**Krill and Greenhouse Gas Removal – a thought experiment**

**Sev Clarke, 2022**

For each tonne of Antarctic krill we harvest, we lose considerable Greenhouse Gas Removal (GGR) potential. Antarctic krill can live up to ten years old, with perhaps an average life of four years. Allowing for some of this to be in the free egg and larval stages, one might assume that the krill we harvest have an average life expectancy of, perhaps, two more years. If we ignore the strong, but now failed, GGR potential of all harvested krill descendants, and if their active, diurnal vertically migrating (DVM) life is in the sunnier half of the year, and that they migrate only once a day, this means that we will have prevented 2x365x0.5 = 365 migrations/krill. Assume that at the start of each downwards migration, its gut contains 20% of its body mass; that half of this is water; and that half of the remaining dry biomass is carbon; and that only half of this will be expressed at a depth such that the carbon will remain sequestered for over a century. Thus, 365 migrations x 1 tonne of krill x 0.2 x 0.5 x 0.5 x 0.5 = 9tC sequestered that we will have foregone, or a **ninefold loss of sequestered carbon** that we will have caused for each tonne of krill we harvest.

**Lessons: We should no longer harvest krill**

**and**

**We should provide supplementary BFOF/MOF nutrients to restore krill numbers to their pre-industrial level and seek to extend their habitat**