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**AWRA 2011 ANNUAL WATER RESOURCES CONFERENCE**  
**Albuquerque, New Mexico**

**November 7-10, 2011**

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**DEVELOPING STATEWIDE INSTREAM FLOW TARGETS  
TO SUPPORT WATER MANAGEMENT IN VIRGINIA**

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**ABSTRACT:** There is a developing consensus that ecologically sound flow regimes - and not just a minimum low flow - are needed to support watershed health (Poff et al. 2010). Although Virginia's Water Protection Permit Program (the Commonwealth's Section 401 Certification Process) has a legal mandate to review all new and renewing water withdrawal permits for potential cumulative impacts to instream water uses, including wildlife and wildlife habitat, dilution of waste, recreation, and navigation, most of Virginia's major watersheds lack science-based in-stream flow targets protective of such uses. Permit reviews generally rely instead either on costly IFIM studies or on best professional judgment. With technical assistance from state, federal and academic experts, The Nature Conservancy and the Virginia Department of Environmental Quality have compiled extensive biological and hydrologic data - including Virginia's Interactive Stream Assessment Resource (INSTAR) and U.S. EPA's Chesapeake Bay Program Phase 5 Watershed Model - to characterize the relationship between flow alteration, water quality, and loss of ecological integrity for different stream types throughout Virginia. These quantified relationships will be used to support public decision-making regarding the in-stream flow necessary to sustain wildlife and wildlife habitat in Virginia's waters; thereby increasing certainty for permit applicants, and making the tradeoffs between instream and off stream beneficial uses of water more transparent to the public. Here we describe the methods, outputs, and lessons learned both from the evaluation of the interaction between flow-alteration and stream health, and from the effort to engage stakeholders in the scientifically defensible, socially acceptable, and practical adaptive management of the Commonwealth's freshwater resources.

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