

THE CLEMSON BEAVER POND LEVELER

DEPARTMENT OF AQUACULTURE, FISHERIES AND WILDLIFE

The Clemson Beaver Pond Leveler (Figure 1) was developed to meet two goals. The need to suppress the problem of flooding agricultural and timber lands was paramount. The second goal was to maintain or improve some of the benefits derived from beaver ponds and associated plant communities while preventing extensive flood damage. The leveler does not negate the need for direct control of beaver populations where problems are both extensive and severe; however, it may reduce this need. The leveler offers the opportunity to get along with, and in some cases, derive benefits from the existence of a few beavers.

How the Leveler Functions

The pond leveler intake device is designed to minimize the probability that current flow can be detected by beavers, therefore minimizing dam construction. Device testing at about 30 sites in South Carolina during the past three years has shown that beavers were unable to detect a submerged intake device as the source for pond water loss. The intake device should be installed so that it is always below the water surface even when the pond level is at a minimum.

A second stimulus that causes beavers to build dams and fill culverts and standpipes is the sound of falling or trickling water. When the outlet end of the leveler assemblage can be below water on the downstream side of a dam, problems should not develop. At test sites where standpipes have been used and water flows out in a fountain-like fashion, beavers have made no attempt to stop water flow. Stand-pipes regulate the water levels in the ponds and are essential where periodic drawdown and reflooding is desirable.

Special Considerations

The Clemson Beaver Pond Leveler device should help reduce flooding, manipulate pond levels, solve road culvert plugging problems, and prevent filling of standpipes and culverts used as water control structures in fish ponds. However, the leveler is not a panacea for

eliminating all beaver problems. This particular design will be limited to situations where the water input to a pond is from a small stream or spring. During periods of unusually high rainfall, problems may develop. In fish ponds, where the leveler is used in combination with a standpipe and culvert water control structure (Figure 2), prolonged flow of water over the standpipe riser boards may cause beavers to fill the standpipe. To reduce this possibility, riser boards should extend about one foot above the normal water level so that storm water can be stored and drained slowly through the leveler.

Some indications suggest that where a pond was drained and the intake device was above water and near the dam, the beaver may be stimulated to construct the new dam on the upstream side of the device. It's important that the intake device be installed so that it is totally or mostly submerged at all times.

Leveler Installation at Active Beaver Sites

In the South, beaver activity levels are highly correlated with seasonal temperatures. Most dam-building, expansion, and repair occur during the cool months. If the leveler is installed at an active dam site, installation during this cool period is best. The dam can be dug out and the device laid in place. Beavers will rebuild over the outflow pipe, which will not deter water flow through the pipe.

Beaver dams can be dug out by hand more easily than most people imagine using a fire-fighting tool called a pulaski. A pulaski has an ax bit on one side and a mattock on the other. Dams should be broken first on the downstream side so that water pressure can be used to push out dam materials.

When parts of a leveler assemblage have to be transported across a stretch of water, they can easily be floated. Ends of outflow pipes are taped over with water-resistant tape. The pipes are then tied together to form a raft. The intake device and other assemblage parts are set on the raft and floated to the site.

A list of materials is provided in Table 1. The leveler design is shown in Figures 3 and 4.

Table 1. List of Materials

Quantity	Item
1	10' section, 10" dia. PVC pipe (Schedule 40)
1	PVC cap for 10" dia. PVC pipe (Schedule 40)
1	10" x 8" PVC pipe reducer coupling (Schedule 40)
4	86" sections, 3/4" dia. plastic roll pipe (water pipe), 160 psi grade
4	3/4" metal couplings for roll pipe
16.....	1/4" x 2" galvanized eyebolts
16.....	1/4" galvanized nuts
16.....	1/4" galvanized washers
16.....	16" sections, 8 ga. galvanized wire (medium hardness)
2	96" sections, 2" x 4" 12 1/2 ga. galvanized welded wire
2 lbs.....	Crab trap clamps (fasteners)

The above materials are required to assemble the intake device for the Clemson Beaver Pond Leveler. The carrying pipe (flow pipe) may consist of 20 to 40 feet of 8" diameter PVC, Schedule 40 with coupling sleeves and elbows appropriate to the desired configuration.

