

Wildlife Conservation Land Program Wildlife Reserve Management Activity

EROSION CONTROL



NICOLE PAULEY/USFWS

Top: In-stream erosion control and restoration practices are invasive activities. In most instances implementing these activities requires governmental permitting and designs developed by licensed engineers. Landowners should be aware of these requirements before including these activities in a WHCA. Bottom: Even when erosion occurs in an upland site it can deposit sediment into waterways and wetlands some distance away. Addressing erosion with appropriate grading and vegetation establishment can help to protect critical aquatic habitats and the native animals that require these habitats.



Activity Description

Sediment is the leading pollutant by volume in North Carolina's waterways. These tiny particles of soil inundate not only naturally flowing waterbodies such as creeks and streams but can also negatively impact man-made ponds and impoundments. Sediment affects the quality of aquatic ecosystems by reducing dissolved oxygen content of water, covering rocky substrate needed for invertebrate reproduction, burying benthic species such as mollusk, altering aquatic plant growth due to reduced sunlight penetrating the water column, and directly filling in impoundments.

Most sedimentation in North Carolina is caused by water erosion. Water moves particles of soil along the surface, and depending on the concentration of flow can carve deep gullies. These gullies negatively impact water and habitat quality and can discourage the use and enjoyment of a tract of land by degrading paths, trails, roads, and fields. Carefully planning soil disturbing activities can prevent erosion, but once it has occurred correcting the negative impacts of erosion becomes more challenging and costly. It is not uncommon for heavy equipment to be required to reshape the land to reduce the likelihood of future erosion issues. In many instances, erosion removes the topsoil and organic matter, reducing the fertility of the impacted area, and making site rehabilitation even more challenging.

The Erosion Control management activity will be included in a Wildlife Habitat Conservation Agreement (WHCA) only under specific and limited situations. Many practices which address erosion are also best management practices within riparian and wetland areas. These practices, including stabilizing roads and trails within a stream and riparian zone, excluding vehicular travel within wetland buffers, and establishing vegetation for riparian buffer installation or expansion, should be addressed with the Habitat Control management activity. The following items will be considered when developing a WHCA which includes Erosion Control as a qualifying Wildlife Reserve Land (WRL) management activity.

STREAMBANK OR IN-STREAM CHANNEL STABILIZATION directly impacts the structure of the streambank and channel of a flowing body of water. This practice may include grading, placement of rocks, use of biodegradable mats, or strategically placed natural woody debris to reduce erosion within a channel or directly along the banks of a channel. These activities are often associated with stream



Properly maintained roads provide access and can greatly increase the enjoyment of a property, but neglected roads can erode leading to sediment that degrades aquatic and wetland habitats. Installing diversions, proper grading, and establishing vegetation improves access and greatly reduces the ecological impact from erosion.



1722 MAIL SERVICE CENTER RALEIGH, NC 27699-1700 (919) 707-0050 NCWILDLIFE.GOV restoration projects which require input from an engineer and governmental permitting. It is recommended that the landowner know and understand any permitting requirements associated with the installation of practices included in their WHCA. Riprap type rock and monofilament type netting are not allowed as part of this activity as they can result in entrapment and mortality of wildlife species. Stabilizing the banks of ponds should be addressed with the Supplemental Water management activity, and measures to repair or stabilize areas within floodplains should be considered riparian buffer management addressed with the Habitat Control activity.

GRADING, SHAPING, AND VEGETATION TO REDUCE EROSION in upland sites can have a benefit to wildlife and habitat quality. Concentrated flow of water originating from disturbed upland areas can travel long distances before reaching waterways. While an adequate riparian buffer will help to catch much of the sediment prior to it impacting aquatic habitats, correcting the erosion issue at the source should be considered paramount in most instances.

Typical areas of erosion concern in upland sites include access roads, fields, and recreational trails. Installing water diversions, grading to adjust slope, graveling, installing culverts, and seeding to stabilize soil are common practices for addressing erosion concerns in these areas. In most instances implementing these practices in the upland will not require permitting, but the landowner is responsible for verifying regulatory requirements. It is recommended that natural resource professionals from the local Soil & Water Conservation District or Natural Resources Conservation Service be consulted prior to implementation.

Controlling erosion can benefit both terrestrial and aquatic ecosystems. Practices that address streambank or in-stream stabilization and upland site erosion may meet the WRL criteria for the Erosion Control activity. Detailed methodology will be included in the

WHCA and erosion control treatments must be recorded in the activity log.

