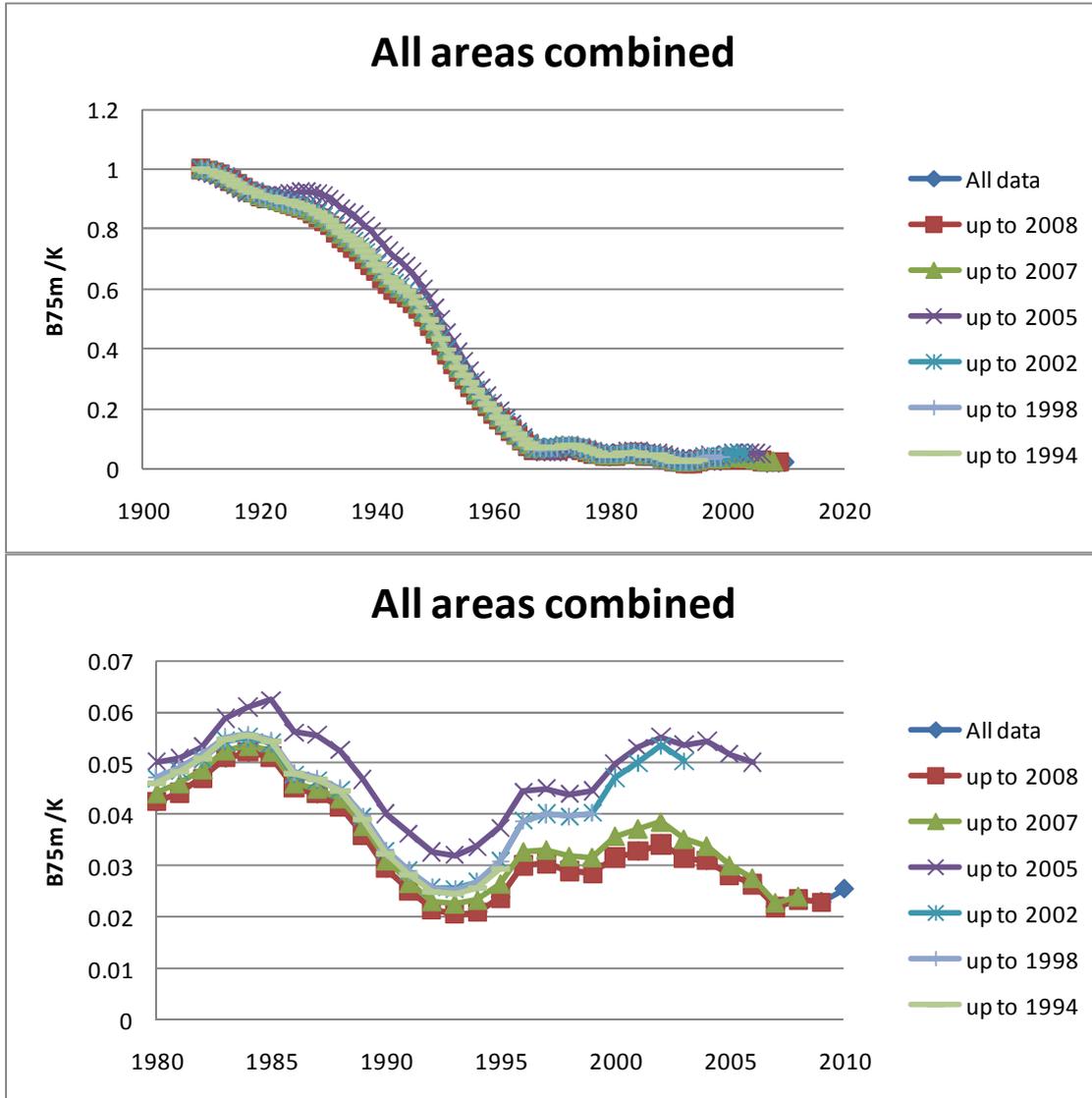


Figure 3: Recruitment trends (R/R(K)) for the retrospective analyses.

