Producing a 'space of dignity'. Knitting together space and dignity in the EZLN rebellion in Mexico

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Abstract: In order to determine the effect the Coralville Reservoir has on water quality of the Iowa River, research on trends and fluxes of solids and nutrients was conducted. Data from 1973-2005 water years permitted determination of significant ($p<0.001$) long term trends for suspended solids (-2.78 mg L -1 yr-1), nitrate-nitrogen (0.59 mg L-1 yr-1) and ammonia-nitrogen (-0.005 mg L-1 yr -1). Orthophosphate-p trend equaled -0.002 mg L-1 yr -1 but was not significant. Concentrations and loads were found to have a seasonal component that was related to the Iowa River discharge and precipitation in the drainage area. Concentrations and loads were higher in spring for nitrate nitrogen, orthophosphate-P and suspended solids, while ammonia-N was higher in winter.

The Coralville reservoir is acting as sediment and nutrient trap, thereby reducing the nutrient mass load in the Iowa River. Since 1973 an estimated 16.9x109 kg of sediment has accumulated in the reservoir causing the loss of over 50% of its storage capacity at conservation pool. Trap efficiencies (TE) were 80.3% for suspended sediment, 55.9% for particulate-P, 17.0% for PO43 -P, 50.9% for chlorophyll "a ", 53.5% for pheophytin "a " and 27.9% for particulate organic carbon. Comparisons between TE from measured data and empirical equations commonly used to estimate TE was performed. The overall TE of the reservoir (80.3%) was accurately approximated by the Churchill sedimentation index equation (TE=79.1%), while the Brown, Brune, Dendy, Heinemann and SWCD equations underestimated the overall TE.

In addition a simple steady state model was used to estimate the settling velocity of particulate nutrients in the Coralville Reservoir. Annual and overall settling velocities were estimated with the mean apparent settling velocity (Vs) for suspended solids equal to 0.47± 0.25m d -1 , 0.70±0.50 m d-1 for particulate-P, while algal pigment particles settled at 0.20±0.16 m d-1 (Chlorophyll "a ") and 0.22±0.17 m d-1 for Pheophytin "a ". Particulate organic carbon had the lowest settling velocity, with a five year mean of 0.12±0.07 m d-1.