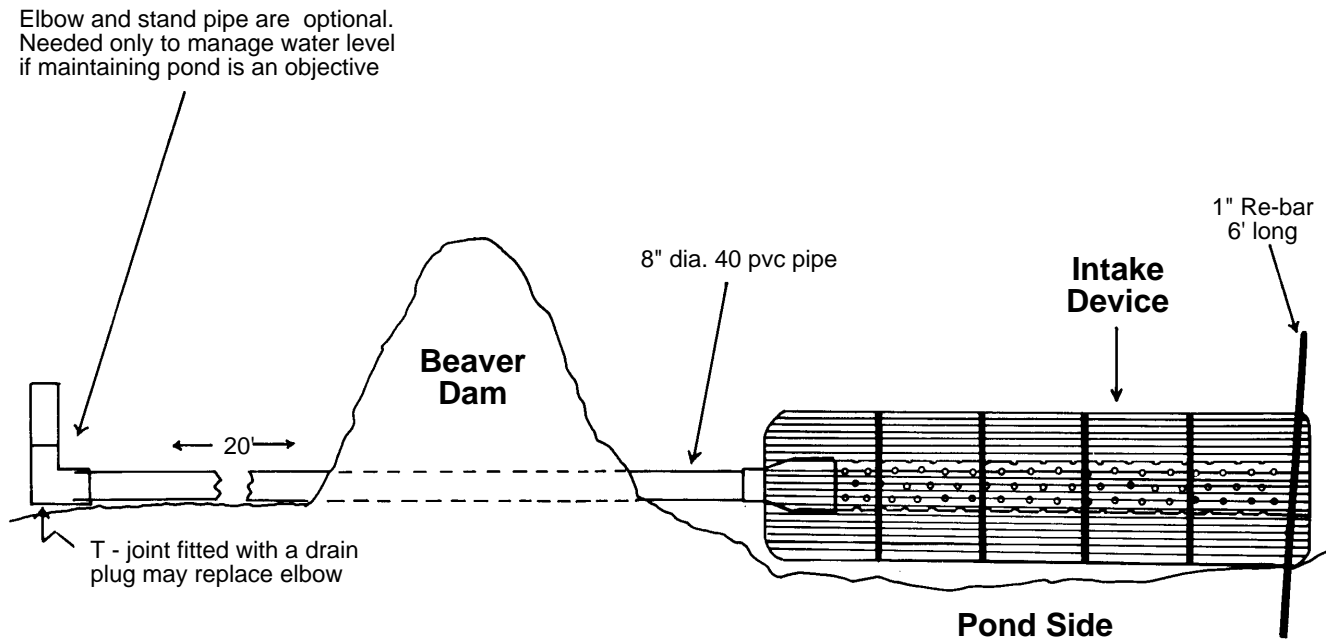


Figure 1. Clemson Beaver Pond Leveler

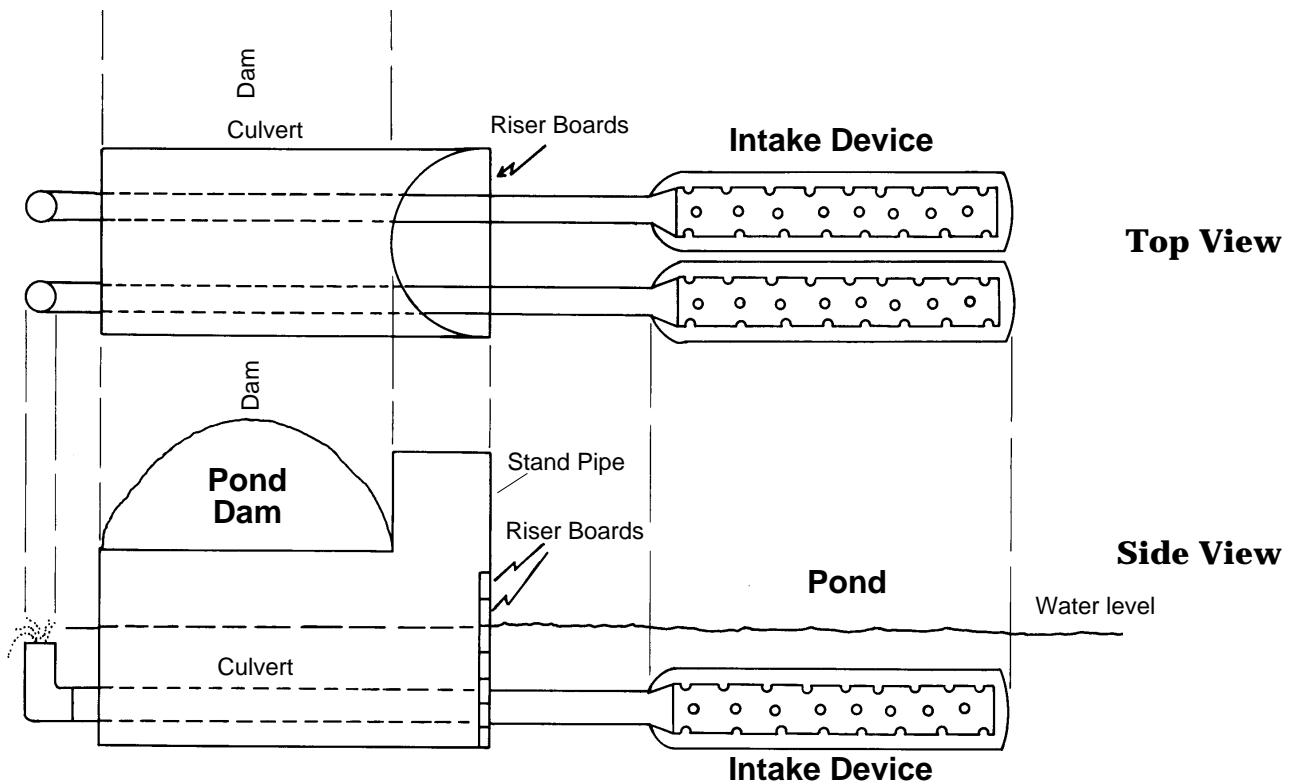


Figure 2. Beaver Pond Leveler in Combination with Fish Pond Standpipe-Culvert Water Control Structure

