

FY 2009 RESEARCH PROBLEM STATEMENT

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TITLE

Bankfull regional curves for western Oregon streams

PROBLEM (Description of need)

Many stream channels that have been markedly altered by erosion, deposition, urbanization and/or degraded habitat. Section 404 of the Clean Water Act mandates that states remedy stream channels in which flow or sediment loads have been radically altered in order to return their channels to stable and biologically productive conditions. Historic stream engineering has focused on hardening the stream channel with concrete and rip-rap. More modern stream restoration techniques emphasize natural-design techniques using the dimensions and slope expected to transport water without detrimental aggradation or degradation found in unimpaired stream reaches. However, there are currently no studies defining natural bankfull conditions for western Oregon streams.

PROPOSED RESEARCH, DEVELOPMENT OR TECHNOLOGY TRANSFER ACTIVITY

Field data will be collected for three to five dozen unimpaired streams throughout western Oregon. The majority, if not all of these streams will be at sites with current or historic USGS gaging station data. Stations chosen will represent a wide variety of natural conditions and will vary greatly in drainage area. Regional equations will be constructed for bankfull cross-sectional area, width, mean depth and discharge. Similar USGS studies have already been performed in Idaho, New York, Virginia and Maryland.

BENEFITS

Regionalized equations will be entered into USGS StreamStats, and allow users to estimate discharge and the geometry of the natural bankfull channel. Data can be used primarily for stream restoration, and fish passage but can also be used to estimate road flooding,

CONTACT PERSON:

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