2.8 Other mortality

?Other mortality? is the difference between total production and the sum of export, biomass accumulation, net migration, and predation mortality. ?Other mortality? is called ?*M0*? in some other models. These may also include a term for mortality called ?*M1*?, referring to the mortality caused by predator groups not explicitly included in the model. This kind of mortality can, in Ecopath, be considered a part of the net migration rate (the prey ?migrates? out of the system, and may then be eaten.) Th#is normally should not cause problems if the recommendation is heeded to include, in Ecopath models, all the groups that occur in an ecosystem, not just some of them.

Other mortality consists of organisms dying due to diseases, starvation, etc., and the animals or plants concerned end up as part of the detritus. This mortality can be entered in Ecopath in form of the ecotrophic efficiency (*EE*), i.e., as (1 - other mortality). The ecotrophic efficiency is, thus, the proportion of the production that is used within the system. It is what is accounted for in Ecopath. *EE* is entered on the Basic Input form.

It is difficult to estimate *EE* independently, and few, if any, direct estimates appear to exist. Intuitively one would expect *EE* to be very close to 1 for small prey organisms, diseases and starvation probably being, for such groups, much less frequent than predation. For some groups, *EE*, may however, be low. It is often seen that phytoplankton simply die off in systems where blooms occur (*EE* of 0.5 or less). Also, kelps and seagrasses are hardly consumed when alive (*EE* of 0.1 or so), and apex predators have very low *EE*s when fishing intensity is low: many incidences of tunas or cetaceans simply dying and sinking have been reported from open oceans, and there are indeed abyssal organisms (such as ratfishes) specialized in feeding on such carcasses.

An *EE* of 0.95, based on Ricker (1968) was used for many groups in Polovina's original model (Polovina, 1984a) and in other, later models.