

RELATION BETWEEN SCIENCE AND CURRENT MANAGEMENT IN THE APALACHICOLA-CHATTAHOOCHEE-FLINT BASIN (100 CHARACTERS WITH SPACE)

Steve Leitman¹, Ebrahim Ahmadisharaf², Ken Jones³

¹Waters Without Borders, Tallahassee, FL, USA.

²Florida State University

³Rhumblin Consultant PLLC

The Apalachicola-Chattahoochee-Flint (ACF) rivers and estuary is a basin that has been caught up in legal and management-based turmoil for the past three decades. In this presentation, the focus will be on the relationship between current science-based understanding of the watershed and current management policies and approaches. In 2016, the U.S. Army Corps of Engineers adopted a Water Control Manual (WCM), in which the preferred alternative was selected primarily based on historical flows from 1939 to 2012. Our analyses of 100 alternative stationary synthetic hydrology sets (developed by a stochastic model), which varied magnitude, duration, frequency and timing of historical flows, found that, in some instances, the WCM did not result in acceptable basin conditions in terms of drought control, water supply, composite storage and hydropower generation, when evaluated through a regional river system model of the WCM.

When the ACF water management projects were designed in the 1930s, the Apalachicola River and Estuary were considered to be two separate entities since the knowledge of the ecological relationships between rivers and estuaries was lacking at that time. Consequently when the recent WCM was developed, the effects of alternative approaches on the Apalachicola estuary was not considered despite the fact that it is now understood that river flow into an estuary is integral to its ecosystem.

Thus, the question is how do we design management of a watershed so that it considers current scientific understanding and looks towards the future instead of basing management approaches on concepts which when devised may have represented current understanding, but which now are known to be faulty. One way to approach this problem is to develop scientifically based, transparent and publicly vetted metrics upon which current management approaches are based.

PRESENTER BIO: Dr. Leitman is an environmental hydrologist who has worked in the ACF watershed for the past 50 years. He currently is a contract employee of the US Fish and Wildlife Service and is a contributing scientist in the Apalachicola Bay Systems Initiative.