

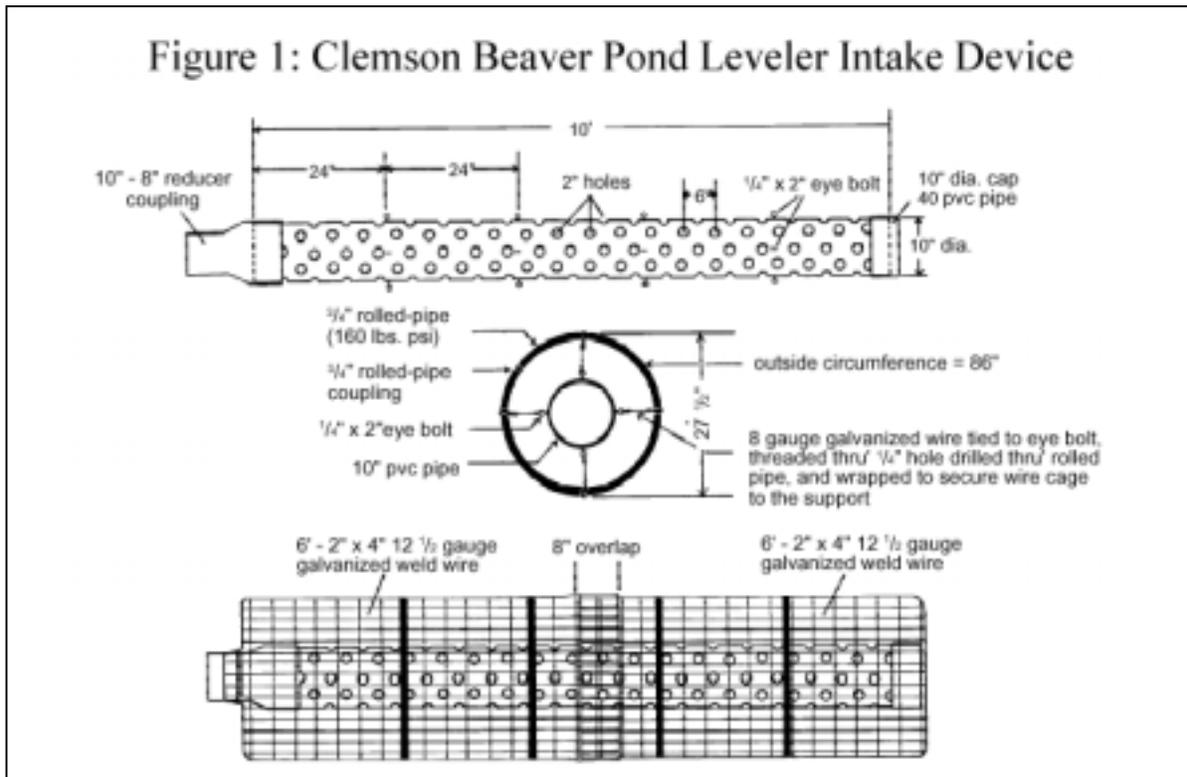
BEAVER RAFFLERS

Historically, highway maintenance forces have had to remove beaver dams from roadside culverts each year. The dams can create significant pools, saturating and weakening the roadway structure. If not removed, the water behind the dam can cover the highway. If the roadway fill becomes over saturated, a fill failure can necessitate closure of the highway.

Beavers often build dams in waterways containing populations of federally-protected fish. In these circumstances the dams can only be removed during seasonal in-water work windows and only after proper coordination with regulatory agencies and with approved permits in

place. Typically, beaver dam building does not coincide with the in-water work window.

Beaver dam removal is also expensive. ODOT Region 2 currently spends an estimated \$80,000 per year – an amount that could be reduced with effective prevention. Potential prevention methods need to address many different parameters, such as water velocity, bedload movement, large woody material movement, and water volume. Numerous devices and methods have been developed to prevent beavers from blocking culverts while still maintaining fish passage and adequate stream flow.



One example of a device to prevent beaver dam blockages

Potential Solutions

Simple destruction of the dams rarely results in a solution, because the proverbially industrious beavers will be back re-building the dam in no time. Removal of the beavers by live-trapping has drawbacks as well – there isn't a suitable habitat in Oregon that does not already have plenty of the fecund rodents. Kill-trapping presents its own set of problems. Many residents enjoy the beavers and object to their removal in this fashion. Additionally, more beavers can be expected to move in to replace those vacated by live- or kill-trapping.

The preferred low-impact solution to beaver-clogged culverts is to create drainage alternatives that the beavers cannot plug. Simple grates or grills set over the culvert entrance are of limited utility, as the beaver simply build their dam against the grate. More complex structures involve long sections of PVC pipe and/or long tubes of galvanized welded wire mesh which greatly increase the area a beaver must block to prevent drainage. These devices may be attached preemptively to culverts or installed thru existing dams. Devices are marketed by commercial vendors (e.g. "Beaver Stop"), and plans are

available from universities and government agencies ("Clemson Beaver Pond Leveler"). All of these devices allow small fish passage

What works and what doesn't?

The New York Cooperative Fish & Wildlife Research Unit at Cornell University surveyed highway departments in New York to find out which methods work best.

The most effective method was the removal of the beavers, rated "effective" to "very effective" by more than 70% of the respondents. Destruction of the beaver dam was judged effective by 41%. Assorted blockage-proof devices received an average of less than 20% favorable response, as did installation of oversized culverts and bridges – all were well below the 37% rating for simple culvert grates.

As a final note, two videos are available from the Pennsylvania Local Roads Program featuring the "better beaver baffler built to banish the baneful beaver". ODOT does not have copies of these videos, but they can be obtained on loan from the Virginia T2 Center.

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***For more information on ODOT's Research Program and Projects,
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