**BUOYANT FLAKE THESES**

**By Sev Clarke, 16 Feb 2022**

SITUATION: Succinctly, let me lay out my view of the situation.

OPPORTUNITY: CCRC researchers and its partners have a seminal opportunity to improve human welfare and possibly to help save the planet. This opportunity rests on the twin theses that:

* Ocean fertilisation using buoyant flakes could massively increase ocean primary productivity with little risk; and that
* Diel Vertically Migrating (DVM) species, such as krill and lantern fish, are so unexpectedly good at sequestering carbon in the ocean depths that disseminating buoyant flakes would let the proliferating species provide major assistance in reversing global warming over the next few decades – sustainably and possibly profitably.

EXPERIMENTATION: The latter thesis might be established, in part, by experiments determining the change in the gut contents of Antarctic krill caught over 24 hours at depth intervals down to a kilometre. At the same time, we might resolve the otherwise unexplained absence of midwater hypoxia that notionally would be caused by microbial action oxidising slowly-sinking marine snow.

METHODS: Traditional methods for catching krill usually involve nets. These are unsuitable for our purposes for many reasons, including that netting stress and pressure will typically cause the loss of faeces. What is proposed in the KrillCaptureDevicev2.ppt document is designed to capture and quickly sterilise krill and their gut contents. Analyses of collected krill and krill-free water samples by time and depth at favourable locations and seasons, together with (probably acoustical and visual) measurements of krill concentrations and modelling, should prove the thesis sufficiently well as to permit gated sea trials.

RECORDED ZOOM DISCUSSION FOLLOWS