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Elschot, Kelly

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Effects of vegetation patterns and grazers on tidal marshes

Kelly Elschot

1. Soil compaction by large grazers should be taken into account when estimating the ability of salt marshes to cope with an accelerating sea-level rise.
(This thesis, chapter 2)
2. The fraction of net ecosystem production that is removed by grazers significantly reduces the accumulation of sediment organic matter in a salt marsh.
(J.T. Morris and A. Jensen 1998, The carbon balance of grazed and non-grazed Spartina anglica saltmarshes at Skallingen, Denmark. Journal of Ecology 86: 229-242)
However, grazers can enhance sediment organic matter in the marsh soil, when negative direct effects through biomass removal are less substantial than positive indirect effects through enhanced root biomass and reduced carbon decomposition.
(This thesis, chapter 3)
3. Livestock grazing can be used in tidal marshes to provide increased carbon sequestration rates next to an increased biodiversity.
(This thesis, chapter 3)
4. Heterogeneity in marsh morphology enhances the carrying capacity of young marshes for small grazers by allowing later successional plant species earlier in succession.
(This thesis, chapter 4)
5. When successional trajectories exceed the life span of investigators, temporal change can be successfully explored through the judicious use of chronosequences.
(L.R. Walker et al. 2010, The use of chronosequences in studies of ecological succession and soil development. Journal of Ecology 98:725-736; this thesis, chapters 2, 3 and 4).
6. The direction of effects by herbivores on plant diversity (either positive or negative) could depend as much on the environmental characteristics as on the species of herbivore.
(H. Olff and M.E. Ritchie 1998, Effects of herbivores on grassland plant diversity, Trends in Ecology & Evolution 13: 261-265; this thesis, chapters 3 and 5).
7. Seek simplicity, and then distrust it.
(M. J. Crawley about statistics, after the English philosopher William of Occam (Occam's razor))
8. Densities of migratory herbivorous water birds (swans, geese and ducks) are highest in the Netherlands, where nitrogen (N) input to farmland have increased during the past 70 years and became highest in Europe.
(M.R. Van Eerden et al. 2005, Global Change Biology 11:894-908)
9. Als het niet kan zoals het moet, moet het maar zoals het kan.
(Comment by P.A. Jansen during fieldwork)