

ADVANCING STREAM RESTORATION DESIGN: A SCIENCE-BASED APPROACH USING DATA AND METHODOLOGIES FROM THE AGENCIES

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Ecosystem restoration design is a relatively new field of work that requires multi-disciplinary expertise in the natural sciences. Although the field is new, federal agencies and public institutions have spent several decades and millions of dollars researching the sciences and methods that underly restoration activities. However, many restoration practitioners are either unaware of this vast body of knowledge or simply do not know how to apply it to these new project types.

This presentation will outline a science-based approach to project assessment, design, and construction using publicly-available data and methods from the USGS, USDA-NRCS, USACOE, FWS, EPA, FHWA, USBR, FEMA, interagency working groups, and peer-reviewed scientific publications. Project examples located in various regions of North and South Carolina will be presented, including urban stream daylighting, physical restoration of mountainous step-pool channels, and hydrologic restoration of bidirectionally-flowing floodplain streams. The examples will cover information from the disciplines of hydrology, hydraulics, ecology, geomorphology, and civil engineering. The presentation will introduce various publicly-available resources, and will outline a robust framework for assessing and designing creek restoration projects.

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