

FY 2010 RESEARCH PROBLEM STATEMENT

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TITLE ([more info](#))

Stream channel and stream habitat effects of implementing the fluvial performance standard for bridges and culverts.

PROBLEM (Description of need) ([more info](#))

The "fluvial performance standard", developed for the OTIA III Bridge Program Programmatic Biological Opinion and incorporated into SLOPES IV, sets a minimum opening width for bridges and culverts that is intended to protect channel processes and in-stream habitat. The fluvial performance standard was developed using fluvial geomorphic concepts along with an evaluation of practicality, but there is no information on how stream channels are actually responding to openings that meet the fluvial performance standard compared to narrower openings. Without this information it is not possible to determine if the standard is producing the the anticipated benefit, or if the required openings are sufficient or greater than necessary.

PROPOSED RESEARCH, DEVELOPMENT OR TECHNOLOGY TRANSFER ACTIVITY ([more info](#))

This project would include a comparative study of stream channels at road crossings and historical comparisons of streams before and after bridges or culverts were built or modified.

Streams crossed by structures that meet the fluvial performance standard would be compared with similar streams with stream crossings that have openings that do not meet the performance standard. Elements to be mapped and evaluated in both streams include, but are not limited to stream morphology, including meander form, erosional and depositional features, and sediment distribution, and habitat features important for fish. Ideally several different stream types would be included.

Supplementing the study of existing conditions, changes in channel form resulting from the construction or modification of stream crossings would be investigated using aerial photography and other historic resources (plans etc.).

BENEFITS ([more info](#))

Future discussions on the requirements of the fluvial performance standard would be informed by actual performance data. The actual impact of stream crossing projects could be more accurately evaluated, which would assist in developing environmental reports and getting environmental permits. In addition, the benefits and sufficiency of the fluvial performance standard could be assessed, potentially leading to modification and improvements in the standard.

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