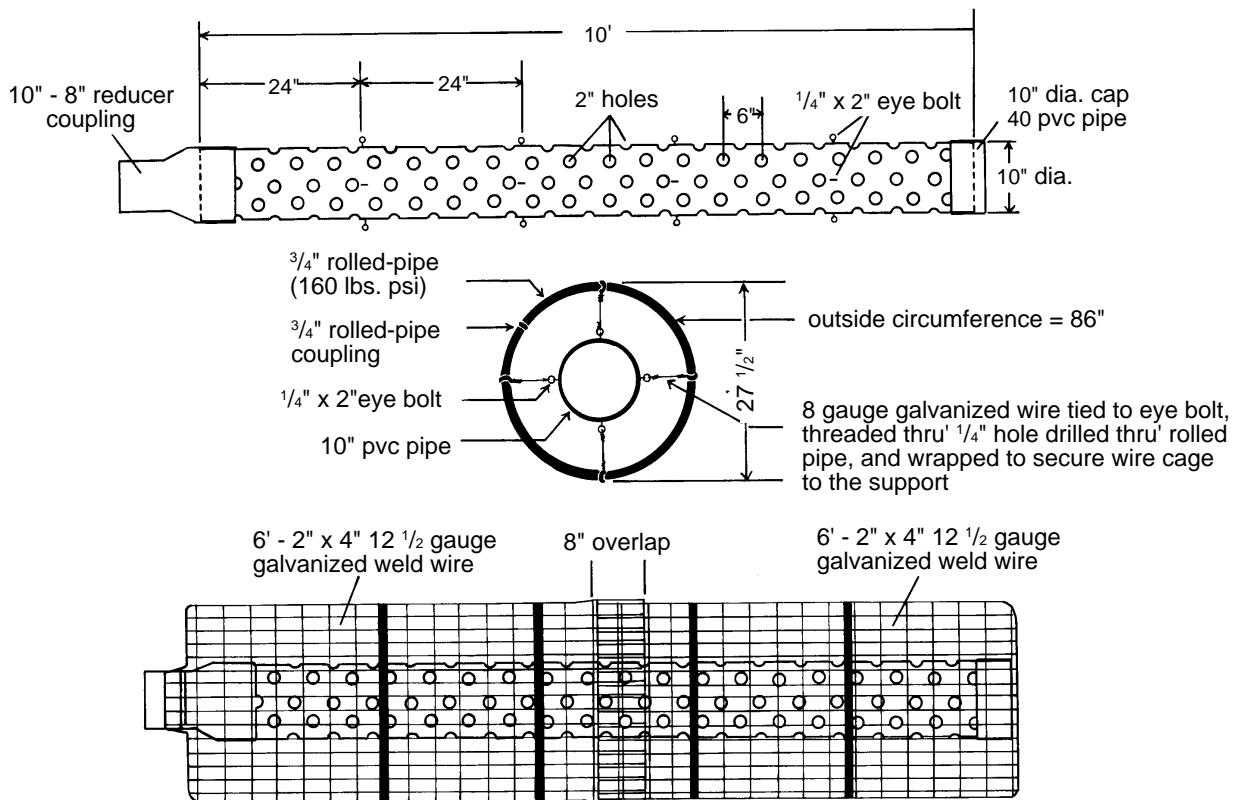


Figure 3. Design of Intake Device

Clemson Beaver Pond Leveler

