Deer Fencing for Habitat Restoration

Introduction

Increases in black-tailed deer (*Odocoileus hemionus*) populations in the Southern Gulf Islands, British Columbia are having a significant impact on plant structure and diversity. This impact is particularly noticeable on Mayne Island, where non-native fallow deer (*Dama dama*) are also present after being introduced in the 1990's. Native vegetation planted as part of habitat restoration efforts on Mayne Island must be protected from deer. Between 2009 and 2020 the Mayne Island Conservancy has used a variety of fencing materials to protect individual trees, and to exclude deer from larger areas. In this document you will find recommendations on fence materials and construction for the protection of native plantings.

Individual Cages vs Larger Fenced Areas

We have found fencing larger areas to be more cost effective long-term than installing and maintaining individual tree protectors. Fencing larger areas also allows for the establishment of more diverse and representative plant communities because additional plants will establish naturally between those planted. We only recommend individual tree protection for single tree plantings, or in cases where multiple trees are being planted but very widely spaced. One consideration when fencing larger sites is that some exotic plants that were previously being browsed by deer may increase in growth in addition to desired native species. The resources required to manage exotic species will likely increase, at least until native plants are well established.

Individual Tree Protectors

We have used a variety of individual tree protectors including Vexar plastic mesh tubes, corrugated plastic tubes, and larger metal cages. We have concluded the larger metal cages are the most effective and economical because of lower maintenance needs and the potential for re-use. We recommend an 18" diameter cage six feet in height for central leader trees such as Douglas fir, western red cedar, and grand fir. We recommend a 24" diameter cage six feet in height for multiple leader trees such as arbutus, big-leaf maple, and red alder. Individual cages can be constructed by cutting metal fencing into 5' lengths for 18" diameter and 6.5' lengths to make 24" diameter. Cages can be secured to the ground using 3-4' lengths of rebar or cedar pounded into the ground and secured to the fencing with plastic zip-ties. Individual cages should be maintained at least twice per year to ensure they have not fallen over, and that in the case of central leader trees the leader is still within the cage. Failure to frequently maintain individual cages can result in deformed and dead trees.

Fencing for Larger Areas

We have used two types of fencing for larger areas: 6' tall rigid metal fencing, and 8' tall polyethylene fencing. The shorter metal fencing is only appropriate for sites where the ground is level and smooth. The taller polyethylene fencing is appropriate for sites with rough terrain and slopes.

Six-foot Metal Fencing

As shown on the right, the shorter metal fencing can be effective for flat sites. The fencing is secured to 8' t-posts, spaced 10' apart, pounded into the ground to a depth of 18-24" using a post pounder. The fencing is secured to the t-posts using cut pieces of metal wire 6-8" long. The advantage of this fencing type is it can be re-used, expanded, or cut into individual cages as needed. The disadvantage is it is not suitable for rough terrain, and it is lower than the 8' standard recommended height for deer fencing. Though we have never had a deer enter our sites where this fencing is used.

Eight-foot Polyethylene Fencing

We have found this fencing system to be effective for most terrain and soil types. The flexible fencing can be contoured to rougher ground and changing slopes, within reason. We advise against attaching the fencing directly to living trees. As the trees grow, they may become injured or die. We use 10' t-posts, spaced 10' apart, pounded to a depth of 18-24" using a custom fabricated post pounder designed specifically for longer t-posts. The fencing can be attached to the t-posts using plastic zip-ties, stainless steel zip-ties, or cut pieces of metal wire 6-8" long. You will need a step ladder to secure the top of the fencing. The bottom of the fence must be staked to the ground to eliminate gaps and prevent deer from crawling underneath. We use two 12" ground stakes between each set of t-posts. In some cases, such as on rough terrain, you may need to fill larger gaps using stones. The advantage of this fencing system is it can be used on rough and steep terrain and can be installed by hand without the need for machine access. The disadvantage is at the end of life this plastic fencing cannot be recycled and may be challenging to remove from the landscape if it is entwinned in vegetation. Installation of the t-posts is relatively easy in deep soils but can be challenging on thin soils and rocky hillsides.

Costs and Material Sourcing

Most of the materials needed for these fencing types are available locally through the Mayne Island Home Building Centre. The exception is the 12" kinked ground stakes, which to date we have sourced from DeerBusters Canada.

The cost of the fencing changes from year to year and we recommend contacting suppliers for up-to date quotes. In 2018 we calculated the material cost of the polyethylene fencing at approximately $4/linear foot. Installation costs can vary widely depending on the soils, topography, and access at each specific site. All the tools needed to install these fencing systems are widely available with the exception of the post pounder for longer t-posts. In 2018 we had one custom fabricated for us based on the USDA design for the cost of $850.