

# Partnering with Stakeholders to Alleviate Beaver and Associated Mosquito Problems

Amanda Hope, Wetland Project Coordinator, CMMCP, hope@cmmcp.org

## Beavers and Mosquitoes

The Central MA Mosquito Control Project receives several complaints regarding beaver activity each year. Typical concerns of residents and town officials include increased mosquito nuisance and flooding leading to septic system failure. Beaver activity also commonly leads to culvert failure and ditch deterioration.



Addressing beaver concerns may provide the following benefits to mosquito control agencies:

- Potential reductions in breeding and virus
- Additional service to member towns, resulting in excellent PR
- Opportunity to utilize existing excavation equipment that is sometimes inactive due to increasingly strict regulation.

## Beaver Biology

- America's largest native rodents: average adult weight between 60-80 pounds
- Beavers have few natural predators and typically live 5 years (but can reach 20)
- Give birth to 1-9 kits per year
- MA population of beavers 50,000-80,000
- Build dams so that they can store food under the ice in the winter and so that they can have a safe underwater environment
- Damming stimuli include the sound and feel of moving water
- To beavers, culverts seem like holes in their dam
- Beavers scoop mud with their forepaws and apply it to the dam with their feet and snouts (not with their tails)



## Beaver Management Goals

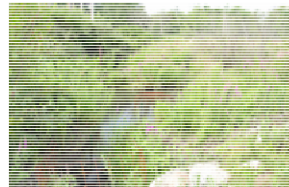
- We should not remove every existing beaver and dam.
- Rather, the goal should be to maintain beaver populations compatible with the available habitat.
- For towns, this means attempting to encourage beavers to move upstream or downstream into areas where their flooding will not significantly harm infrastructure and homes.
- Selective use of trapping, dam breaching, and water flow control devices may be able to focus beaver activity away from problematic areas.
- There is also interest from town and state officials in modifying existing trapping laws so that beavers can be sustainably harvested and managed.
- Remember that beavers provide important benefits including creation of wetlands and wildlife habitat, economic value, and aesthetic, recreational, and educational values.

The MA Division of Fisheries and Wildlife has excellent online materials regarding beaver management.

## Pilot Project – Tewksbury, MA

- **Problem:** Beavers had dammed 2 culverts, flooding Route 38 and several residential septic systems
- **Stakeholders:** BOH, DPW, Representative Miceli, MA Highway, Mass Electric (property owner), Beaver Solutions, CMMCP
- **Action Taken:** MA Highway attempted to repair the culvert under Route 38 and also maintained the ditch around it. The town installed protective screening on the culverts. CMMCP finished the ditch reclamation and removed the dam around the second culvert and the associated non-functional flow control device. Beaver Solutions installed a beaver fence to protect this culvert.
- **Successes:** The flooding around Route 38 and the homes was reduced. The ditch was reclaimed and some water flow was re-established.
- **Issues:** The beavers have dammed the fence around the culvert and the water level has risen somewhat. This fence may need to be taller. Also, the fence and the grates on the culvert need to be more regularly maintained. Although all stakeholders said they would maintain it, it is always blocked when I check on it. We may need a formal maintenance plan.
- **Possible Long-Term Solution:** Due to site characteristics, the best plan may be to remove the second culvert. However, this is an old railroad culvert and on a Mass Electric easement, so there is not sufficient desire at this time.

### Conditions Pre-Work



Ditch overtaken with Purple Loosestrife and no flow through culvert

### Conditions Post-Work



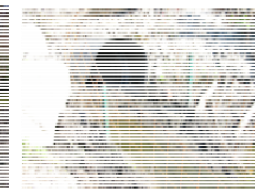
Redefinition of ditch



Removal of non-functioning flow-control device



Beaver Solutions installation of beaver fence to protect culvert



Fence beginning to be dammed, debris present in culvert on both ends despite fencing and grate

## Legal Considerations

- It is essential to partner with town officials, including Board of Health Agents, Conservation Agents, and Department of Public Works representatives. If there is a lack of prior agreement between these individuals regarding the project's importance and scope, it is very difficult to implement a project.
- Massachusetts General Law Chapter 131, Section 80a governs how beaver problems are addressed.
- BOH grants a 10-day emergency permit for trapping, breaching of dams, and/or employing water-flow devices.
- The Conservation Commission issues conditions to this permit.
- The DEP and Army Corps of Engineers typically have considered the permit satisfactory for CMMCP to conduct dam removal and have not required any other paperwork.
- If doing any ditch work in addition to dam work, must notify according to regular procedure.
- Check to make sure you are not impacting Priority Habitat.
- Get landowner permission.
- Fine for touching a dam without a permit is up to \$25,000 per day per dam.

## Logistical Considerations

- Mosquito control agencies can provide towns with significant assistance in dam removal and ditch reclamation.
- However, breaching alone will not be sufficient.
- The town typically arranges for beaver trapping before the dam breaching/removal.
- Helpful if the town will remove the dam removal debris from the site.
- The town should also seriously consider placing a protective fencing structure or water-flow device to prevent further beaver activity. Can be less expensive long term than dealing with persistent beavers.
- The town must be willing to maintain these structures.
- Beaver Solutions ([www.beaversolutions.com](http://www.beaversolutions.com)) is the most often recommended company for trapping and flow-control structures.
- If there are beaver dams upstream and downstream of the dam that the town would like addressed, it is not likely that the project will be successful or that the water level will drop much.
- Make sure to notice roads, homes, etc. that might be affected by the removal of the beaver dam.
- All projects should be done with the understanding that beavers are very persistent, site conditions are rarely optimal, and success is not guaranteed.

## Future Opportunities for Mosquito Control Agencies

- CMMCP's current policy: "CMMCP can refuse to do water management work if the presence of the beaver dam renders maintenance in the area infeasible or imprudent. CMMCP will work with local and state departments to determine adverse impacts to property or public health concerns caused by beavers. CMMCP may remove beaver dams on a limited case by case basis. However, the town will be responsible for obtaining BOH and Conservation Commission permits, removing the excavated material from site, and arranging any trapping or beaver control structures for ongoing control. Other features of the site will also be taken into consideration before CMMCP agrees to remove a beaver dam."
- Trapping: CMMCP employees participated in a trapper education class conducted by the Division of Fish and Wildlife. However, trapping does not seem to be a feasible option at this time. Current trapping regulations require the use of traps that are expensive, large, and somewhat dangerous to operate. Also, trapping requires that the animal be dispatched and disposed of, which poses certain logistical concerns.
- Water Flow Devices: The materials required and labor involved to install a flow device does not seem prohibitive, and this may be an opportunity for CMMCP to expand our service.