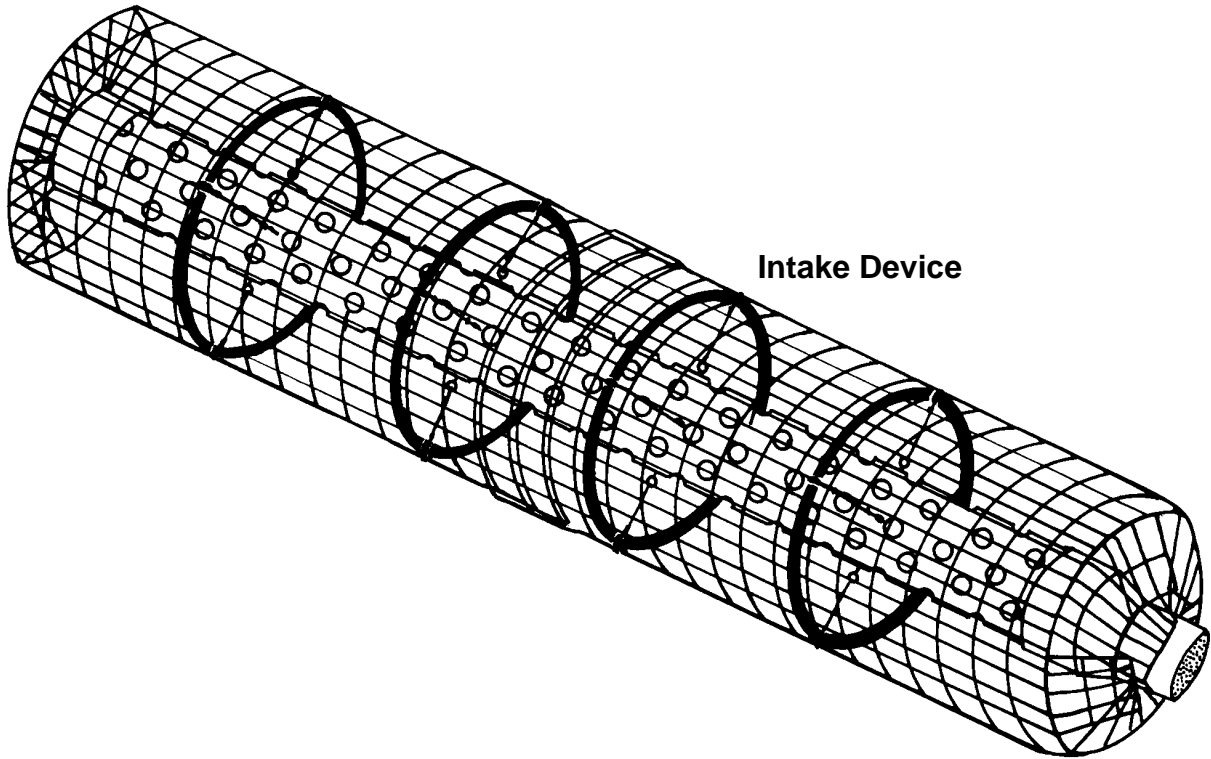



Figure 4. Intake Device

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