

WATER RESOURCES SUSTAINABILITY AND ITS APPLICATION IN KANSAS

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ABSTRACT

This presentation focuses on the hydrologic underpinnings of water resources sustainability and outlines the shortcomings of the "safe yield" concept. It points out how hydrologic fundamentals can be used to develop a sound water-use planning policy for stream-aquifer systems; addresses the more general concept of sustainability from the systems perspective; and outlines our still-evolving ideas on environmental sustainability. The Kansas water resources management experience and its evolution towards achieving sustainability are then outlined. This experience includes the establishment of local Groundwater Management Districts and their water management policies, minimum streamflow and TMDL (total maximum daily load) standards, conjunctive stream-aquifer policies, integrated resource planning, subbasin water resources management, and other programs. "Safe yield" rules, such as pumping the natural recharge, are shown to lead to degradation of streams, springs, wetlands, and water-dependent ecosystems. Because of the interdependence of surface water and ground water, operations on one have consequences for the other. Therefore, the importance of integrated resource planning and management harmonizing environment and society is stressed.

RÉSUMÉ

Conservation des ressources en eau et son application au Kansas.