

IS EARTH SYSTEM MANAGEMENT POSSIBLE? ALTERNATIVES?

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Reviewing earth system science, philosophy of science and systems theory suggests that predict and control management of the earth system is not currently possible, nor are there reasons to believe that it will be possible. This is more significant given tipping points and thousands of years of inertia in the earth system. Tipping points in natural and artificial systems that regularly lead to abrupt change including catastrophic failure - if not cataclysm - are illustrated with 'icons'. One major 'alternative' to management - stewardship - will be discussed to illustrate what form alternatives might take.

Keywords: Management, Stewardship, Epistemology, Prediction, Earthsystemology

IMPACT OF BEAVER PONDS FOR ACCUMULATION OF DEPOSITS

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Beaver ponds, just like reservoirs, lead to accumulation of redeposited deposits, which may have different fractions. The depth of these deposits can be differentiated and it can depend on the direct sedimentary area. The deposits connected with the activity of beavers were found in Poland. When comparing with the investigation led in the United States it is possible to notice a kind of dependence. The bigger maintenance area, the bigger supply of deposits and their depth. The research carried out by the author concentrates so far on the deposits accumulated contemporary on the area of Bory Tucholskie (forest area in Poland), where the supply of sedimentary deposits is difficult (because of the forest area) but on the other hand, in the past, in different periods could be more intensive. In the analyzed beaver ponds, created on the streams, fluvial deposits (sands with depth 5-25cm) and reservoir deposits (loam and organic deposits with depth 2-5cm) are accumulated. Measurement of the depth led to creation of a three-dimensional structure of the deposits in the pond. The structure turned out not to be regular. It points to some extra factors, which have some influence on the sedimentation e.g. changes of the water-table level.

Key words: Bory Tucholskie, beaver, beaver ponds, beaver dams, stream, sediments

PLOT SCALE DESIGN OF SAMPLING STRUCTURES WITH SOIL BULK DENSITY MEASUREMENTS: SEMIVARIOGRAM TO DETECT FOREST MANAGEMENT DISTURBANCES

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