

INSTREAM HABITAT QUANTIFICATION USING SYSTEM FOR ENVIRONMENTAL FLOW ANALYSIS

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The System for Environmental Flow Analysis (SEFA) is a software program that provides a set of tools for quantifying effects of flow variation on aquatic habitat. Data collection and analysis using SEFA can be performed in numerous ways depending on river morphology, structural alterations, and management objectives. A typical analysis begins with collection of topobathymetric elevations, water depths, water velocities, substrate, and cover data at points along several cross sections. Cross sections are selected based on mesohabitat type and river location. Habitat suitability curves relate depth, velocity, substrate type, and cover availability to habitat suitability, and can be developed for particular species, life history stages, and functional groups. Hydraulic modeling is used to develop relationships between flow and habitat availability, known as reach habitat curves. Combined with time series of daily flows, reach habitat curves can be used to provide a picture of habitat changes under alternative flow regimes. Results from Florida rivers have shown how various habitats respond differently to flow changes.

PRESENTER BIO: Dr. Herrick is a lead environmental scientist at the Southwest Florida Water Management District. He oversees data collection and analysis on multiple projects and synthesizes diverse results into clear management recommendations. He provides technical expertise in physical habitat modeling with SEFA, water quality assessments, and statistical analysis of ecological data.