Nutrient Runoff From Newly Constructed Golf Course. (C05-starrett174157-Oral)

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Abstract:

A five-year research project funded by the USGA was started early 1998 which enabled us to establish background surface-water quality in terms of nutrients (total N and total P) and sediment concentrations, and evaluate changes of water quality in periods of golf course construction and early operation. Water quality data were divided into three sets namely: pre-construction, during construction, and early operation. The mean concentrations of TN, TP, and sediment (TSS) in pre-construction period were 1.18, 0.39, and 477 mg/L; during construction 3.94, 0.93, and 2,955 mg/L; and during the first 2 years of operation 2.38, 0.67, and 397 mg/L; respectively. Construction activities had, in general, the greatest adverse impacts on water quality. During golf course operation, TSS concentration returned to native prairie level, possibly even better. Nutrient concentrations in streams were greatly improved during operation from construction period, but still higher than the native prairie levels. Soil erosion was the major source of stream nutrients at native prairie conditions and during construction. Occasional spikes of high nutrient concentration in streams were found to coincide with fertilizer applications during the early operation period.

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