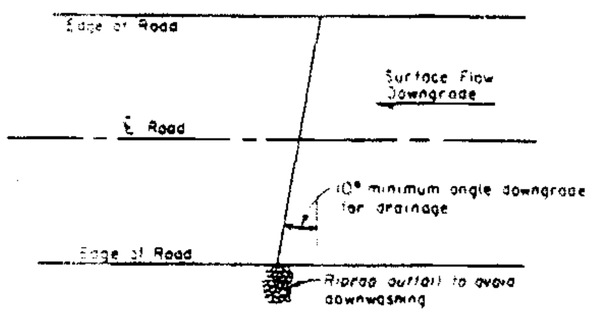
Watershed and Reservoir Protection Recommendations for Homeowners

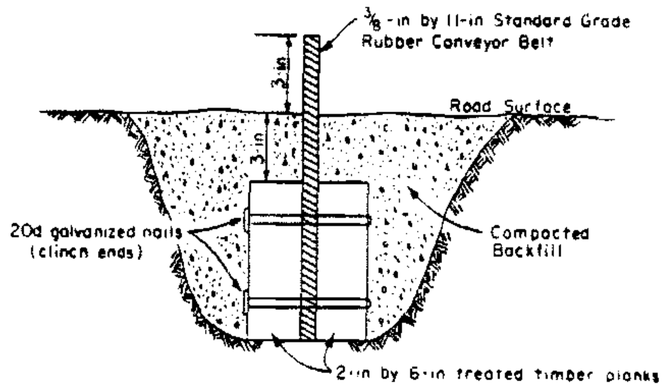
Soil erosion from private property is a significant source of the sediment deposition into Hamilton Reservoir. Sediment and nutrient overloading from private property promotes nuisance aquatic plant growth. The following measures will help protect your reservoir against further sediment and nutrient degradation. Every homeowner and action taken will play a part in restoring Hamilton Reservoir to the healthiest condition possible.

To Reduce Sediment Loading:

- **Hard-surface (pave) driveway or install waterbars to direct water off the erodable dirt driveway and into vegetated areas.**

  Much of the sediment erosion from private property into the reservoir is from homeowners' driveways. Paving with asphalt or large stone gravel will prevent the driveway surface from eroding into the reservoir. Water bars directing water off dirt driveways and into grass swales will trap sediment before it enters the reservoir.





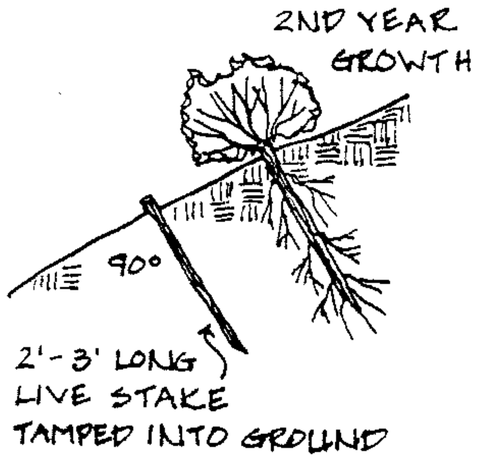
TYPICAL CROSS SECTION

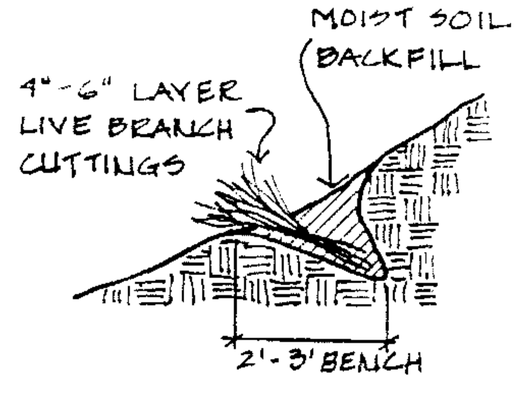
- **Create catchment areas for sediment diverted from driveways', clean regularly.**

  Grass swales with catchment basins should be installed to catch driveway runoff from both dirt and paved driveways. Catchment basins should be cleaned of sediment; this sediment should be properly disposed of regularly to avoid overflow into the reservoir.

- **Plant soil-stabilizing vegetation in areas where "natural" erosion is occurring.**

  Live vegetation stakes, brushlayering, and rooted cuttings should be used to stabilize erosion occurring on steep slopes. Wherever bare soil exists, vegetation (grass, seed, perennial plants) should be planted to stabilize the soil. A mulch of pine needles or tree leaves can also be used to keep soil in place.

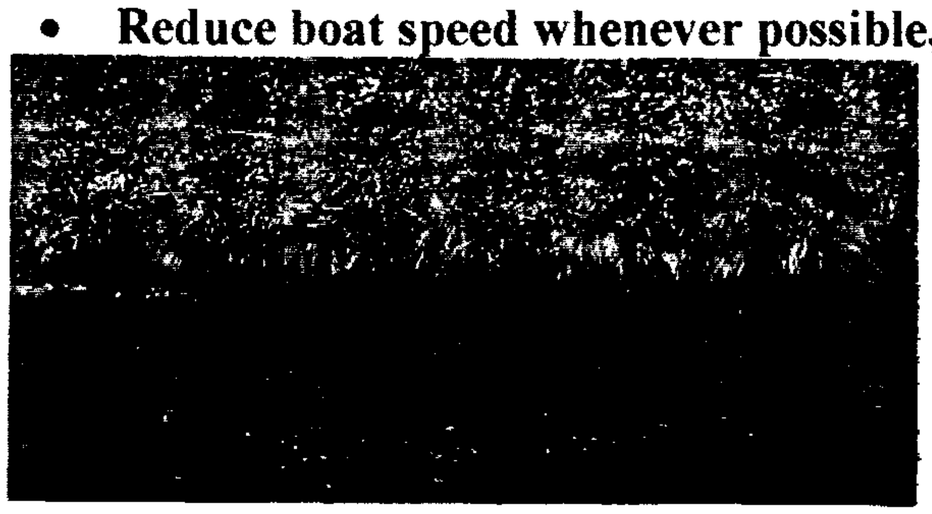




- **Remove on-site, soft-surface boat launching areas and use public launching ramps.**

  Personal boat launching areas, formal or informal, should be either paved or vegetated. Two new public boat ramps now exist (one on the north basin and one on the south basin) for launching and removing watercraft.

- **Reduce boat speed whenever possible, particularly near shore to reduce bank erosion from boat wake.**



In conjunction with storm waves, boat wakes cause serious erosion to the banks of the reservoir. Where the shoreline is protected only with lawn grass, the erosion is most severe, however, all unprotected sections of the shore are vulnerable to undercutting and erosion. Wave action also creates currents that help to transport sediment around the reservoir.

- **Remove fixed bulkheads and walls and replace with native vegetation to stabilize reservoir bank.**

  Reinforced reservoir banks tend to deflect waves from boats and storms and concentrate the energy. These waves will direct their force on the unprotected banks causing even greater bank undercutting and erosion. Natural grass and shrub vegetation along the shore will help to absorb wave energy as well as hold the soil in place.

- **Practice erosion control methods when performing construction on your site.**

  Properly installed silt fences, hay or straw bales, and geotextile fabrics should be used to stabilize soil and retain soil on site. See the Holland Conservation Commission for further details.

<u>To Reduce Nutrient Loading and Pondweed Growth:</u>

- **Properly install and maintain septic system.**

  Homeowners have many responsibilities with an on-site septic system. An improperly installed and/or maintained system will result in excessive nutrient influx, particularly nitrogen and phosphorus, in the reservoir. Phosphorus is a primary nutrient necessary for the growth of aquatic plants. See the Holland Board of Health for septic system maintenance guidelines.

- **Reduce the use of lawn and plant fertilizers, pesticides, and herbicides.**

  Lawn fertilizers contain high phosphorus concentrations that migrate via runoff and groundwater flow into the reservoir and will promote aquatic plant growth. Pesticides and herbicides are a potential health risk to nutrient absorbing aquatic life and swimmers.

- **Thoroughly clean all parts of your boat after use in another lake and before launching in the reservoir to prevent the spread of invasive pondweeds.**

  Nuisance aquatic plants can enter the reservoir and root themselves from plant fragments caught on boat trailers, boat motors and bottoms, and fishing gear. Many non-native aquatic plants and animals spread rapidly and can not be readily controlled.